INDEX

Petition under Section 62 and 79(1) (a) of the Electricity Act, 2003 read with Chapter–V of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 , Regulation 13 of the Central Electricity Regulatory Commission (Procedure for tariff Determination) Regulations, 2019 for revision of tariff for the period 01.04.2019 to 31.03.2024 (upto 7th October 2019) after carrying out truing up exercise for the period of 2019-24 with respect to the capital expenditure including additional capital expenditure incurred during the period of 2019-24 in respect of Kopili Hydro Electric Station and also determination of tariff of the Power Station after Reconstruction, Renovation & Modernization for life extension beyond the normal useful life as per the Regulation 27(4) of the 2019 Tariff Regulations & Regulation 27(4) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for approval of tariff of Kopili Hydro Power Station (KHPS) (4 X 50 = 200 MW) for the period from unit wise CODs to 31.03.2029.

Sl. No.	Particulars	Page No.
1.	Petition on affidavit	1-31
2.	Summary (Tariff Forms) for determination of Annual Fixed Charges for the period of 01.04.2019 to 07.10.2019 and related forms : Annexure-I	32-49
3.	Summary (Tariff Forms) for determination of Annual Fixed Charges for the period of 20.08.2023 to 31.03.2024 and related forms : Annexure-II	50-91
4.	Summary (Tariff Forms) for determination of Annual Fixed Charges for the period of 01.04.2024 to 31.03.2029 and related forms enclosed as Annexure-III	92-133
5.	Honble Commission's Tariff Order against Petition No. 370/GT/2019 : Annexure -IV	134-194
6.	Honble Commission's Tariff Order against Petition No, 398/GT/2020 : Annexure- V	195-211
7.	Auditor Certificate for Add Cap and Secuirity Expenses :Annexure-VI	212-213
8.	CEA letter dated 22.03.2021, CEA vetted the E&;M Cost for Rs. 391.11 Crore at Jan'2021 price level : Annexure-VII	214-229
9.	CEA's Hydro Engineering and Renovation and Modernisation Division vide its letter no. 132/2 (NEEPCO-Kopili)2021/HE& RM/CEA dated 04.06.2021:Annexure-VIII, (i&;ii)	230-264
10.	CEA vetting the Civil and HM works Cost as Annexure-IX	265-266
11.	CEA's Hydro Engineering and Renovation and Modernisation Division vide its letter no. 132/2 (NEEPCO-Kopili)2021/HE& RM/CEA/261 dated 21.06.2021 as Annexure-X	267-269

Sl. No.	Particulars	Page No.
12.	Honble Commission's Order dated 25 th August 2023 against Petition no. 189/MP/2022 as Annexure-XI	270-295
13.	Board of Directors of NEEPCO on 10 th August 2024 approved the Revised Cost Estimate at May' 2024 price level Annexure-XII	296
14.	Submission of approved RCE to CEA : Annexure-XIII	297-298
15.	The individual COD declaration letter & Clearance from NERPC :Annexure- XIV	299-310
16.	Revised cost Estimate (May 2024 price level) as Annexure-XV	311-783
17.	Note detailing reasons and justifications for the time and cost overrun :Annexure – XVI	784-805
18.	Loan Agreement with SBI & HDFC Annexure XVII(i) & XVII(ii)	806-836
19.	Insurance Policy : Annexure- XVIII	837-851
20.	Auditor's Certificate on Capital Cost , Un-discharged liabilities etc as Annexure-XIX against the unit came under Tariff Regulation 2019	852-858
21.	Cost Audit Reports for FY 2020-21, 21-22 & 22-23 are enclosed as Annexure-XX against Station COD and under Tariff Regulation 2024	859-865
22.	Form 1	866-867
23.	Proof of service	868

नॉर्थ ईस्टर्न इलेक्ट्रिक पावर कॉर्पोरेशन लिमिटेड
(भारत सरकार का उद्यम)
North Eastern Electric Power Corporation Ltd.
(A Govt. of India Enterprise)

कॉर्पोरेट अफेयर्स | Corporate Affairs

Office of the Chief General Manager, CA, RE & CC
Second Floor, Block-C, Centrum Mall
Sultanpur, M.G. Road, New Delhi-110030
E-mail: corpaffairs@neepco.co.in

सं-/No. CA/37/212

दिनांक/Dated 02.09.2024

सेवा में/To,

सचिव/The Secretary

केंद्रीय विद्युत विनियामक आयोग/Central Electricity Regulatory Commission

तीसरी एवं चौथी मंजिल/3rd & 4th Floor,

चंद्रलोक भवन/Chanderlok Building,

36, जनपथ, नई दिल्ली-110001/36, Janpath, New Delhi-110001

विषय/Sub: Petition under Section 62 and 79(1) (a) of the Electricity Act, 2003 read with Chapter–V of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 , Regulation 13 of the Central Electricity Regulatory Commission (Procedure for tariff Determination) Regulations, 2019 for revision of tariff for the period 01.04.2019 to 31.03.2024 (upto 7th October 2019) after carrying out truing up exercise for the period of 2019-24 with respect to the capital expenditure including additional capital expenditure incurred during the period of 2019-24 in respect of Kopili Hydro Electric Station and also determination of tariff of the Power Station after Reconstruction, Renovation & Modernization for life extension beyond the normal useful life as per the Regulation 27(4) of the 2019 Tariff Regulations & Regulation 27(4) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for approval of tariff of Kopili Hydro Power Station (KHPS) (4 X 50 = 200 MW) for the period from unit wise CODs to 31.03.2029

महोदय /Dear Sir,

This has reference to the above. Please find enclosed, on affidavit, with an advance copy to the respondents, Petition for revision of tariff in respect of Kopili Hydro Electric Station (200MW).

This is for kind consideration of the Honourable Commission.

धन्यवाद/Thanking you,

भवदीया/Yours faithfully,

ई. पिरबट

(ई. पिरबट)

उप महा प्रबन्धक (ई)

संलग्नक: यथोक्त/Enclo: As above

ज्ञापन सं-/CA/37/213-221

दिनांक/Dated: 02.09.2024

1. अध्यक्ष, असम पावर डिस्ट्रीब्यूशन कंपनी लिमिटेड, बिजली भवन, पलटन बाजार, गुवाहाटी -781001

2. मुख्य अभियन्ता, विद्युत और बिजली विभाग, कावलपीठा, नया सचिवालय परिसर, आइजोल - 796005, मिजोरम

3. मुख्य अभियंता (कॉम) सह सीईआई, विद्युत विभाग, अरुणाचल प्रदेश सरकार, विद्युत भवन, 'ओ' पॉइंट तिनियाली, ईटानगर - 791111

4. अध्यक्ष, मेघालय पावर डिस्ट्रीब्यूशन कॉर्पोरेशन लिमिटेड, शॉर्ट राउंड रोड, लुमजंगशई, शिलांग - 793001

5. अपर महाप्रबंधक (सी एण्ड एसओ), त्रिपुरा स्टेट इलेक्ट्रिसिटी कॉर्पोरेशन लिमिटेड, 'विद्युत भवन', बनमालीपुर, अगरतला - 799001

6. मुख्य अभियन्ता, बिजली विभाग, नागालैंड सरकार, बिजली घर, कोहिमा - 797001

7. मुख्य अभियंता, मणिपुर राज्य विद्युत वितरण निगम लिमिटेड, तीसरी मंजिल, नया निदेशालय भवन, दूसरे एनआर गेट के पास, इंफाल-दीमापुर रोड, इंफाल, मणिपुर - 795001

8. सदस्य सचिव, नॉर्थ ईस्टर्न रीजनल पावर कमिटी, एनईआरपीसी कॉम्प्लेक्स, डोंग परमव, लापलांग, शिलांग -793006, मेघालय

9. महाप्रबंधक, नॉर्थ ईस्टर्न रीजनल लोड डिस्पैच सेंटर, डोंगटीह, लोअर नोंग्राह, लापलांग, शिलांग -793006, मेघालय

1. The Chairman, Assam Power Distribution Company Ltd., Bijulee Bhawan, Paltan Bazar, Guwahati– 781001.

2. Chief Engineer, Power & Electricity Deptt.,Kawlpetha, New Secretariat Complex, Aizawl – 796005, Mizoram.

3. Chief Engineer(Com)cum CEI, Department of Power, Government of Arunachal Pradesh, Bidyut Bhawan,'O' Point Tiniali,Itanagar - 791111

4.The Chairman, Meghalaya Power Distribution Corporation Ltd., Short Round Road, Lumjingshai, Shillong– 793001

5.Addl. General Manager (C & SO), Tripura State Electricity Corporation Ltd, " Bidyut Bhawan", Banamalipur, Agartala–799001

6.Chief Engineer, Department of Power,Government of Nagaland,Electricity House, Kohima–797001

7Chief Engineer, Manipur State Power Distribution Corporation Ltd., 3rd Floor, New Directorate Building, Near 2nd M.R Gate, Imphal- Dimapur Road, Imphal, Manipur - 795001

8.Member Secretary, North Eastern Regional Power Committee, NERPC Complex, Dong Parmaw, Lapalang, Shillong-793006, Meghalaya.

9.General Manager, North Eastern Regional Load Despatch Centre, Dongtieh, Lower Nongrah, Lapalang, Shillong-793006, Meghalaya.

उप महा प्रबन्धक (ई)

~ 1 ~

सत्यमेव जयते

INDIA NON JUDICIAL

Government of National Capital Territory of Delhi

e-Stamp

Certificate No.	:	IN-DL71148494539140V
Certificate Issued Date	:	03-Mar-2023 11:54 AM
Account Reference	:	IMPACC (IV)/ dl1052503/ DELHI/ DL-DLH
Unique Doc. Reference	:	SUBIN-DLDL1052503144828771634O7V
Purchased by	:	NEEPCO LIMITED
Description of Document	:	Article 4 Affidavit
Property Description	:	Not Applicable
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	NEEPCO LIMITED
Second Party	:	SUBMISSIONS OF DATA TO CERC
Stamp Duty Paid By	:	NEEPCO LIMITED
Stamp Duty Amount(Rs.)	:	10 (Ten only)

Please write or type below this line

THE SEAL OF NOTARY PUBLIC

BEFORE THE CENTRAL ELECTRICITY REGULATORY COMMISSION, NEW DELHI

IN THE MATTER OF:

Petition under Section 62 and 79(1) (a) of the Electricity Act, 2003 read with Chapter–V of the Central Electricity Regulatory Commission (Conduct of Business)Regulations, 1999 , Regulation 13 of the Central Electricity Regulatory Commission(Procedure for tariff Determination) Regulations, 2019 for revision of tariff for the period 01.04.2019 to 31.03.2024 (upto 7 th October 2019) after carrying out truing up exercise for the period of 2019-24 with respect to the capital expenditure including additional capital expenditure incurred during the period of 2019-24 in respect of Kopili Hydro Electric Station and also determination of tariff of the Power Station after Reconstruction, Renovation & Modernization for life extension beyond the normal useful life as per the Regulation 27(4) of the 2019 Tariff Regulations & Regulation 27(4) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for approval of tariff of Kopili Hydro Power Station (KHPS) (4 X 50 = 200 MW) for the period from unit wise CODs to 31.03.2029.

Statutory Alert:
1. The authenticity of this Stamp certificate should be verified at 'www.shcilestamp.com' or using e-Stamp Mobile App of Stock Holding. Any discrepancy in the details on this Certificate and as available on the website / Mobile App renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.

AND

IN THE MATTER OF:

North Eastern Electric Power Corporation Limited
Corporate Office : Brookland Compound
Lower New Colony, Shillong 793 003
Meghalaya ..... PETITIONER

VERSUS

Assam Power Distribution Company Ltd
(Erstwhile Assam State Electricity Board)
"Bijulee Bhawan", Paltanbazar, Guwahati 781001 and 08 (eight) others

RESPONDENTS

Affidavit verifying the submission of NEEPCO.
I, Elizabeth Pyrbot, daughter of J.C. Singh, aged about 52 years, resident of Alaknanda, Delhi do solemnly affirm and state as follows:

1. That I am Dy. General Manager(E) in the Petitioner - North Eastern Electric Power Corporation Limited and am well conversant with the facts of the case and am competent to swear the present affidavit.

2. That I have read the contents of the accompanying submission filed by North Eastern Electric Power Corporation Limited and have understood the contents of the same.

3. That the contents of the accompanying submission are based on information available with the petitioner in the normal course of business and believed by the deponent to be true.

4. That the annexures to the submissions are true and correct copies of their original

E Pyrbot
Deponent

VERIFICATION:

Verified at New Delhi on 02.09.2024, that the contents of above affidavit are true to the best of my knowledge, no part of it is false and nothing material has been concealed therefrom.

E Pyrbot
Deponent

THE SEAL OF NOTARY PUBLIC

ATTESTED
NOTARY PUBLIC
Govt of NCT Delhi
- 2 SEP 2024

PETITION NO. _____ /2024

PETITION FOR APPROVAL OF TARIFF OF 200 MW KOPILI HYDRO POWER STATION OF NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED FOR THE PERIOD FROM COD of 1ST UNIT TO 31.03.2029 ALONG WITH THE TRUING-UP FOR THE PERIOD 2019-20 .

NORTH EASTERN ELECTRIC POWER CORPORATION LTD

COMMERCIAL DEPARTMENT

Corporate Office:
Brookland Compound : Lower New Colony
Shillong – 793003, Meghalaya

INDEX

Petition under Section 62 and 79(1) (a) of the Electricity Act, 2003 read with Chapter-V of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 , Regulation 13 of the Central Electricity Regulatory Commission (Procedure for tariff Determination) Regulations, 2019 for revision of tariff for the period 01.04.2019 to 31.03.2024 (upto 7th October 2019) after carrying out truing up exercise for the period of 2019-24 with respect to the capital expenditure including additional capital expenditure incurred during the period of 2019-24 in respect of Kopili Hydro Electric Station and also determination of tariff of the Power Station after Reconstruction, Renovation & Modernization for life extension beyond the normal useful life as per the Regulation 27(4) of the 2019 Tariff Regulations & Regulation 27(4) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for approval of tariff of Kopili Hydro Power Station (KHPS) (4 X 50 = 200 MW) for the period from unit wise CODs to 31.03.2029.

:

Sl. No.	Particulars	Page No.
1	Forwarding	
2	Affidavit	
3	Summary (Tariff Forms) for determination of Annual Fixed Charges for the period of 01.04.2019 to 07.10.2019 and related forms enclosed as Annexure-**I**	
4	Summary (Tariff Forms) for determination of Annual Fixed Charges for the period of 20.08.2023 to 31.03.2024 and related forms enclosed as Annexure-**II**	
5	Summary (Tariff Forms) for determination of Annual Fixed Charges for the period of 01.04.2024 to 31.03.2029 and related forms enclosed as Annexure-**III**	
6	Hon'ble Commission's Tariff Order against Petition No. 370/GT/2019 as Annexure -IV	
7	Hon'ble Commission's Tariff Order against Petition No. 398 /GT/2020 as Annexure- V	
8	Auditor Certificate for Add Cap and Secuirity Expenses attached as Annexure-VI	
9	CEA dated 22.03.2021, CEA vetted the E&M Cost for Rs. 391.11 Crore at Jan'2021 price level attached as Annexure-VII	
10	CEA's Hydro Engineering and Renovation and Modernisation Division vide its letter no. 132/2 (NEEPCO-Kopili)2021/HE&RM/CEA dated 04.06.2021 attached as **Annexure-VIII, (i&ii)**	
11	CEA has vetted the Civil and HM works Cost as Annexure-IX	

Sl. No.	Particulars	Page No.
12	CEA's Hydro Engineering and Renovation and Modernisation Division vide its letter no. 132/2 (NEEPCO-Kopili)2021/HE&RM/CEA/261 dated 21.06.2021 as Annexure-X	
13	Hon'ble Commission's Order dated 25th August 2023 against Petition no. 189/MP/2022 as Annexure-XI	
14	Board of Directors of NEEPCO on 10th August 2024 approved the Revised Cost Estimate at May' 2024 price level attached as Annexure-XII	
15	Submission of approved RCE to CEA is attached as Annexure-XIII	
16	Revised cost Estimate (May 2024 price level) as Annexure-XV	
17	Note detailing reasons and justifications for the time and cost overrun is attached as **Annexure –XVI**	
18	Loan Agreement with SBI & HDFC Annexure XVII(i) & XVII(ii)	
19	Insurance Policy is attached as Annexure- XVIII	
20	Auditor's Certificate on Capital Cost , Un-discharged liabilities etc as **Annexure-XIX against the unit came under Tariff Regulation 2019**	
21	Cost Audit Reports for FY 2020-21, 21-22 & 22-23 are enclosed as **Annexure-XX against Station COD and under Tariff Regulation 2024**	
22	Filing fees letter along with Form-1: **Annexure - VIII**	

BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION, NEW DELHI

Petition No. /2024

IN THE MATTER OF:

Petition under Section 62 and 79(1) (a) of the Electricity Act, 2003 read with Chapter-V of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 , Regulation 13 of the Central Electricity Regulatory Commission (Procedure for tariff Determination) Regulations, 2019 for revision of tariff for the period 01.04.2019 to 31.03.2024 (upto 7th October 2019) after carrying out truing up exercise for the period of 2019-24 with respect to the capital expenditure including additional capital expenditure incurred during the period of 2019-24 in respect of Kopili Hydro Electric Station and also determination of tariff of the Power Station after Reconstruction, Renovation & Modernization for life extension beyond the normal useful life as per the Regulation 27(4) of the 2019 Tariff Regulations & Regulation 27(4) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for approval of tariff of Kopili Hydro Power Station (KHPS) (4 X 50 = 200 MW) for the period from unit wise CODs to 31.03.2029.

PETITIONER:

North Eastern Electric Power Corporation Limited
(A Central PSE under Ministry of Power, Govt. of India)
Corporate Office: Brookland Compound,
Lower New Colony, Shillong – 793003
Meghalaya.

RESPONDENTS:

1. Assam Power Distribution Company Limited,
Through its Chief General Manager (Commercial)
"Bijulee Bhawan", Paltan bazar,
Guwahati-781 001

2. Department of Power,
Through its Chief Engineer (Power)
Government of Arunachal Pradesh,
Vidyut Bhawan,
Itanagar – 791111

3. Department of Power,
Through its Engineer in Chief (Power),
Government of Nagaland,
Kohima – 797 001

4. Manipur State Power Distribution Company Limited,
Through its Managing Director (MSPDCL)
Government of Manipur,
Keishampat,
Imphal – 795001

5. Power and Electricity Department,
Through its Engineer in Chief
Government of Mizoram,
Aizawal, Mizoram – 796001

6. Meghalaya Energy Corporation Limited,
Through its Chairman & Managing Director
Short Round road, "LUMJINGSHAI"
Shillong – 793001, Meghalya

7. Tripura State Electricity Corporation Limited
Through its Deputy General Manager, Commercial & System Operation
Vidyut Bhawan, North Banamalipur,
Agartala, Tripura – 799001 .

8. North Eastern Regional Power Committee,
Through its Member Secretary
NERPC Complex, Dong Parmaw, Lapalang, Shillong-793006

9. North Eastern Regional Load Despatch Centre,
Through its Chief General Manager
Dongtieh, Lower Nongrah, Lapalang, Shillong -793006

It is respectfully submitted by the petitioner: -

1. The **North Eastern Electric Power Corporation Limited** (hereinafter referred to as **NEEPCO**) was established under the Companies Act, 1956 as a Government of India Enterprise on 2nd April, 1976 with its Headquarters at Shillong, Meghalaya, and at present is a wholly owned subsidiary of NTPC Limited.

2. The **Kopili Hydroelectric Power Station** (4x50 MW = 200 MW) (hereinafter referred to as **Kopili HPS)**, is a Hydro-Electric Power Station located in the Dima Hasao District of Assam owned and operated by NEEPCO.

3. The dates of commercial operation of the units of the Kopili Power Station (4x50 MW), and the corresponding unit capacities are indicated in the table below:

Unit No.	Date Of Commercial Operation	Unit Capacity
Unit I	05.07.1988	50 MW
Unit II	22.07.1988	50 MW
Unit III	01.05.1997	50 MW
Unit IV	12.07.1997	50 MW
Station COD	**12.07.1997**	

4. It is submitted that the electricity generated from Kopili Power Station is being supplied to the respondents from Sl.No.1 to Sl No.7 mentioned herein above.

5. The Petitioner had submitted the final truing up Petition No. 370/GT/2019 for KHEP on 04.10.2019 for revision of Annual Fixed Charges (AFC) for the period of 01.04.2014 to 31.03.2019 on account of actual capital expenditure incurred during the said period. Hon'ble Commission approved the Truing-up petition vide order dated 31/03/2023 attached as **Annexure- IV**

6. Subsequently Petitioner fi led the Tariff Determination Petition for 2019-24 before the Hon'ble Commission vide Petition number 398 /GT/2020 dated 23/01/2020. Vide order dated 31st March 2023 Hon'ble Commission approved the tariff for the period 2019-24 attached as **Annexure- V**

7. Since 2006 the power house had been operating in extremely acidic environment, with the pH value of reservoir water feeding the plant ranging between 2.8 to 5.44, extensive damage was caused to the underwater metallic parts. As the machines were not designed to operate under such acidic conditions, the plant availability and generation had gone down considerably. Formation of sulphuric acid in some parts of the upper catchment area due to the oxidation and hydration of pyrites that are exposed to atmosphere by human activities and leaching of the acid into the surface and sub-surface flow of the Koplili river that feeds the reservoir, was inferred as a reason of the acidity. GSI(Geological Survey of India) study conducted earlier revealed that the sub-water sheds on western side of the Kopili Catchment at upstream of the Khandong Dam is the area contributing most in contaminating the water in the area and making it acidic. Thus the aforesaid sub-water shed appears to have already become an environmental hot spot over an unknown period. GSI has identified unscientific extraction of coal in the catchment area as the primary reason for this acidic nature of water.

   The Plant machinery and equipment started to get continually impaired due to reservoir acidity problem, which was first detected in 2006 when Geological Survey of India (GSI) was enlisted by NEEPCO to find out the causes of damage to the plant equipment and machinery. Multidisciplinary team of experts from CWC, CEA, CSMRS visited Kopili HEP in 2009 and suggested different measures to cope up with the problem, including replacement of the metallic parts with parts made of acid resistant material.
   Moreover, being top bracketed high-speed machines (600 rpm), the units of Kopili have experienced quite a few unique problems like Labyrinth Failure, Resonance, failure of brake track etc.

8. Devastation of Kopili Power House: In the early morning of 7th October, 2019 an unfortunate incident of penstock rupture occurred, causing complete inundation of the power house in mud and water and loss of four lives. As the Penstock Protection Butterfly Valves were damaged and rendered inoperable by the incident, the flow of water could not be controlled and it continued till 12th October, 2019, when the Intake gate could be finally lowered with great difficulty under heavy water flowing conditions. The impact of the rupture caused the hills on the upstream side to be washed away, filling up the machine dome in the power house resulting in the water flooding upto the EOT crane beam level. The Generating Transformer yard and Switch yard were also completely covered by mud and sand upto a height of 2-3 meters. The power house approach roads were also completely washed away. As a result of this incident the entire generating plant had been rendered completely inoperable and beyond repair.

9. The CEA guidelines on the "Best Practices & Bench Marking for Hydro" under Chapter 7, Renovation, and Modernisation & Up-rating of hydro power plants stipulate that by undertaking timely RM&U & Life extension program, the generating plant can be made

to operate for an extended period of 20-25 years with improved reliability and availability.

10. Due to the devastation of the Power Station NEEPCO had no other option but to go for forced R&M of the Power Station.

TRUING-UP FOR THE PERIOD 2019-20

11. The Annual Design Energy of Kopili Hydro Electric Power Plant was **1186.14 Million Units (MU) prior to R&M.**

12. The Capital cost as on 31.03.2019 admitted for the purpose of tariff by the Commission in the above order was Rs. 35100.29 Lakhs vide CERC order dated. 31.03.2023 in the petition no. 398/GT/2020.The capital cost allowed by the Commission for the period 01st April 2019 to 31st March 2024 is as below:

Table 1: Statement of Project Capital Cost as per para 8 of Tariff Order for 2019-24.

Rs in Lakhs

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	35100.29	35100.29	35100.29	35100.29	35100.29
Additional Capital expenditure admitted	0.00	0.00	0.00	0.00	0.00
Closing Capital Cost as on 31st Mar of the year	35100.29	35100.29	35100.29	35100.29	35100.29

13. Additional Capitalization: The Relevant provisions of Regulation 26 of Tariff Regulations, 2019 in respect of Additional capitalization and De-Capitalization to be allowed by the Hon'ble Commission in the Tariff. Accordingly, Petitioner has claimed Additional Capitalization Rs. 1.97 Crore during the period. Auditor Certificate has been attached as **Annexure-** VI

14. The following are the normative Parameters for the Power Station:

    a. NAPAF of the Generating Station is 69 % in terms of Regulation 50 (A) (4) of Tariff Regulations 2019.
    b. Auxiliary Energy Consumption of the Generating Station is 1.2 % in terms of the Regulation **50 (C)** of Tariff Regulation 2019; for **Static Excitation system** and **surface** operating station with installed capacity of above 200 MW.
    c. **Regulation 35 (2) (a)** of Tariff Regulation 2019 provides the following normative O&M expenses for this Generating Station:

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
O&M Expenses	9044.47	9475.58	9927.24	10400.43	10896.17

d. The actual Security expense for the year 2019-20 (upto Sept'2019) is Rs. 459.54 lakh. The Audited statement is attached as **Annexure- VI** .

BACKGROUND OF FORCED RECONSTRUCTION,RENOVATION & MODERNIZATION

15. Due to the devastation of Power Station on 7th October 2019 the entire plant was under forced R&M till the CoD of the 1st Unit after R&M i.e on 20th August 2023. Accordingly, the Truing-up exercise has been done for the period w.e.f 1st April'2019 to 7th Oct'2019 (Annualized for the period 2019-20). The Truing up exercise is enclosed as **Annexure-I** after taking into consideration the additional capitalization during that period.

16. NEEPCO had filed Petition no 189/MP/2022 before the Hon'ble Commission for approval of proposal for Reconstruction, Renovation & Modernization for Life Extension of the 4x50 MW Kopili Power Station. In the DPR submitted, the cost of the project had been estimated at March 2020 Price Level with a construction period of 24 months. The estimated present-day cost of the project is Rs. 1117.07 crore, including Rs. 870.76 crores of Hard Cost and Rs. 47.21 crore as IDC at March 2020 Price Level and a lump sum provision of Rs. 2.0 crore is kept towards financial charges and also a residual cost of Rs. 197.10 crore.

However, CEA had approved the following cost of the project:

- Vide letter from Hydro Project Appraisal Division , CEA dated 22.03.2021, CEA vetted the E&M Cost for Rs. 391.11 Crore at Jan'2021 price level (attached at **Annexure-VII)**

- Vide CEA's Hydro Engineering and Renovation and Modernisation Division vide its letter no. 132/2 (NEEPCO-Kopili) 2021/HE&RM/CEA dated 04.06.2021 attached at **Annexure- VIII (i&ii)** based on recommendation of Thermal Civil Design Division , CEA letter dated 3.06.2021 attached as **Annexure- IX** , CEA has vetted the Civil and HM works Cost of Rs.43300. 67 lakhs at Jan'2021 Price level.

- Vide CEA's Hydro Engineering and Renovation and Modernisation Division vide its letter no. 132/2 (NEEPCO-Kopili)2021/HE&RM/CEA/251 dated 21.06.2021 , CEA has given the concurrence to the DPR and vetted the hard cost (without IDC,FC) at Jan'2021 price level for Rs. 82411.67 lakhs (attached at **Annexure- X .)**

- Vide letter no. 13/2(NEEPCO-Kopili)/2021/HE&RM/CEA dated 20.06.2022 , CEA approved the IDC of Rs. 53. 97 Crores i.e Capital cost including IDC of Rs. 878.09 Crores (Rs. 824.12+53.95 Crore) attached at Annexure-

- Further, the residual value of the old asset is worked out as Rs.167.68 Crores. Considering the approved capital cost and Tariff Regulation 2019, the 1st Year and levelised tariff is estimated at Rs. 2.37/unit and Rs. 2.39/.unit respectively.

The abstract of cost estimate is shown below:

Sl.No	Description	Submitted by NEEPCO (Rupees in Lakhs)	Vetted by CEA (Rupees in Lakhs)
I. Electro Mechanical Works			
1.	Plant & Machinery	26722.96	26722.96
2	Engg., Supervision, Detail Engineering , Model Testing of Turbine, Consultant Fees , technological know-how , project Management etc	3430.36	2341.19
3	GST on above service	5619.36	5553.20
4	Pre-operative and other expenses	3875.41	3581.42
5	Dismantling Charges	966.01	912.41
Total (E&M) Works		**40614.00**	**39111.00**
II. HM & Civil Works			
6	HM& Civil Works	43759.90	43300.67
TOTAL COST(Rs. In Lakh)		**84373.90**	**82411.69**
IDC(In Lakh)			**5395.00**
Residual Value of old Asset			**16768.00**
GRAND TOTAL (in Lakh)			**104574.69**

17. During the Reconstruction and R&M, the major portion of work was replacement of electro-mechanical component of the power station. The works like Dam and spillway repair, HRT repair, replacement of penstock protection butterfly valves, penstock replacement, intake gates repair, draft tube gates repair, and repair/replacement of various hoists etc. has also been carried out during Reconstruction and R&M.

18. Vide order dated 25th August 2023 against Petition no. 189/MP/2022, Hon'ble Commission had approved the proposal for Reconstruction, Renovation & Modernization for Life Extension of the 4x50 MW Kopili Power Station. The following important observation has been made by Hon'ble Commission (copy attached as **Annexure -XI**) while disposing the Petition:

a. *" 22. Keeping in view that CEA had cleared the DPR for useful life of 40 years of the project, we allow the life extension of the Kopili HPS by 40 years."*

b. *" 24. The matter has been considered. It is noticed that CEA considering the updated Power Potential Study of Kopili HPS and revised the Design Energy as 993.80 MUs. Accordingly, we allow the same."*

c. *" 27. Considering the above discussions, regarding the prayer (a) of the Petitioner for in principle approval of R&M of the generating station, the Commission based on the Detailed Project Report vetted by CEA, approves the R&M for life extension of the 4x50 MW Kopili Power Station with an estimated project cost of Rs 878.09 crore (Rs. 824.12+53.97 Crore) including IDC of Rs. 53.97 crore as vetted by CEA along with life extension of the generating station by 40 years. The revised Design Energy of the generating station after completion of RM&U shall be 993.80 MUs, as approved by the CEA. After completion of the said RM&U, the Petitioner shall file a petition for determination of tariff of the generating station, in terms of the Regulation 27(4) of the 2019 Tariff Regulations. As regards approval of residual value of the old asset, the Commission observes that treatment of residual value of the old asset would be a considered in the petition for tariff determination post R&M."*

d. *" 29. Further, with regard to tariff during the R&M period, it is observed that the Commission vide order dated 3.6.2016 in Petition No. 76/MP/2015 while approving the R&M proposal in respect of Bairasiul Power Station of the Petitioner had allowed the recovery of only two components of tariff namely, the O&M expenses and Interest on Loan during the period when the unit/station was under shut down, as provided to thermal generating stations executing R&M/LE program. Though the above proviso relates to thermal generating stations, the same is applicable to all generating stations /units thereof or the transmission systems. In terms of the said proviso, during the period of shutdown of the generating station or transmission system, as the case may be, due to R&M, the generating company or transmission licensee shall be allowed to recover part tariff which shall include only O&M expenses and interest on loan. Accordingly, we direct that the Petitioner is entitled to recover tariff comprising only of O&M and interest on loan for the period units under the R&M. "*

19. Although the Hon'ble Commission had allowed to recover tariff comprising only of O&M and interest on loan for the period of R&M, NEEPCO has not recovered the O&M and interest on loan during the R&M Period. However, after COD of the 1st Unit, NEEPCO billed the beneficiaries @ of Rs.2.35/Kwh which is the provisional tariff till date. Instead, NEEPCO has claimed Rs 114.93 as Establishment cost in the current Petition.

20. **The Board of Directors of NEEPCO on 10th August 2024 approved the Revised Cost Estimate at May' 2024 price level of Reconstruction, R&M in respect of Kopili Power Station amounting to Rs 1201.66 Crore including IDC & FC of Rs 79.74 Crore along with time overrun of 13.20 months (copy attached as Annexure-XII) . The project completion cost of Rs. 1201.66 crore as approved by the Board of Directors of the Petitioner has been submitted to CEA for examination vide**

letter No: NEEPCO/GHY/D&E/T-53/2024-25/304 dated 14th August 2024 (copy attached as Annexure -XIII)

TARIFF APPLICATION AFTER R&M

21. As per the Order dated 25th August 2023 Petitioner requires to apply for tariff determination in terms of the Regulation 27(4) of the 2019 Tariff Regulations:

27.(4) After completion of the renovation and modernisation (R&M), the generating company or the transmission licensee, as the case may be, shall file a petition for determination of tariff. Expenditure incurred or projected to be incurred and admitted by the Commission after prudence check, and after deducting the accumulated depreciation already recovered from the admitted project cost, shall form the basis for determination of tariff.

22. Date of Commercial Operation after the Complete R&M of the Power Station is as follows:

Block/Unit	COD
Unit – I (50 MW)	03.06.2024
Unit - II (50 MW)	12.11.2023
Unit - III (50 MW)	03.09.2023
Unit - IV (50 MW)	20.08.2023
Station (200 MW)	**03.06.2024**

The individual COD declaration letter & Clearance from NERPC is attached as **Annexure- XIV** .

23. Section 62 of Electricity Act, 2003 provides for determination of Tariff by the appropriate Commission for the supply of electricity by Generating Company. The Hon'ble Commission is vested with the jurisdiction to regulate the Tariff of the Generating Companies, owned or controlled by the Central Government and other Generating Companies (ISGS) having composite scheme for generation and sale of electricity in more than one state as envisaged under Section 79(1) (a) & (b) of Electricity Act, 2003.

As Kopili HPS is a generating station of NEEPCO, which is under the administrative control of the Ministry of Power, accordingly supply of electricity to the beneficiaries will be made at the rate determined by the Hon'ble Commission

24. Tariff for the Power Station after R&M will fall under two Tariff Control Periods. First three units i.e Unit-IV, Unit-III & Unit-II will fall under Control Period 2019-24 whereas Station COD i.e the last Unit (Unit-I) falls under Control Period 2024-29.

25. The Construction Schedule for the Forced R&M of the Kopili Hydro Power Station (KHPS) (4x50 MW) was accorded by Thermal Civil Design Division of CEA, Ministry of Power for a period of 42 months starting from 1st November 2019 conveyed vide letter no. CEA-TH-18-11(14)/1/2021-TCD dated 20.07.2021. The copy of the letter is a part of Revised Cost Estimate (May, 2024 Price level) and attached at **Annexure- XV**.

    The Power station after forced R&M was scheduled for commissioning in April'2023 but mainly due to Covid-19 pandemic and surprises encountered during Unit-1 R&M, the Station COD was delayed by 13.2 months despite the 1st Unit (i.e Unit-IV) being commissioned in August 2023. After rectification of spiral case of Unit-1 , the last Unit (i.e Unit-I) was put into commercial operation on 3rd June 2024.

26. After the approval of Completed Project Cost by the Board of Directors on 10th August 2024, the Petitioner is filing the present petition for determination of Tariff of the 200 MW (4x50 MW) Kopili Hydro Power Station based on the approved completed capital expenditure for the period starting from CoD of Unit IV up to 31.03.2024 as per the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 and w.e.f 1st April'2024 till Station CoD and thereafter till 31st March 2029 as per the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024.

27. The application for determination of Tariff is being submitted along with the duly filled forms as per provisions of the Tariff Regulations, 2019 & Tariff Regulation, 2024 attached to this Petition. It is further submitted that the petitioner has submitted the information / documents as required under these formats to the extent the same is available with the Petitioner.

    The filled in Formats prescribed by the applicable Regulations are enclosed as **Annexure-II & Annexure- III** .

R&M CAPITAL COST AND FINANCING

28. The completed cost of the R&M as approved by the Board of Directors of NEEPCO on 10th August 2024 is **Rs 1201.66 Crore including IDC & FC of Rs 79.74 Crore along with time overrun of 13.20 months.**

29. The DPR for R&M was approved vide CEA letter no. 13/2(NEEPCO-Kopili)/2021/HE&RM/CEA dated 20.06.2022 , with an IDC of Rs. 53. 97 Crores i.e Capital cost including IDC stands at Rs. 878.09 Crores (Rs. 824.12+53.95 Crore) attached at **Annexure- X** . Further residual value of the old asset is Rs.167.68 Crore.

30. Vide order dated 25th August 2023, Hon'ble Commission has approved the proposal for Reconstruction, Renovation & Modernization for Life Extension of the 4x50 MW Kopili Power Station.

31. The Petitioner has submitted the BoD approved Revised Cost Estimate of Rs. 1201.66 Crore before CEA vide letter dated NEEPCO/GHY/D&E/T-53/2024-25/304 dated 14.08.2024 (enclosed as **Annexure- XIII**) for approval.

    The details of the time and cost overrun along with the reasons and justifications for the same are elaborated in the Tariff Form (5Ei & 5Eii).

The cost break-up of RCE at May'24 PL vis-a-vis CEA approved cost is tabulated below:

Rs. in Crs.

Item Description	CEA Approved Cost at Jan'21 PL	Revised Cost Estimate at May'24 PL			Variation w.r.t to CEA vetted cost
		Expenditure as on May'24	Committed Liabilities	Total Cost	
Civil and HM Works	401.08	540.29	15.89	556.18	155.10
EM Works	370.12	442.73	27.00	469.73	99.61
Establishment Cost	52.92	114.93	0.00	114.93	62.01
Hard Cost	**824.12**	**1097.95**	**42.89**	**1140.84**	**316.72**
IDC &FC	53.97	79.74	0.00	79.74	25.77
Insurance cost against residual Asset of the plant	0.00	15.47	0.00	15.47	15.47
Total	**878.09**	**1193.16**	**42.89**	**1236.05**	**357.96**
(-) Less Receipt: (a) Earning from Infirm power Rs. 4.60 Crs. (b) Sale of Scrap Rs. 29.79 Crs.				-34.39	-34.39
Net Project Cost				**1201.66**	**323.57**

Escalation (included above)	0	82.94	-	(82.94)
Total Cost overrun				**240.63**

The above cost of Rs 1201.66 Crore includes price escalation of Rs 82.94 Crore. The Project has experienced a cost overrun of Rs 240.63 Cr. (27.40 %) and a time overrun of 13.2 months with respect to CEA approval. However, the time overrun has happened with a minimum period of 6.2 months for Unit-3 and with a maximum of 13.2 months for Unit-1. The reasons for the cost overrun and time overrun experienced in the project is elaborated as follows.

COST OVERRUN

The breakup of variance of work portion of Civil & HM work (**Rs. 155.10 Cr**) and EM work (**Rs. 99.61 Cr**) excluding Establishment cost under different heads is given as under:

Sl. No	Description of cost overrun	Civil & HM work	EM work	Total (Rs Crs.)	%age w.r.t total
1	Change in Scope/ Design	0.00	3.40	3.40	1.33%
2	Under / Over provision	26.10	20.62	46.72	18.34%
3	Addition/Deletion	45.37	36.43	81.8	32.11%
	Sub Total	71.47	60.45	131.92	51.79%
4	Price Escalation	59.35	23.59	82.94	32.56%
5	Statutory Levies (Service Tax, VAT, Cess, GST...)	24.28	15.57	39.85	15.65%
	Sub Total	83.62	39.16	122.79	48.21%
6	**Total**	**155.10**	**99.61**	**254.71**	**100.00%**

The main reasons for cost overrun are summarized as under.

A. **Change in Scope/ Design**:

There is an increase of Rs. 3.40 Crore under EM works due to upgradation of the Generator Transformer rating from 63 MVA to 65 MVA and replacing Oil Impregnated Paper (OIP) Bushings with Resin Impregnated Paper (RIP) bushings due to technical requirement.

B. **Under / Over provision:**

The provisioned of Rs 6.0 Crore in CEA approved cost against the head 'O-Miscellaneous' under Civil works was found grossly insufficient during construction stage to cater to the expenditure incurred against security arrangement, construction power, hired vehicles charges and other miscellaneous works. As result, there is a positive variation of Rs 33.19 Cr under this head. However, the resultant variation under this head against Civil works is Rs 26.10 Crore.

Similarly, the provision under EM works for Fire protection, fire detection & alarm system , ventilation system etc was found inadequate, among others. There is a positive variation of Rs 20.62 Crores against EM work under this head.

C. **Addition/Deletion:**

There is an increase of Rs 45.37 Crore against Civil works under this head due to execution of some additional items as per site requirement viz. removal of Steel Liners from Anchor Block, resurfacing of Invert of Umrong HRT using cementitious mortar, dismantling of concrete using core cutting machine, Eddy Current Array Testing of all joints, Steel In-liner in the vicinity of Adit-III, provision of S.S liner at Adit-I, II & III, Refurbishment/Weld Build-up of 3(Three) nos of bifurcation VH, Unit-1,2 & Unit-3&4 of KHPS, etc.

Similarly, there is increase of Rs. 36.43 Crore against EM works primarily due to payment towards erection charges of some sub systems and supervision charges which were not provisioned in the original estimate. Moreover, few additional items which were essential to complete the renovation and modernization works have been executed as per site requirement.

D. **Price Escalation:**

There is an increase of Rs. 59.35 Crore and Rs 23.59 Crore against Civil & EM works respectively due to price escalation as per contract provision. The price escalation is worked out on quarterly based on CPI/WPI for labour, materials and POL etc.

E. **Statutory Levies:**

There is increase in cost of Rs 24.28 Crore and Rs 15.57 Crore against Civil & EM works due to payment towards GST, Cess, etc.

F. **Establishment cost of Civil + EM Works (Variation Rs. 62.01 Crore):**

The establishment cost of the civil works as per CEA Guidelines has been worked out as Rs 63.45 Crore considering basic establishment cost and scattered works, while the establishment cost of the EM works comes to Rs.

26.20 Crore. Thus, the total establishment cost as per CEA norms has been worked as Rs.89.65 Crore.

However, an amount of Rs 114.93 Crore has been actually incurred under Establishment head as on COD. The cost of establishment includes salary and wages, welfare schemes apart from increment and dearness allowances as per Government policy. As such, actual expenditure of Rs 114.93 Crore has been considered in the project cost.

G. **IDC & FC (Variation Rs. 25.77 Crore):**

As per the CEA approved cost an amount of Rs. 53.97 Crore was provisioned against IDC and FC. As on COD, the actual expenditure incurred under this head is Rs. 79.74 Crore for 55.3 months (in which there is time overrun of 13.2 months).

H. **Income from sale of infirm power & sale of scraps:**

An amount of Rs 4.60 Crore has been booked as income from the sale of infirm power before declaration of CoD and Rs 29.79 Crore from the proceed of sale of scraps has been booked as income and therefore the total amount of Rs 34.39 Crore has been deducted from the total cost of the project.

TIME OVERRUN

Zero Date	Original Commissioning Schedule	Sanctioned Construction Period
01.11.2019	30.04.2023	42 months

Original COD	Actual COD	Actual Construction Period	Time Overrun w.r.to COD (in months)
Unit-1: 30.04.2023	03.06.2024	01.11.2019 to 03.06.2024	13.2
Unit-2: 31.03.2023	12.11.2023	01.11.2019 to 12.11.2023	7.5
Unit-3: 28.02.2023	03.09.2023	01.11.2019 to 03.09.2023	6.2
Unit-4: 31.01.2023	20.08.2023	01.11.2019 to 20.08.2023	6.7
Station COD: 03.06.2024		**55.2 months**	**13.2 months**

The main reasons for time overrun are summarized as under.

Sl. No.	Reasons of delays	Net Delay (Months)	Remarks
1	Nationwide lockdown due to Covid-19 pandemic	2.3	All work fronts were adversely affected by Covid-19 pandemic and its subsequent restrictions imposed on movement of men & machineries, affecting supply chain. As such, net delay of 6 months has been considered in line with the measures announced by the Govt. vide DoE (PP Division), MoF vide OM No F-18/04/2020-PPD dtd 13-05-2020 which includes a six-month work extension for projects under Force Majeure Clause to offer some relief to government contractors whose work was hit by Covid-19 lockdown.
2	Night curfew and restrictions imposed by district authorities on account of Covid-19 pandemic (2nd Wave)	1	
3	Covid affect: Delay in supply of major Generator equipment.	2	
4	Covid affect: Delay in supply of Butterfly valves.	0.4	
5	Assam Legislative Assembly election, 2021	0.3	Manpower engaged by package contractors had proceeded to their respective native places to cast their vote in the Assembly election held in Assam on 01-04-2021. Moreover, most of the NEEPCO officials were also deployed for election duty.
6	Loose fall in Adit-II due to poor geology	1	Due to loose fall encountered during the unplugging of the Adit-II, all activities related to Hydro Mechanical works inside HRT got affected.
7	Disruption in construction power supply due to inundation of Khandong Power station caused by unprecedented flood.	0.2	Due to cloud burst that had occurred on 26th March 2022, Khandong Power station was inundated leading to disruption in construction power supply on all work fronts affecting the progress of works.
8	Modification in refurbishment plan of 3 nos. Bifurcation in HPT of Umrong WCS as per suggestion of Expert Consultant.	0.3	Additional time was required for execution of the extra work - Repair/Refurbishment of bifurcations at U/S & D/S of Valve House through weld build-up prior to cladding due to highly corroded/pitted & damaged condition in that areas.
9	Surprises encountered in Unit-I resulting in delay in erection of turbine & generator components of Unit-I	5.7	During weld build-up of spiral case refurbishment based on RLA report, high level of deterioration (a through hole of 5 mm) was observed in spiral case in two segments W17-W18. Therefore, re-checking thickness in various segments of the spiral case through phase array

Sl. No.	Reasons of delays	Net Delay (Months)	Remarks
			mapping, and refurbishment was carried out.
Total Delay (Months)		13.2	

A copy of the note detailing reasons and justifications for the time and cost overrun is attached as **Annexure –XVI .**

32. Depreciation: As the Station COD of the generating station is 12.7.1997 and since the station had completed 12 years of commercial operation as on 13.7.2009, the remaining depreciable value has been spread over the balance useful life of the project during the period 2019-24. Further, Cumulative Depreciation as on 31.3.2019 is Rs. 16996.66 lakh as per the Hon'ble Commission s order dated 31st March 2023 against Tariff Determination Petition no. 370 /GT/2019 (enclosed as **Annexure- IV**) . Also at Sl . no. 17 of the Tariff order against 2019-24 vide Petition no. 398/GT/2020 order dated 31st March 2023 (enclosed as **Annexure-V**) it was mentioned that out of the depreciable value of Rs. 30294. 20 Lakhs against Capital Cost of Rs. 35100.29 Lakhs, only Rs.16996.66 lakh has been depreciated till 31st March'2023. After the devastation of the Power Station NEEPCO had no other option but to go for forced R&M of the Power Station. **Therefore, the unrecovered remaining depreciable value may be added to the approved Capital Cost of Rs. 1201.66 Crore for determination of tariff.**

33. The Petitioner has submitted the BoD approved Revised Cost Estimate before CEA vide letter dated NEEPCO/GHY/D&E/T-53/2024-25/304 dated 14.08.2024 (enclosed as **Annexure- XIII**) for approval.

34. The expenditure on the R&M has been met by NEEPCO with debt equity ratio of 70:30. The project cost is subject to adjustment in accordance with the final recommendation of CEA/CWC on the component of Establishment cost.

TARIFF DETERMINATION

35. The petition contains computation of Annual Fixed Cost and Energy Charges from 20th August 2023 (since COD of the 1st Unit i.e Unit-IV) in the FY 2023-24 in terms of the CERC Tariff Regulations, 2019 and from 1st of April 2024 upto the Station on COD 3rd June 2024 (COD of Last Unit i.e Unit-I) and from 4th June 2024 till 31st March 2025 ,

FY 2025-26,FY 2026-27, FY 2027-28 & FY 2028-29 in terms of the CERC Tariff Regulations, 2014.

36. Vide sl.no. 28 of the Tariff order against Petition no. 189/MP/2022 order dated 25th October 2023, the Hon'ble Commission directed the Petitioner to keep separate details for Assets which were procured during 2014-19 tariff period and also included in the R&M scheme due to damage caused by the Penstock failure. In this regard Petitioner humbly submits that the entire assets procured during 2014-19 was damaged during the devastation of the Power Station.

37. **Capital Cost:** The capital cost for arriving at the AFC as on Station COD dated 3rd June, 2024 is considered as below:

Hard Cost	:	**Rs 1121.92 crore**
IDC & FC	:	**Rs.79.74 crore**
Total	:	**Rs. 1201.66 crore**
Add Residual Value	:	**Rs. 167.68 Crore**
Total Cost (including residual Value): Rs.1369.34		

38. **Additional Capitalization**: Additional Capitalization if any during the 2024-29 period will be claimed during Truing-up Petition.

39. **Financing Plan:** The project has been financed through loan at the rate of interest of 7.50 % p.a. For purpose of tariff calculations 70: 30 Debt: Equity ratio has been considered.

40. **Operational Norms:** The Tariff proposal is based on the following operational norms based on the Tariff Regulation 2024:

Description	Units	Normative Parameters
Target NAPAF for recovery of fixed charges and for incentive	%	69
Auxiliary Energy Consumption	%	1.2%

41. **O&M Expenses:** O&M expenses shall be regulated as per the Regulation 35 (2) **(a)** of Tariff Regulation 2019 & as per Regulation 36(2)(a) of Tariff Regulation 2024.

42. **Initial Spares:** Initial spares of 4% of the Plant and Machinery cost as per Regulation 23 of Tariff Regulation 2024 shall be procured within cutoff date and shall be claimed during Truing-up Petition of 2024-29.

43. **Interim Tariff:** Since commissioning of the 1st Unit (Unit-IV) after Reconstruction, NEEPCO has been charging Provisional Tariff of Rs. 2.35/kWH based on the decision of 47th Commercial Sub-Committee Meeting held on 16th December 2022 on the basis

of Petition filed before the Hon'ble CERC for approval of the DPR with 1st year tariff of Rs. 2.37/unit and levelized tariff of Rs. 2.39/unit (copy attached as **Annexure- X**).

Due to increase in cost of the Reconstruction, Renovation & Modernization works (based on completed cost), the Petitioner prays before the Hon'ble Commission to allow Interim tariff based on Tariff Petition filed before the Hon'ble Commission till final tariff is determined by Hon'ble Commission since COD of the 1st Unit (Unit-IV) as per Regulation 10(3) of Tariff Regulation 2024.

44. **Determination of AFC**: The Annual Fixed Cost (AFC) of the generating station consist of the following components:

I. Return on Equity (grossed up with effective tax rate);
II. Interest on Loan capital;
III. Depreciation;
IV. Interest on Working Capital; and
V. Operation and Maintenance (O&M) Expenses

45. **Return on Equity**:

(a) As per the Regulation 30 of the Tariff Regulations, 2019, Return on Equity shall be computed at the base rate of 16.50% for thermal generating stations, transmission, storage type Hydro Generating Station, system including communication system and run of the River hydro generating station. The Kopili HOS being a Storage type Hydro Generating Station, the base rate of 16.50% has been taken for computation of return on equity upto 2nd June 2024 (i.e till Station COD)

Further as per Regulation 30 of the Tariff Regulations, 2024, Return on Equity shall be computed at the base rate of 17% for Storage type Hydro Generating Station, Pump Storage Hydro Generating Station, and run of the River hydro generating station. The Kopili HOS being a Storage type Hydro Generating Station , the base rate of 17% has been taken for computation of return on equity w.e.f Station COD .

(b) MAT rate @ 17.47% has been considered for the purpose of grossing up of RoE. Impact of effective tax rate for the Financial Years 2023-24 may kindly be allowed to be passed on in accordance to Regulation 31 of the said Tariff Regulations 2019 . Further as per Regulation 31 of Tariff Regulation 2024 same MAT rate may be considered w.e.f 1st April'2024 onwards.

(c) The RoE for each period/year of the Tariff Period for KHEP since COD of 1st Unit (i.e unit IV) till 31.03.2024 and from 1st April 2024 to 31st March 2029 are in the respective Tariff attached as **Annexure- II&III**.

46. **Interest on Loan Capital**:

(a) Regulation 32 of the Tariff Regulations,2019 provides as under: -

(i) The rate of interest on loan shall be the weighted average Rate of interest (ROI) calculated on the basis of actual loan portfolio after providing appropriate accounting adjustment for interest capitalized;
(ii) The Interest on loan shall be calculated on the average normative loan of the year by applying aforesaid weighted average rate of interest.

(b) Regulation 32 of the Tariff Regulations,2024 provides as under: -

i. The rate of interest on loan shall be the weighted average Rate of interest (ROI) calculated on the basis of actual loan portfolio after providing appropriate accounting adjustment for interest capitalized;
ii. The Interest on loan shall be calculated on the average normative loan of the year by applying aforesaid weighted average rate of interest

(c) The petitioner submits that it is liable to pay Interest at the Interest Rate applicable as per the Loan agreement.

(d) Depreciation amount for respective period/financial year has been considered as the annual repayment of normative loan for the year.

Based on the application of weighted average rate of interest as at the beginning of each year on the average normative Loans of the year during the Tariff Period, interest on Loan are in the respective Tariff attached as Annexure- II&III. Further, The loan agreement is attached as **Annexure- XVII(i) & XVII(ii)** .

47. Depreciation:

(a) The base value for the purpose of computation of Depreciation is the completed Project Capital cost of Rs. 1201.66 crores as on station COD.

(b) Depreciation on estimated cost of assets has been calculated based on straight line method over the useful life of the asset, at the rates prescribed under Appendix I-Schedule of depreciation of CERC (Terms & Conditions of Tariff) Regulations, 2019 & Appendix-II of CERC (Terms & Conditions of Tariff) Regulations, 2024.

(c) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset.

(d) The petitioner submits that based on capital value of assets, the weighted average depreciation works out to as per the asset class and asset capitalized for 2023-24 period for the three unit whose COD was 2019-24 period and depreciation work out as 4.23% from Station COD till 2024-29 and the same is considered for the purpose of computation of Annual Fixed Cost.

48. Interest on working Capital:

The interest on working capital has been worked out as per the norms prescribed in Regulation 34 (c) of the CERC Tariff Regulations, 2019 is applied for the three units which falls under Tariff Regulation 2019-24 and as per Regulation 34(d) of the CERC Regulation 2024 from Station COD .

The detail calculation is in the respective Tariff attached as **Annexure- II&III**.

49. O&M Expenses:

Regulation 35(2)(a) of CERC (Terms and Conditions of Tariff) Regulations, 2024 , in case of hydro generating stations declared under commercial operation on or after 01.04.2019, O&M expenses shall be fixed at 5% of the original project cost (excluding cost of rehabilitation & resettlement works, IDC & IEDC) for first year of commercial operation for stations more than 200 MW and shall be subject to annual escalation of 5.47% per annum for the subsequent years.

Hence, O&M expenses for the first year are considered @ 5% of the Completed project cost, with annual escalation of 5.47% per annum for the subsequent years.

Further vide Regulation 35(2)(c) of CERC (Terms and Conditions of Tariff) Regulations, 2024, the Security Expenses, Capital Spares and Insurance expenses arrived through competitive bidding shall be allowed separately after prudent check.

Insurance Expenses: The Actual Insurance Expenses for Rs. 37,961,946.00 for the period 01/08/2023 to 31/07/2024. The insurance Policy is attached as **Annexure- XVIII**

Capital spares: Shall be claimed as per Actual During the Truing-up Petition for 2024-29.

Security Expenses: Shall be claimed at actual during the Truing-up Petition.

The detail calculation is in the respective Tariff attached as **Annexure- II&III**.

50. Annual Fixed Charge:

Summary of the estimated Annual Fixed Cost for the financial years from 1st Unit (As on COD of Unit-IV) on 20.08.2023 to 2023-24 is as under: -

In lakh

S. No.	Particulars	20.08.2023-02.09.2023	03.09.2023-11.11.2023	12.11.2023-31.03.2024
1	2	3	4	5
1.1	Depreciation	103.37	583.57	1860.11
1.2	Interest on Loan	158.88	1008.91	3549.93

1.3	Return on Equity	119.96	767.14	2729.84
1.4	Interest on Working Capital	9.66	59.42	208.46
1.5	O & M Expenses	85.22	520.86	1875.88
	Annual Fixed Charges for the period	477.09	2939.91	10224.22

Summary of the estimated Annual Fixed Cost for the financial years from 2024-25 and Station COD to 2023-24 is as under: -

						Rs. In Lakhs
Particulars	**01.04.2024-02.06.2024**	**03.06.2024-31.03.2025**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
Depreciation	865.76	4808.07	5827.17	5827.17	5827.17	5827.17
Interest on Loan	1157.27	6217.69	7092.20	6604.62	6115.55	5624.40
Return on Equity	1264.59	6979.72	8459.27	8459.27	8459.27	8459.27
Interest on Working Capital	87.86	474.37	580.42	586.62	593.54	601.22
O & M Expenses	840.57	4449.12	5671.38	5981.61	6308.80	6653.89
Annual Fixed Charges	4216.06	22928.96	27630.44	27459.28	27304.33	27165.95

Miscellaneous Issues

It is submitted that the petitioner has deposited the requisite filing fee of Rs. 8,80,000.00 (Rupees eight lakh eighty thousand only) for the year 2023-24 in accordance with CERC (Payment of Fees) Regulations, 2012 and amendment thereof is paid vide Transaction Id/Reference no./Payment ID INB17213287639CHM3589277 dated 20.04.2023 for determination of tariff of the generating station till 31.03.2024.

Further, it is submitted that the petitioner has deposited the requisite filing fee of Rs. 8,80,000.00 (Rupees eight lakh eighty thousand only) for the year 2024-25 in accordance with CERC (Payment of Fees) Regulations, 2012 and amendment thereof is paid vide Transaction Id/Reference no./Payment ID INB17213287639CHM3589277 dated 20.04.2023 for determination of tariff of the generating station till 31.03.2025.

PRAYER

The present petition is submitted before the Hon'ble Commission for Truing-up of Kopili Hydro Power Station for the period 2019-24 and determination of Tariff of the Kopili Hydro Power Station after Reconstruction, Renovation & Modernization for life extension. In view of the facts and circumstances described above in detail, the Petitioner humbly prays to the Hon'ble Commission that it may be pleased to: -

i. Approve the Revised Annual Fixed Charges in respect of Kopili Hydro Power Station, after considering the impact of net capitalization done during FYs 2019-20 after Truing-up as per the details given in Annexure-I.

ii. Allow the recovery of the Actual Security expenses incurred for the period 2019-20 as per the auditor Certificate.

iii. Approve the Project capital Cost of Rs. 1201.66 crore (as approved by the Petitioner's Board of Directors on 10th August 2024 for determination of tariff (generating unit –wise as well as generating station as whole) plus Residual Cost of the Plant as Rs. 167.86 Crore for the 200 MW Kopili Hydro Power Station based on its COD.

iv. Condon the Delay for executing the Construction of the Project due to the reason beyond the Control of the Generating Station.

v. Approve the Tariff after Reconstruction, Renovation & Modernization of the Power Station from the Period 20.8.2023 to 31.03.2029.

vi. Allow recovery of filing fees of this petition from the beneficiaries.

vii. Allow recovery of publication expenses from the beneficiaries incurred with regard to this petition.

viii. Allow recovery of statutory dues like Deferred Tax Liability and other expenses as admissible as per the relevant Regulation.

ix. Allow recovery from the beneficiaries any such tax, cess etc. levied on NEEPCO in relation to generation and supply/distribution of electricity.

x. Allow modification/change in operational norms based on actual performance experienced by the generating station.

xi. Allow additions/alterations/changes/modifications to the petition at a future date.

xii. Condone any inadvertent omissions/errors/differences/shortcomings.

xiii. Pass such order/orders as deemed fit and proper in the facts and circumstances of the case.

NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED
THROUGH

E Pyrbot

(**Elizabeth Pyrbot**)
Dy. General Manager (E/M)

PART-II

TARIFF FILING FORMS (HYDRO)

Checklist of Forms and other information/ documents for tariff filing for Hydro Stations

Form No.	Title of Tariff Filing Forms (Hydro)	Tick
FORM-1	Summary Sheet	√
FORM -1 (I)	Statement showing claimed capital cost	√
FORM -1 (II)	Statement showing Return on Equity	√
FORM-2	Details of COD, Type of hydro station, Normative Annual Plant Availability Factor(NAPAF) & other normative parameters considered for tariff calculation	√
FORM-3	Salient features of Hydroelectric Project	
FORM-4	Details of Foreign loans	
FORM-4 A	Details of Foreign Equity	
FORM-5	Abstract of Admitted Capital Cost for the existing Projects	√
FORM-5A	Abstract of Capital Cost Estimates and Schedule of Commissioning for the New projects	√
FORM-5B	Break-up of Capital Cost for Hydro Power Generating Station	√
FORM-5C	Break-up of Capital Cost for Plant and Equipment	√
FORM-5D	Break-up of Construction/Supply/Service packages	√
FORM-5E i	In case there is cost over run	√
FORM-5E ii	In case there is time over run	√
FORM-5F	In case there is claim of additional ROE	√
FORM-6	Financial Package upto COD	√
FORM-7	Details of Project Specific Loans	√
FORM-8	Details of Allocation of corporate loans to various projects	√
FORM-9A	Statement of Additional Capitalisation after COD	
FORM- 9B	Statement of Additional Capitalisation during end of the Project	√
FORM- 9B i	Details of Asset decapitalised during the period	
FORM- 9C	Statement showing reconciliation of ACE claimed with the capital addition as per Books	√
FORM- 9D	Statement showing items/assets/works claimed under Exclusions	
FORM- 9E	Statement of Capital Cost	√
FORM- 9F	Statement of Capital Works in Progress	√
FORM-10	Financing of Additional Capitalisation	√

Form No.	Title of Tariff Filing Forms (Hydro)	Tick
FORM- 11	Calculation of Depreciation on original project cost	√
FORM- 12	Statement of Depreciation	√
FORM- 13	Calculation of Weighted Average Rate of Interest on Actual Loans	√
FORM-13A	Calculation of Interest on Normative Loan	√
FORM- 13 B	Calculation of Interest on Working Capital	√
FORM- 13 C	Non-Tariff Income	
FORM- 13 D	Incidental Expenditure during Construction	√
FORM- 14	Draw Down Schedule for Calculation of IDC & Financing Charges	√
FORM- 14A	Actual cash expenditure	√
FORM-15 A	Design Energy and Peaking Capability (month-wise) – ROR with pondage /storage type New Station	√
FORM-15 B	Design Energy and MW Continuous (month-wise) - ROR type Station	N. A.
FORM- 16	Liability Flow Statement	√
Other Information/ Documents		

Sl. No.	Information/Document	Tick
1	Certificate of incorporation, Certificate for Commencement of Business, Memorandum of Association, & Articles of Association (For New Station setup by a company making tariff application for the first time to CERC)	N.A.
2	A. Station-wise and Corporate audited Balance Sheet and Profit & Loss Accounts with all the Schedules & annexures on COD of the Station for the new station & for the relevant years. B. Station wise and Corporate audited Balance Sheet and Profit & Loss Accounts with all the Schedules & annexures for the existing station for the relevant years.	N.A.
3	Copies of relevant loan Agreements	√
4	Copies of the approval of Competent Authority for the Capital Cost and Financial package.	√
	Copies of the Equity participation agreements and necessary approval for the foreign equity.	NA
6	Copies of the BPSA/PPA with the beneficiaries, if any	√
7	Detailed note giving reasons of time and cost overrun, if applicable. List of supporting documents to be submitted: a. Detailed Project Report b. CPM Analysis c. PERT Chart and Bar Chart d. Justification for cost and time Overrun	√
8	Generating Company shall submit copy of Cost Audit Report along with cost accounting records, cost details, statements, schedules etc. for the Generating Unit wise /stage wise/Station wise/ and subsequently consolidated at Company level as submitted to the Govt. of India for first two years i.e. 2019-20 and 2020-21 at the time of mid-term true-up in 2012-22 and for balance period of tariff period 2019-24 at the time of final trueup in 2023-24.In case of initial tariff filing, the latest available Cost Audit Report should be furnished.	√
9	Any other relevant information, (Please specify)	NA
10	Reconciliation with Balance sheet of any actual additional capitalization and amongst stages of a generating station	NA
Note: Electronic copy of the petition (in words format) and detailed calculation as per these formats (in excel format) and any other information submitted shall also be furnished in the form of CD/Floppy disc.		

PART-II
FORM- 1

Summary Sheet

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.

Name of the Generating Station : Kopili Hydro Electric Power Plant (4 X50 MW)

Region - North Eastern Region, State: Assam, District: Dima Hasao.

COD: 12.07.1997

Rs. In Lakhs

S. No.	Particulars	2018-19	2019-20 (01.04.2019 to 07.10.2019)
1	2		4
1.1	Depreciation	886.86	523.26
1.2	Interest on Loan	192.15	121.54
1.3	Return on Equity	3099.56	1576.69
1.4	Interest on Working Capital	534.39	353.62
1.5	O & M Expenses	7,932.30	4695.22
1.6	Security Expenses	0.00	459.54
Annual Fixed Charges for the period		**12645.26**	**7729.87**
AFC (Annualized)		**12645.26**	**14890.17**

Note:

1 Details of calculations, considering equity as per regulation, to be furnished.

(Petitioner)

Annex-I

PART-II
FORM- 1(I)

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : Kopili Hydro Electric Power Plant (4 X50 MW)

Statement showing claimed capital cost-(A+B)

Rs. In Lakh

S. No.	Particulars	2019-20				
(1)	(2)	(3)				
1	Opening Capital Cost	35100.29				
2	Add: Addition during the year/period	197.41				
3	Less: Decapitalisation during the year/period	0.00				
4	Less: Reversal during the year/period	0.00				
5	Add: Discharges during the year/period	0.00				
6	Closing Capital Cost	35297.70				
7	Average Capital Cost	35199.00				

Statement showing claimed capital cost eligible for R.o.E at normal rate (A)

Rs. In Lakh

S. No.	Particulars	2019-20				
(1)	(2)	(3)				
1	Opening Capital Cost	35100.29				
2	Add: Addition during the year/period	0.00				
3	Less: Decapitalisation during the year/period	0.00				
4	Less: Reversal during the year/period	0.00				
5	Add: Discharges during the year/period	0.00				
6	Closing Capital Cost	35100.29				
7	Average Capital Cost	35100.29				

Statement showing claimed capital cost eligible for R.o.E at weighted average rate of interest on actual loan portfolio (B)

Rs. In Lakh

S. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Opening Capital Cost	0.00				
2	Add: Addition during the year/period	197.41				
3	Less: Decapitalisation during the year/period	0.00				
4	Less: Reversal during the year/period	0.00				
5	Add: Discharges during the year/period	0.00				
6	Closing Capital Cost	197.41				
7	Average Capital Cost	98.71				

(Petitioner)

PART-II
FORM- 1(II)

Statement Showing Return on Equity at Normal Rate

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : Kopili Hydro Electric Power Plant (4X50 MW)
COD 12.07.1997

Statement showing Return on Equity at Normal Rate

Rs.in Lakh

S. No.	Particulars	2018-19	2019-20 (01.04.2019 to 07.10.2019)	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Gross Opening Equity (Normal)	14295.29	15179.38				
2	Less : Adjustment in Equity	0	0.00				
3	Adjustment during the year	0	0.00				
4	Net Opening Equity (Normal)	14295.29	15179.38				
5	Add : Increase due to addition during the year / period	983.61	0.00				
6	Less : Decrease due to de-capitalisation during the year / period	99.52	0.00				
7	Less : Decrease due to reversal during the year / period	0	0.00				
8	Add : Increase due to discharges during the year / period	0	0.00				
9	Net closing Equity (Normal)	15179.38	15179.38				
10	Average Equity (Normal)	14737.33	15179.38				
11	Base rate for ROE (%)	16.50	16.50				
12	Effective Tax rate (%)	21.5488	17.472				
13	Effective REO rate (%)	21.032%	19.992%				
14	**Total ROE for the period**	**3099.58**	**1575.47**	**0.00**	**0.00**	**0.00**	**0.00**
15	Total ROE (Annualized)	3099.58	3094.85				

(Petitioner)

Statement showing Return on Equity at Weighted Average Rate of Interest on Actual Loan Portfolio

Rs.in Lakh

S. No.	Particulars		2019-20	2020-21	2021-22	2022-23	2023-24
1	2		3	4	5	6	7
1	Gross Opening Equity [pertaining to Proviso to Regulation 30(2)]		0.00				
2	Less : Adjustment in Equity		0.00				
3	Adjustment during the year		0.00				
4	Net Opening Equity		0.00				
5	Add : Increase in equity due to addition during the year / period		59.22				
6	Less : Decrease due to de-capitalisation during the year / period		0.00				
7	Less : Decrease due to reversal during the year / period		0.00				
8	Add : Increase due to discharges during the year / period		0.00				
9	Net closing Equity [pertaining to Proviso to Regulation 30(2)]		59.22				
10	Average Equity [pertaining to Proviso to Regulation 30(2)]		29.61				
11	Rate of ROE (weighted average rate of interest on actualloan portfolio)		7.940%				
12	**Total ROE for the Period**	**0**	1.22	0.000	0.000	0.000	0.000
	Total ROE (Annualized)		2.35				

Note:
1. Adjustment of equity as perProviso to Regulation 18(3) of 2019 Tariff Regulations.
2. With respect to Equity infusion, the Generating Company is required to substantiate with supporting documents such as boards resolution, balance sheet/ reconciliation statement with balance sheet.

(Petitioner)

PART-II
FORM-2

Details of COD, Type of Hydro station, Normative Annual Plant Availability Factor (NAPAF) & Other normative parameters considered for tariff calculation

Name of the Petitioner : **NORTH EASTERN ELECTRIC POWER CORPORATION LTD.**

	Particulars	Unit	Existing 2018-19	2019-20
	(1)	(2)	(3)	(4)
1	Installed Capacity	MW	200 (4x50 MW)	200 (4x50 MW)
2	Free power to home state	%	12%	12%
3	Free power under Local Area development Fund (LADF)			
4	Date of commercial operation (actual/anticipated)			The plant was under total shutdown due to mishap occurred on 07.10.2019 and after necessary reconstruction, renovation and modernisation, the same plant was commissioned during the FY 2023-24 and 2024-25 with station COD as on 03.06.2024
5	Type of Station			
	a) Surface / underground		Surface	Surface
	b) Purely ROR / Pondage / Storage		Storage	Storage
	c) Peaking / non-peaking		Peaking	Peaking
	d) No. of hours of peaking		3	3
	e) Overload capacity (MW) & period		Rated = 4 x 55.5 MW	Rated = 4 x 55.5 MW
6	Type of excitation			
	a) Rotating exciters on generator			
	b) Static excitation		Static	Static
7	Design Energy (Annual) [1]	GWh	1186.14	
8	Auxiliary Consumption including Transformation losses	%	1	1.00
9	Normative Plant Availability Factor (NAPAF)	%	69	69
9.1	Maintenance Spares for WC	% of O&M		
9.2	Receivables for WC	in Months		
9.3	Base Rate of Return on Equity	%		
9.4	Base Rate of Return on Equity on Add. Capitalization			
9.5	Tax Rate [2]	%		
9.6	Effective Tax Rate [4]			
9.7	SBI Base Rate + 350 basis points as on [3]	%		

1. Month wise 10 - day Design energy figures to be given separately with the petition.
2. Tax rate applicable to the company for the year FY 2018 - 19 should also be furnished.
3. Mention relevant date
4. Effective tax rate is to be computed in accordance with Regulation 31 i.e. actual tax (or advance tax)/ gross income, where gross income refers the profit before tax.

(Petitioner)

PART-II
FORM-3

Salient Features of Hydroelectric Project

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station :

1. Location	
State / Distt.	Assam/Dima Hasao
River	Kopili
2. Diversion Tunnel	
Size, shape	NIL
Length (M)	
3. Dam	
Type	Concrete Gravity
Maximum dam height (M)	36.00 Mtrs
4. Spillway	
Type	OGEE
Crest level of spillway (M)	El. 602.00 Mtrs
5. Reservoir	
Full Reservoir Level (FRL) (M)	El. 609.6 Mtrs
Minimum Draw Down Level (MDDL) (M)	El. 592.99 Mtrs
Live storage (MCM)	110.5
6. De - silting Chamber	
Type	NA
Number and Size	
Particle size to be removed (mm)	
7. Head Race Tunnel	
Size and type	Dia: 4.6 Mtr, Circular
Length (M)	5500.67 Mtr
Design discharge (Cumecs)	70
8. Surge Shaft	
Type	Simple
Diameter (M)	Dia: Riser 10.00 Mtr & Expansion Chamber 20.00 Mtr
Height (M)	103 mtr
9. Penstock / Pressure shafts	
Type	Circular (Steel Lined)
Diameter & Length (M)	Dia: 2.75 Mtr and length 680 Mtr
10. Power House	
Installed capacity (No of units X MW)	4 X 50 MW
Type of turbine	Francis (Vertical Shaft)
Rated Head (M)	331.60 Mtr
Rated Discharge (Cumecs)	17.3
Head at Full Reservoir Level (M)	331.6
Head at Minimum Draw down Level (M)	309.2
MW Capability at FRL	200
MW Capability at MDDL	120
11. Tail Race Tunnel / Channel	
Diameter (M), shape	NA
Length (M)	
Minimum tail water level (M)	
12. Switchyard	
Type of Switch gear	Outdoor
No. of generator bays	4
No. of Bus coupler bays	1
No. of line bays	8
Efficiency (overall) Turbine and generator	98.4

Note : Specify limitation on generation during specific time period (s) on account of restrictions on water use due to irrigation, drinking water, industrial, environmental considerations etc.

(Petitioner)

PART - II
FORM - 5

Abstract of Admitted Capital Cost for the existing Projects

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.

Name of the Generating Station : KOPILI GENERATING UNIT

Rs. In Lakhs

	Capital Cost as admitted by CERC	
a)	Capital Cost admitted as on 01.04.2019	35100.29
	(Give reference of the relevant CERC Order with Petition No. & Date)	CERC's Order dated 31.03.2023, Petition No.398/GT/2020
b)	Foreign Component, if any (In Million US $ or the relevant Currency)	0.00
c)	Foreign Exchange rate considered for the admitted Capital cost (Rs Lakh)	0.00
d)	Total Foreign Component (Rs. Lakh)	0.00
e)	Domestic Component (Rs. lakh)	35100.29
f)	Hedging cost, if any, considered for the admitted Capital cost (Rs Lakh)	0.00
	Total Capital cost admitted (Rs. Lakh) (d+e+f)	35100.29

(Petitioner)

Abstract of Capital Cost Estimates and Schedule of Commissioning for the New Projects

PART-II
FORM- 5A

Name of the Petitioner NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station **Kopili Hydro Power Station (4x50 MW)**

New Projects

Capital Cost Estimates

Board of Director/ Agency approving the Capital cost estimates:	Ministry of Power(MoP),Govt of India			
Date of approval of the Capital cost estimates:				
	Present Day Cost	**Completed Cost**		
APPL	NOT APPLICABLE			
Foreign Exchange rate considered for the Capital cost estimates				
Foreign Component, if any (In Million US $ or the relevant Currency)	NOT APPLICABLE			
Domestic Component (Rs. Lakh)				
Capital cost excluding IDC, IEDC, FC, FERV & Hedging Cost (Rs. Lakh)				
IDC, IEDC, FC, FERV & Hedging Cost				
Foreign Component, if any (in Million US $ or the relevant Currency)	NOT APPLICABLE			
Domestic Component (Rs. Lakh)				
Total IDC, IEDC, FC, FERV & Hedging Cost (Rs. Lakh				
Rate of taxes & duties considered				
Capital cost Including IDC, IEDC, FC, FERV & Hedging Cost				
Foreign Component, if any (In Million US $ or the relevant Currency)	NOT APPLICABLE			
Domestic Component (Rs. Lakh)				
Capital cost Including IDC, IEDC& FC (Rs. Lakh)	NOT APPLICABLE			
Schedule of Commissioning as per investment approval				

Note:

1. Copy of approval letter should be enclosed
2. Details of Capital Cost are to be furnished as per FORM-5B or 5C as applicable
3. Details of IDC & Financing Charges are to be furnished as per FORM-14.

(Petitioner)

PART-II
FORM- 9A

Year wise Statement of Additional Capitalisation after COD

2019-24

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.

Name of the Generating Station : Kopili Hydro Electric Power Plant (4 X50 MW)

COD

For Fisandial Year 2019-20 to 2023-2024

Sl. No.	Head of Work/Equipment	ACE Claimed (Actual/Projected)			IDC included in col.3	Regulation under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis (Rs in lakh)	Un-discharged Liability included in col.3 (Rs in lakh)	Cash basis				
1	2	3	4	[5=3-4]	6	7	8	9
			FY 2019-2020					
1	Reservoir & Dam : Installation, testing Commissioning of Dam Safety Monitoring System	1726438| 2537000	0.00	17,204,381.00 2,537,000.00	0.00	30.(1)(d)	Dam failure can cause catastrophic damage to life and property. A good instrumentation program makes use of the data to evaluate the safety of the structure by collecting data and detecting any issues at a preventable stage.Thus, for monitoring and control of dam criticality to ensure its safety, stability, and performance etc., the Petitioner has awarded the work contract to the Contractor M/s Elcome Technologies Pvt Ltd., Mumbai, vide W.O. No. NEEPCO/O/P/C&P/F/E/e-tender Dam/2021/Vol-III/1553 Dated 24.01.2018 for supply, installation & commissioning of Dam Safety Monitoring System of the Dam. The work has been done in accordance with the Guidelines for safety inspection of Dam issued by CWC on January 2018.	
			0.00		0.00			
	Total		0.00	19,741,381.00 197.41 Lakh				

PART-II

FORM-9C

Statement Showing reconcialiation of ACE claimed with the Capital additions as per books

Name of the Petitioner North Eastern Electric Power Corporation Ltd
Name of the Generating Station : Kopili Hydro Electric Power Plant (4 X50 MW)
COD 12.07.1997

Sl No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1	Closing Gross Block as per IND AS	35297.70	The plant was under total shutdown due to mishap occurred on 07.10.2019 and after necessary reconstruction, renovation and modernisation, the same plant was commissioned during the FY 2023-24 and 2024-25			0.00
2	Add/Less: Adjustments	0.00				0.00
3	Closing Gross Block as per IGAAP					
4	Opening Gross Block as per IND AS	35100.29				0.00
5	Add/Less: Adjustments					
6	Opening Gross Block as per IGAAP					
7	Total Additions as per books (1-2-4=7)	197.41				0.00
8	Less: Additions pertaining to other Stages (give Stage wise breakup)	0.00				0.00
9	Net Additions pertaining to instant project/Unit/Stage	197.41				0.00
10	Less: Exclusions (items not allowable / not claimed)	0.00				0.00
11	Net Additional Capital Expenditure Claimed (on accrual basis)	197.41				0.00
12	Less: Undischarged Liabilities	0.00				0.00
13	Add:Discharge of undischarged liabilities corresponding to admitted assests/works	0.00				0.00
14	Net Additional Capital Expenditure Claimed (on cash basis)	197.41				0.00

Note: Reason for exclusion of any expenditure shall be given in clear terms.

(Petitioner)

Form-7

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

[Amount in Rs. Lakh]

Statement of Capital cost

(To be submitted for relevant dates and year wise)

S. No.	Particulars	2019-20			2020-21			2021-22			2022-23			2023-24		
		Accrual Basis	Un-discharged	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis
(1)	(2)															
A	a) Opening Gross Block Amount as per books															
	b) Amount of IDC in A(a) above															
	c) Amount of FC in A(a) above															
	d) Amount of FERV in A(a) above															
	e) Amount of Hedging Cost in A(a) above															
	f) Amount of IEDC in A(a) above															
B	a) Addition in Gross Block Amount during the period (Direct purchases)															
	b) Amount of IDC in B(a) above															
	c) Amount of FC in B(a) above															
	d) Amount of FERV in B(a) above															
	e) Amount of Hedging Cost in B(a) above															
	f) Amount of IEDC in B(a) above															
C	a) Addition in Gross Block Amount during the period (Transferred from CWIP)															
	b) Amount of IDC in C(a) above															
	d) Amount of FC in C(a) above															
	e) Amount of FERV in C(a) above															
	f) Amount of Hedging Cost in C(a) above															
	g) Amount of IEDC in C(a) above															
D	a) Deletion in Gross Block Amount during the period															
	c) Amount of IDC in D(a) above															
	d) Amount of FC in D(a) above															
	e) Amount of FERV in D(a) above															
	f) Amount of Hedging Cost in D(a) above															
	g) Amount of IEDC in D(a) above															
E	a) Closing Gross Block Amount as per books															
	c) Amount of IDC in E(a) above															
	d) Amount of FC in E(a) above															
	e) Amount of FERV in E(a) above															
	f) Amount of Hedging Cost in E(a) above															
	g) Amount of IEDC in E(a) above															

NOT APPLICABLE

[Petitioner]

PART-II
FORM-9F

Statement of Capital works in Progress

(To be given for relevant dates and year wise)

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

(Amount in Rs. Lakh)

Sl. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
A	a) Opening CWIP as per books	NOT APPLICABLE				
	b) Amount of IDC in A(a) above					
	c) Amount of FC in A(a) above					
	d) Amount of FERV in A(a) above					
	e) Amount of Hedging Cost in A(a) above					
	f) Amount of IEDC in A(a) above					
B	a) Addition in CWIP during the period					
	b) Amount of IDC in B(a) above					
	c) Amount of FC in B(a) above					
	d) Amount of FERV in B(a) above					
	e) Amount of Hedging Cost in B(a) above					
	f) Amount of IEDC in B(a) above					
C	a) Transferred to Gross Block Amount during the period					
	b) Amount of IDC in C(a) above					
	c) Amount of FC in C(a) above					
	d) Amount of FERV in C(a) above					
	e) Amount of Hedging Cost in C(a) above					
	f) Amount of IEDC in C(a) above					
D	a) Deletion in CWIP during the period					
	b) Amount of IDC in D(a) above					
	c) Amount of FC in D(a) above					
	d) Amount of FERV in D(a) above					
	e) Amount of Hedging Cost in D(a) above					
	f) Amount of IEDC in D(a) above					
E	a) Closing CWIP as per books					
	b) Amount of IDC in E(a) above					
	c) Amount of FC in E(a) above					
	d) Amount of FERV in E(a) above					
	e) Amount of Hedging Cost in E(a) above					
	f) Amount of IEDC in E(a) above					

Note:
1.Relevant date/s means date of COD of unit/s/station and financial year start date and end date

[Petitioner]

PART-II
FORM-12

Statement of Depreciation

Name of the Company : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : Kopili Hydro Electric Power Plant (4X50 MW)
COD 12.07.1997.

Calculation of Depreciation for 2019-24

Rs. in Lakhs

Particulars	2018-19	2019-20 (01.04.2019 to 07.10.2019)	2020-21	2021-22	2022-23	2023-24
Capital Cost Opening (a)	32020.62	35100.29	The plant was under total shutdown due to mishap occurred on 07.10.2019 and was under reconstruction, renovation and modernisation.			
Capital Cost Closing (b)	35100.29	35297.70				
Average Capital Cost (c) = (a+b)/2	33560.46	35199.00				
Land Value (d)	1440.07	1440.07				
Depreciable value (d) = (c - d)*90%	28908.35	30383.03				
Rate of depreciation	N. A.	N.A.				
Balance useful life	14.28	13.28				
Remaining Depreciable Value	12664.91	13386.38				
Cumulative Depreciation upto previous year	16243.44	16996.65				
Depreciation (for the period)	886.86	523.26				
Depreciation (Annualized)	886.86	1007.97				
Cumulative Depreciation at the end of the period	17130.30	17519.91				
Less: Cumulative depreciation adjustment on account of undischarged liabilities deduced as on 01.4.2009/COD	0.00	0.00				
Less: Cumulative depreciation adjustment on account of decapitalization	133.65	0.00				
Net Cumulative Depreciation at the end of the period	16996.65	17519.91				0.00

Petitioner

PART-II
FORM-13A

Calculation of Interest on Normative Loan

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : Kopili Hydro Electric Power Plant (4 x 50 MW)
COD 12.07.1997.

Rs. In Lakhs

Particulars	Existing 2018-19	2019-20 (01.04.2019 to 07.10.2019)	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gross Normative loan - Opening	17725.34	19,920.91				
Cumulative repayments of Normative loan upto previous year	16026.55	16,779.76				
Net Normative loan - Opening	1698.79	3141.15				
Add: Increase due to addition during the year /period	2295.09	138.19				
Less: Decrease due to decapitalisation during the year/period	99.52	0.00				
Less: Decrease due to reversal during the year/period	0.00	0.00	The plant was under total shutdown due to mishap occurred on 07.10.2019 and was under reconstruction, renovation and modernisation.			
Add: Increase due to discharges during the year/period	0.00	0.00				
Net addition during the year	2195.58	138.19				
Repayment (s) of Normative Loan during the year	888.86	523.26				
Cumulative repayment adjustment on a/c of decapitalization	133.65	0.00				
Net Repayment of loan during the period	753.21	523.26				
Net Normative loan - Closing	3141.15	2756.08				
Average Normative loan	2419.97	2948.61				
Weighted average rate of interest	7.9400%	7.9400%				
Interest on Loan for the period	192.16	121.54				
Interest on Loan (Annualized)	192.16	234.12				

Addition during 2018-19	3278.70
Decapitalization during 2018-19	199.03
Reversal during 2018-19	0.00
Net Additional Capital Expenditure during 2018-19	3079.67
Liabilities discharged during 2018-19	0.00
Gross Block as on 31.3.19	35100.29
Equity	15179.38
Loan	19920.91
Total	35100.29

	Equity	Loan
Add cap	963.61	2295.09
Decap	99.52	99.52
Net	864.10	2195.58

Addition during 2019-20	197.41
Decapitalization during 2019-20	
Reversal during 2019-20	0.00
Net Additional Capital Expenditure during 2019-20	197.41
Liabilities discharged during 2019-20	0.00
Gross Block as on 31.3.20	35297.70
Equity	15238.60
Loan	20059.10
Total	35297.70

	Equity	Loan
Add cap	59.22	138.19
Decap	0.00	0.00
Net	59.22	138.19

PART-II
FORM-13B

Calculation of Interest on Working Capital

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : Kopili Hydro Electric Power Plant (4 X 50 MW)
COD 12.07.1997.

Rs. In Lakhs

Sl. No.	Particulars	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Maintenance Spares	1189.85	773.21	The plant was under total shutdown due to mishap occurred on 07.10.2019 and was under reconstruction, renovation and modernisation.			
2	Receivables	2107.54	1731.81				
3	O & M Expenses	661.03	429.56				
4	Total Working Capital	3958.41	2934.59				
5	Rate of Interest	13.500%	12.050%				
6	**Interest on Working Capital**	**534.39**	**353.62**				

Security Expenses during 2019-24 KHEP						
YEAR		2019-20	2020-21	2021-22	2022-23	2023-24
Security Expenses KHEP		802.02				

Note: Security Expenses will be claimed at actual at the time of Truing up.

PETITIONER

PART-II
FORM-13C

Non-Tariff Income

Name of the Hydro Asset: KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

S.No.	Parameters	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)		(6)	
1.	Income from rent of land or buildings		NOT APPLICABLE				
2.	Income from sale of scrap						
3.	Income from advertisements						

Note: To be submitted at the time of truing up

(Petitioner)

PART-II

FORM-13D

Incidental Expenditure during Construction

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDRO ELECTRIC PLANT

Sl. No.	Parameters	Upto Schedule COD	Up to actual COD(03.06.2024)
A	Expenses:		
1	Employees' Benefits Expenses		10,159.31
2	Finance Costs & IDC		8,045.55
3	Water Charges		0.00
4	Communication Expenses		0.00
5	Power Charges		349.27
6	Other Office and Administrative Expenses		3,711.71
7	Others (see below)		7,249.92
8	Other Pre-Operating Expenses		0.00
	Total Expenses		**29515.76**
1	Less: Other income		176.78
2	Less: Income from sale of tenders		0.00
3	Less: Income from guest house etc		90.98
4	Less: Income recovered from Contractors		0.00
5	Less: Interest on Deposits		0.76
6	Less Infirm Power		458.1
7	total Income		726.62
	Net IEDC (Including IDC)		**28789.14**

PETITIONER

OTHER EXPENSES CAPITALISED	Amount
Roads & buildings	1,156.43
Power house	4,140.93
Others	463.57
Depreciation	156.19
Corporate Office/Regional Office Expenses	1,332.79
	7,249.92

Statement of Liability Flow

PART-II

FORM-16

Name of the Petitioner : **NORTH EASTERN ELECTRIC POWER CORPORATION LTD.**
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 M

Amount in ₹ lakh

Party	Asset / Work	Original Liability	Reversal yearwise
1	2	3	6
a) For assets eligible for normal RoE	NOT APPLICABLE		

(Petitioner)

FORM 17

Operation & Maintenance Expenses

Incase of Hydro generating station declared under commercial operation on or after 01.04.2019

	2019-20	2020-21	2021-22	2022-23	2023-24
Total capital expenditure upto cutoff date (a)	CONSIDERD AS PER CERC TARIFF REGULATIONS, 2019				
R&R expenditure (b)					
IDC & IEDC (C)					
Capital Cost considered for O&M expense (d)=(a)-(b)-(c)					
First year annualize O&M expense @ 5% of above (e)=5% of (d)					
O&M expense for the period					
O&M expense for next year @ 5.47% of above (f) =5.47% of (e)					
Additional O&M expenses due to 7th Pay Commission Wage Revision					
Additional O&M expenses due to Minimum Wage Revision					
Additional O&M expenses due to Goods & Service Tax (GST)					

Note:Additional O&M expenses with supporting documents and computations to be provided for respective year of Tariff Period.

(Petitioner)

PART-II
FORM- 1

Summary of Tariff

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)
Region - North Eastern Region, State: Assam, District: Dima Hasao
COD 03.06.2024

Rs. In Lakhs

S. No.	Particulars	20.08.2023-02.09.2023	03.09.2023-11.11.2023	12.11.2023-31.03.2024
1	2	3	4	5
1.1	Depreciation	103.37	583.57	1860.11
1.2	Interest on Loan	158.88	1008.91	3549.93
1.3	Return on Equity	119.96	767.14	2729.84
1.4	Interest on Working Capital	9.66	59.42	208.46
1.5	O & M Expenses	85.22	520.86	1875.88
	Annual Fixed Charges for the period	477.09	2939.91	10224.22

Note: Details of calculations, considering equity as per regulation, to be furnished.

(Petitioner)

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Annex-II

Statement Showing Claimed Capital Cost (A+B)

PART-II
FORM- 1(I)

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Rs. in Lakh

S. No.	Particulars	From 20.08.2023 to 02.09.2023	From 03.09.2023 to 11.11.2023	From 12.11.2023 to 31.03.2024
(1)	(2)	(3)	(4)	(5)
1	Opening Capital Cost	54199.55	67409.01	117950.96
2	Add: Addition during the year/period	37.15	2.26	828.37
3	Less: Decapitalisation during the year/period	0.00	0.00	0.00
4	Less: Reversal/undischarge during the year/period	3969.36	2520.94	1557.94
5	Add: Discharges during the year/period	101.85	1448.42	1106.73
6	Closing Capital Cost	50369.19	66338.74	118328.11
7	Average Capital Cost	52284.37	66873.88	118139.53

Statement showing claimed capital cost eligible for R.o.E at normal rate (A)

Rs. in Lakh

S. No.	Particulars	From 20.08.2023 to 02.09.2023	From 03.09.2023 to 11.11.2023	From 12.11.2023 to 31.03.2024
(1)	(2)	(3)	(4)	(5)
1	Opening Capital Cost	54199.55	67409.01	117950.96
2	Add: Addition during the year/period	37.15	2.26	828.37
3	Less: Decapitalisation during the year/period	0.00	0.00	0.00
4	Less: Reversal\undischarge during the year/period	3969.36	2520.94	1557.94
5	Add: Discharges during the year/period	101.85	1448.42	1106.73
6	Closing Capital Cost	50369.19	66338.74	118328.11
7	Average Capital Cost	52284.37	66873.88	118139.53

Statement showing claimed capital cost eligible for R.o.E at weighted average rate of interest on actual loan portfolio (B)

Rs. in Lakh

S. No.	Particulars	From 20.08.2023 to 02.09.2023	From 03.09.2023 to 11.11.2023	From 12.11.2023 to 31.03.2024
(1)	(2)	(3)	(4)	(5)
1	Opening Capital Cost	NIL		
2	Add: Addition during the year/period			
3	Less: Decapitalisation during the year/period			
4	Less: Reversal during the year/period			
5	Add: Discharges during the year/period			
6	Closing Capital Cost			
7	Average Capital Cost			

(Petitioner)

Statement Showing Return on Equity at Normal Rate

PART-II
FORM- 1(II)

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)
COD 03.06.2024

Statement showing Return on Equity at Normal Rate

Rs.in Lakh

S. No.	Particulars	20.08.2023-02.09.2023	03.09.2023-11.11.2023	12.11.2023-31.03.2024
1	2	3	4	5
1	Gross Opening Equity (Normal)	16259.87	20222.70	35385.29
2	Less : Adjustment in Equity	0.00	0.00	0.00
3	Adjustment during the year	0.00	0.00	0.00
4	Net Opening Equity (Normal)	16259.87	20222.70	35385.29
5	Add : Increase due to addition during the year / period	11.15	0.68	248.51
6	Less : Decrease due to de-capitalisation during the year / period	0.00	0.00	0.00
7	Less : Decrease due to undischagre/ reversal during the year / period	1190.81	756.26	497.38
8	Add : Increase due to discharges during the year / period	30.55	434.53	332.02
9	Net closing Equity (Normal)	15110.78	19901.62	35468.43
10	Average Equity (Normal)	15685.31	20062.16	35441.86
11	Rate of ROE	19.993%	19.993%	19.993%
12	**Total ROE annualised**	**3136.00**	**4011.07**	**7085.97**
	Total ROE for the period	**119.96**	**767.14**	**2729.84**
	No. of days during the period	14	70	141

Statement showing Return on Equity at Weighted Average Rate of Interest on Actual Loan Portfolio

Rs.in Lakh

S. No.	Particulars	20.08.2023-02.09.2023	03.09.2023-11.11.2023	12.11.2023-31.03.2024
1	2	3	4	5
1	Gross Opening Equity [pertaining to Proviso to Regulation 30(2)]	NIL		
2	Less : Adjustment in Equity			
3	Adjustment during the year			
4	Net Opening Equity			
5	Add : Increase in equity due to addition during the year / period			
6	Less : Decrease due to de-capitalisation during the year / period			
7	Less : Decrease due to undischagre/ reversal during the year / period			
8	Add : Increase due to discharges during the year / period			
9	Net closing Equity [pertaining to Proviso to Regulation 30(2)]			
10	Average Equity [pertaining to Proviso to Regulation 30(2)]			
11	Rate of ROE (weighted average rate of interest on actualloan portfolio)			
12	Total ROE			
13	Total ROE FOR THE PERIOD			

Note:
1. Adjustment of equity as perProviso to Regulation 18(3) of 2019 Tariff Regulations.
2. With respect to Equity Infusion, the Generating Company is required to substantiate with supporting documents such as boards resolution, balance sheet reconciliation statement with balance sheet.

(Petitioner)

PART-II
FORM-2

Details of COD, Type of Hydro station, Normative Annual Plant Availability Factor (NAPAF) & Other normative parameters considered for tariff calculation

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

	Particulars	Unit	Existing 2018-19	20.08.2023-02.09.2023	03.09.2023-11.11.2023	12.11.2023-31.03.2024
	(1)	(2)	(3)	(4)	(5)	(6)
1	Installed Capacity	MW	200 (4x50 MW)	200 (4x50 MW)		
2	Free power to home state	%	12%	12%		
3	Free power under Local Area development Fund (LADF)					
4	Date of commercial operation (actual/anticipated)					
	Unit - 1		05-07-1988 After RRM on 03/06/2024	Reconstruction, Renovation and Modernisation works,COD on 03/06/24		
	Unit - 2		22-06-1988 After RRM on 12/11/23	After Reconstruction, Renovation and Modernisation,COD on 12/11/23		
	Unit - 3		01-05-1997 After RRM on 03/09/23	After Reconstruction, Renovation and Modernisation,COD on 03/09/23		
	Unit - 4		12-07-1997 After RRM on 20/08/23	After Reconstruction, Renovation and Modernisation,COD on 20/08/23		
5	Type of Station					
	a) Surface / underground		Surface	Surface		
	b) Purely ROR / Pondage / Storage		Storage	Storage		
	c) Peaking / non-peaking		Peaking	Peaking		
	d) No. of hours of peaking		3	3		
	e) Overload capacity (MW) & period		Rated = 4 x 55.5 MW	Rated = 4 x 55.5 MW		
6	Type of excitation					
	a) Rotating exciters on generator					
	b) Static excitation		Static	Static		
7	Design Energy (Annual) [1]	GWh	1186.14		993.8	
8	Auxiliary Consumption including Transformation losses	%	1	1.00		
9	Normative Plant Availability Factor (NAPAF)	%	69		69	
9.1	Maintenance Spares for WC	% of O&M				
9.2	Receivables for WC	in Months				
9.3	Base Rate of Return on Equity	%		16.5	16.5	16.5
9.4	Base Rate of Return on Equity on Add. Capitalization					
9.5	Tax Rate [2]	%				
9.6	Effective Tax Rate [4]					
9.7	SBI Base Rate + 350 basis points as on [3]	%				

1. Month wise 10 - day Design energy figures to be given separately with the petition.
2. Tax rate applicable to the company for the year FY 2018 - 19 should also be furnished.
3. Mention relevant date
4. Effective tax rate is to be computed in accordance with Regulation 31 i.e. actual tax (or advance tax)/ gross income, where gross income refers the profit before tax.

(Petitioner)

PART-II
FORM-3

Salient Features of Hydroelectric Project

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

1. Location	
State / Distt.	Assam/Dima Hasao
River	Kopili
2. Diversion Tunnel	
Size, shape	NIL
Length (M)	
3. Dam	
Type	Concrete Gravity
Maximum dam height (M)	36.00 Mtrs
4. Spillway	
Type	OGEE
Crest level of spillway (M)	El. 602.00 Mtrs
5. Reservoir	
Full Reservoir Level (FRL) (M)	El. 609.6 Mtrs
Minimum Draw Down Level (MDDL) (M)	El. 592.99 Mtrs
Live storage (MCM)	110.5
6. De - silting Chamber	
Type	NA
Number and Size	
Particle size to be removed (mm)	
7. Head Race Tunnel	
Size and type	Dia: 4.6 Mtr, Circular
Length (M)	5500.67 Mtr
Design discharge (Cumecs)	70
8. Surge Shaft	
Type	Simple
Diameter (M)	Dia: Riser 10.00 Mtr & Expansion Chamber 20.00 Mtr
Height (M)	103 mtr
9. Penstock / Pressure shafts	
Type	Circular (Steel Lined)
Diameter & Length (M)	Dia: 2.75 Mtr and length 680 Mtr
10. Power House	
Installed capacity (No of units X MW)	4 X 50 MW
Type of turbine	Francis (Vertical Shaft)
Rated Head (M)	331.60 Mtr
Rated Discharge (Cumecs)	17.3
Head at Full Reservoir Level (M)	331.6
Head at Minimum Draw down Level (M)	309.2
NW Capability at FRL	230
NW Capability at MDDL	120
11. Tail Race Tunnel / Channel	
Diameter (M), shape	NA
Length (M)	
Minimum tail water level (M)	
12. Switchyard	
Type of Switch gear	Outdoor
No. of generator bays	4
No. of Bus coupler bays	1
No. of line bays	6
Efficiency (overall) Turbine and generator	93.4

Note : Specify limitation on generation during specific time period (s) on account of restrictions on water use due to irrigation, drinking water, industrial, environmental considerations etc.

(Petitioner)

Details of Foreign loans

(Details only in respect of loans applicable to the project under petition)

Name of the Petitioner: NORTH EASTERN ELECTRIC POWER CORPORATION LTD.

PART-II FORM- 6

Name of the Generating Station: KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Exchange Rate at COD

Exchange Rate as on 31.3.2019

S. No.	Financial Year (Starting from COD)	Year 1				Year 2				Year 3 and so on			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
		Date	Amount (Foreign Currency)	Relevant Exchange Rate	Amount (Rs. Lakh)	Date	Amount (Foreign Currency)	Relevant Exchange Rate	Amount (Rs.Lakh)	Date	Amount (Foreign Currency)	Relevant Exchange Rate	Amount (Rs. Lakh)
	Currency1[1]												
A.1	At the date of Drawl[2]												
2	Scheduled repayment date of principal												
3	Scheduled payment date of interest												
4	At the end of Financial year												
B	In case of Hedging[3]												
1	At the date of hedging												
2	Period of hedging						NOT APPLICABLE						
3	Cost of hedging												
	Currency2[1]												
A.1	At the date of Drawl[2]												
2	Scheduled repayment date of principal												
3	Scheduled payment date of interest												
4	At the end of Financial year												
B	In case of Hedging[3]												
1	At the date of hedging												
2	Period of hedging												
3	Cost of hedging												
	Currency3 & so on												
A.1	At the date of Drawl[2]												
2	Scheduled repayment date of principal												
3	Scheduled payment date of Interest												
4	At the end of Financial year												
B	In case of Hedging[3]												
1	At the date of hedging												
2	Period of hedging												
3	Cost of hedging												

1. Name of the currency to be mentioned e.g. US$, DM, etc.
2. In case of more than one drawl during the year, Exchange rate at the date of each drawl to be given
3. Furnish details of hedging, in case of more than one hedging during the year or part hedging, details of each hedging are to be given
4. Tax (such as withholding tax) details as applicable including change in rates, date from which change effective etc. must be clearly indicated.

(Petitioner)

Details of Foreign Equity

(Details only in respect of Equity infusion if any applicable to the project under petition)

PART-II
FORM- 4A

Name of the Petitioner: NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station: KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)
Exchange Rate on date/s of infusion

S. No.	Financi	Year 1				Year 2				Year 3 and so on			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
		Date	Amount (Foreign Currency	Relevant Exchang e Rate	Amou nt (Rs. Lakh)	Date	Amount (Foreign Currency	Relevant Exchang e Rate	Amou nt (Rs.	Date	Amount (Foreign Currency)	Relevant Exchang e Rate	Amount (Rs. Lakh)
	Curren												
A.1	At the												
2													
3													
	Curren												
A.1	At the												
2						NOT APPLICABLE							
3													
	Curren												
A.1	At the												
2													
3													
	Curren												
A.1	At the												
2													
3													

1. Name of the currency to be mentioned e.g. US$, DM, etc.
2. In case of equity infusion more than once during the year, Exchange rate at the date of each infusion to be given

(Petitioner)

PART - II
FORM - 5

Abstract of Admitted Capital Cost for the existing Projects

Name of the Petitioner : **NORTH EASTERN ELECTRIC POWER CORPORATION LTD.**

Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Rs. In Lakhs

	Capital Cost as admitted by CERC	PLANT COMMISSIONED AFTER R&M DURING 2023-24 (UNIT 4, UNIT 3, UNIT 2) AND ON 03.06.2024 (UNIT 1/STATION COD)
a)	Capital Cost admitted as on __01.04.2019_____	
	(Give reference of the relevant CERC Order with Petition No. & Date)	
b)	Foreign Component, if any (In Million US $ or the relevant Currency)	
c)	Foreign Exchange rate considered for the admitted Capital cost (Rs Lakh)	
d)	Total Foreign Component (Rs. Lakh)	
e)	Domestic Component (Rs. lakh)	
f)	Hedging cost, if any, considered for the admitted Capital cost (Rs Lakh)	
	Total Capital cost admitted (Rs. Lakh) (d+e+f)	

PART-II
FORM- 5A

Abstract of Capital Cost Estimates and Schedule of Commissioning for the New Projects

Name of the Petitioner NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station **Kopili Hydro Power Station (4x50 MW)**

New Projects
Capital Cost Estimates

Board of Director/ Agency approving the Capital cost estimates:	Ministry of Power(MoP),Govt of India			
Date of approval of the Capital cost estimates:	12/2/2004			
	Present Day Cost	**Completed Cost**		
Price level of approved estimates	Projected analysis as on 29.08.2023 UNIT-IV	Projected analysis as on 03.09.2023 -UNIT-III	Projected analysis as on 12.11.2023 -UNIT-II	Projected analysis as on 03.06.2024 -UNIT-I
Foreign Exchange rate considered for the Capital cost estimates				
Foreign Component, if any (In Million US $ or the relevant Currency)				
Domestic Component (Rs. Lakh)				
Capital cost excluding IDC, IEDC, FC, FERV & Hedging Cost (Rs. Lakh)	31908.37	7111.33	41471.69	11367.30
IDC, IEDC, FC, FERV & Hedging Cost				
Foreign Component, if any (In Million US $ or the relevant Currency)				
Domestic Component (Rs. Lakh)	6086.97	6062.03	9070.048	7561.095
Total IDC, IEDC, FC, FERV & Hedging Cost (Rs. Lakh	6086.97	6062.03	9070.048	7561.095
Rate of taxes & duties considered				
Capital cost including IDC, IEDC, FC, FERV & Hedging Cost				
Foreign Component, if any (In Million US $ or the relevant Currency)				
Domestic Component (Rs. Lakh)	38024.34	13173.35	50541.94	18948.42
Capital cost including IDC, IEDC& FC (Rs. Lakh)				
Schedule of Commissioning as per investment approval				
Scheduled COD of Unit - I	Monday, June 3, 2024			
Scheduled COD of Unit - II		12.11.2023		
Scheduled COD of Unit-III			03.09.2023	
Scheduled COD of Unit-IV				20.08.2023
Scheduled COD of last Unit / Station				

Note:
1. Copy of approval letter should be enclosed
2. Details of Capital Cost are to be furnished as per FORM-5B or 5C as applicable
3. Details of IDC & Financing Charges are to be furnished as per FORM-14.

(Petitioner)

NEEPCO

Break-up of Capital Cost for New Hydro Power Generating Station

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : Kopili Hydro Power Station

SL No.	Item Code	Item Description	Original Cost as approved by Authority/ Investment Approval	Actual Capital Expenditure for UNIT-I- as on 03.06.24	Actual Capital Expenditure for UNIT-II- as on 12.11.23	Actual Capital Expenditure for UNIT-III- as on 03.09.23	Actual Capital Expenditure for UNIT-UNIT-IV-as on 20.08.23	Liabilities/ Provisions - UNIT-I	Liabilities/ Provisions - UNIT-II	Liabilities/ Provisions - UNIT-III	Liabilities/ Provisions - UNIT-IV	Variation UNIT-I	Variation UNIT-II	Variation UNIT-III	Variation UNIT-IV	Reasons For Variation
A		CIVIL AND HM WORKS														
I		DIRECT CHARGES														
i		I-WORKS														
	A	Preliminary & Pre-Operative Expenses	798.17	133.58	133.58	133.58	133.58	-	-	-	-	-65.97	-65.97	-65.97	-65.97	
	B	Cost of Land	-	-	-	-	-	-	-	-	-	-	-	-	-	
	C	Civil Works	386.00	50.61	50.61	50.61	50.61	6.26	6.26	6.26	6.26	-14.38	-14.38	-14.38	-14.38	
	J	Power Plant Civil Works	34,426.56	11,891.14	11,891.14	11,891.14	11,891.14	347.80	347.80	347.80	347.80	3,486.31	3,486.31	3,486.31	3,486.31	
	K	Buildings	248.06	33.05	33.05	33.05	33.05	-	-	-	-	-28.97	-28.97	-28.97	-28.97	
	M	Plantation	60.00	-	-	-	-	-	-	-	-	-20.00	-20.00	-20.00	-20.00	
	O	Miscellaneous	800.00	1,104.23	1,104.23	1,104.23	1,104.23	24.97	24.97	24.97	24.97	979.20	979.20	979.20	979.20	
	P	Maintenance during Construction	349.80	20.53	20.53	20.53	20.53	0.49	0.49	0.49	0.49	-66.37	-66.37	-66.37	-66.37	
	Q	Special Tools & Plants	100.00	5.65	5.65	5.65	5.65	-	-	-	-	-19.35	-19.35	-19.35	-19.35	
	R	Communication	2,883.66	414.40	414.40	414.40	414.40	17.65	17.65	17.65	17.65	-268.86	-268.86	-268.86	-268.86	
	X	Environment and Ecology	60.00	-	-	-	-	-	-	-	-	-13.50	-13.50	-12.50	-12.50	
	Y	Losses on stock	87.40	-	-	-	-	-	-	-	-	-21.85	-21.85	-21.85	-21.85	
		TOTAL I-WORKS	39,908.45	13,653.19	13,653.19	13,653.19	13,653.19	397.18	397.18	397.18	397.18	3,927.26	3,927.26	3,927.26	3,927.26	
ii		Establishment Charges	3,192.68	1,586.21	1,586.21	1,586.21	1,586.21	-	-	-	-	788.04	788.04	788.04	788.04	
iii		Tools & Plants	-	-	-	-	-	-	-	-	-	-	-	-	-	
iv		Suspense	-	-	-	-	-	-	-	-	-	-	-	-	-	
v		Receipts and Recoveries (-)	-	-	-	-	-	-	-	-	-	-	-	-	-	
		TOTAL DIRECT CHARGES	43,101.12	15,239.40	15,239.40	15,239.40	15,239.40	397.18	397.18	397.18	397.18	4,715.30	4,715.30	4,715.30	4,715.30	
2		INDIRECT CHARGES		-	-	-	-	-	-	-	-	-	-	-	-	
i		Capitalisation of Abatement of Land revenue	-	-	-	-	-	-	-	-	-	-	-	-	-	
ii		Audit & Accounts etc.	199.54	-	-	-	-	-	-	-	-	-49.89	-49.89	-49.89	-49.89	
		TOTAL INDIRECT CHARGES	199.54	-	-	-	-	-	-	-	-	-49.89	-49.89	-49.89	-49.89	
3		*A. TOTAL CIVIL & HM WORKS (1+2)*	43,300.67	15,239.40	15,239.40	15,239.40	15,239.40	397.18	397.18	397.18	397.18	4,665.41	4,665.41	4,665.41	4,665.41	
B		Electro-Mechanical Works		-	-	-	-	-	-	-	-	-	-	-	-	
i		Electro-Mechanical Works	36,923.52	11,214.33	11,214.33	11,214.33	11,214.33	675.04	675.04	675.04	675.04	2,512.49	2,512.49	2,512.49	2,512.49	
ii		Audit & Accounts charges	88.31	-	-	-	-	-	-	-	-	-22.08	-22.08	-22.08	-22.08	
iii		Establishment Charges of EM Works	2,099.34	1,287.01	1,287.01	1,287.01	1,287.01	-	-	-	-	762.17	762.17	762.17	762.17	
		B. Total Electro-Mechanical Works	39,111.17	12,501.34	12,501.34	12,501.34	12,501.34	675.04	675.04	675.04	675.04	3,252.58	3,252.58	3,252.58	3,252.58	
C		Insurance Cost against Residual Assets of the Plant	-	386.76	386.76	386.76	386.76	-	-	-	-	386.76	386.76	386.76	386.76	
D		Hard Cost (A+B+C)	82,411.84	28,127.50	28,127.50	28,127.50	28,127.50	1,072.21	1,072.21	1,072.21	1,072.21	8,304.76	8,304.76	8,304.76	8,304.76	
E		IDC & FC	5,397.00	1,993.25	1,993.25	1,993.25	1,993.25	-	-	-	-	644.00	644.00	644.00	644.00	
F		Total Project Cost(D+E)	87,808.84	30,120.75	30,120.75	30,120.75	30,120.75	1,072.21	1,072.21	1,072.21	1,072.21	8,948.76	8,948.76	8,948.76	8,948.76	
G		(-) Less Receipt:		-	-	-	-	-	-	-	-	-	-	-	-	
		a) Sale from Infirm Power	-	346.11	214.53	0.00	0.00	-	-	-	-	-346.11	-214.53	0.00	0.00	
		b) Sale of Scrap	-	744.75	744.75	744.75	744.75	-	-	-	-	-744.75	-744.75	-744.75	-744.75	
H		Net Total (F-G)	87,808.84	29,130.89	29,161.47	29,376.00	29,376.00	1,072.21	1,072.21	1,072.21	1,072.21	7,958.90	7,989.48	8,204.01	8,204.01	

DETAIL AT ANNEXURE-1

65.2

(Petitioner)

Break-up of Capital Cost for Plant & Equipment (New Projects)

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
(Abstract of Revised Cost Estimates of Electro Mechanical Works)
(At MAY-2024 Price Level)

PART II
FORM 5C

Sl. No	Item	Original Cost as approved by Authority / Investment Approval	Cost on Actual / anticipated COD (1)	Variation	Reasons for Variation*
		Total Cost	Total Cost	Total Cost	
1	**Preliminary - Annex-5(1)**	282.23	1,383.15	1,100.92	
	GST on Preliminary	50.80	249.21	198.41	
	Subtotal (Preliminary)	**333.03**	**1,632.37**	**1,299.34**	
2	**Generating Plant and Auxiliaries**		-	-	
	a) Generating Units and Associated Accessories - **Annex - 5(2)**	20,318.41	20,820.49	502.08	
	b) Auxiliary electrical equipment for power station -**Annex-5(3)**	3,791.67	5,561.22	1,769.55	
	c) Auxiliary Mechanical equipment and services for power station - **Annex-5(4)**	1,600.81	2,263.47	662.66	
	GST as applicable on 2(a), (b) & (c)	4,628.97	5,153.75	524.78	
	d) Transportation, handling and insurance charges	808.21	625.83	-182.38	
	GST as applicable on 2(d)	145.48	110.41	-35.07	
	e)Erection and commissioning charges (excluding spares)	1,997.35	5,865.70	3,868.44	
	e.1) Insurance on Erection and Commissioning		166.41	166.41	
	GST as applicable on 2E	359.51	1,070.78	711.28	
	Sub-Total (Generating Plant and Equipment)	**33,650.31**	**41,658.06**	**8,007.75**	1. Delay in AHPL supplied major turbine & generator equipment (High grade steel from the Europe) 2. Delay due to Covid -19 restriction 3. Delay in BHEL supplied BF Valve 4. Disruption in construction power supply 5. Surprises in Unit One spiral Casing
3	**Switchyard and Pothead Yard Equipment & Services**		-	-	
	a) Substation equipment, auxiliary equipment and service of Switchyard - **Annex-5(5)**	1,012.07	1,449.49	437.42	
	GST (as applicable on 3(a) & (b)	182.17	260.91	78.74	
	b) Transportation,handling and insurance charges	60.72	116.71	55.99	
	GST as applicable on 3(b)	10.93	20.92	9.99	
	c) Erection & Commissioning Charges (excluding spares)	61.70	141.70	80.00	
	GST as applicable on 3©	11.11	25.61	14.49	
	Sub-Total (Substation Equipment, Auxiliary Equipment and Service of Switch Yard)	**1,338.70**	**2,013.23**	**676.53**	
4	Contingencies @ 1% of Items 2 & 3	349.80	120.11	-229.78	
5	Tools & Plants @ 0.5% of Item 2 &3	174.95	113.95	-61.00	
6	**Sub-Total (Item 1 to 5)**	**35,846.88**	**45,538.72**	**9,692.84**	
7	Establishment (as per Para 16.5 of Chapter XVI)	2,099.34	5,148.03	3,048.69	
8	**Sub Total (Item 6 & 7)**	**37,946.22**	**50,687.75**	**12,741.53**	
9	Audit and account Charges (as per para 16.9.2 of Chapter XVI)	88.31	-	-88.31	
10	**TOTAL (8 + 9)**	**38,034.53**	**50,687.75**	**12,653.22**	
11	**Dismantling**		-	-	
	Dismantling Charges	912.41	1,215.13	302.72	
	GST as applicable on Dismantling Charges	164.23	218.63	54.39	
	Subtotal (Dismantling Charges)	**1076.64**	**1,433.76**	**357.12**	
12	**GRAND TOTAL (11 + 14)**	**39,111.17**	**52,121.51**	**13,010.34**	

(Petitioner)

PART-II
FORM-5D

Break-up of Construction/Supply/Service packages

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : Kopili Hydro Power Station

1	Name/No. of Major Construction/Supply/Service Package	CIVIL WORKS				HM WORKS		EM WORKS	Total Cost of all packages
2	Scope of works[1] (in line with head of cost break-ups as applicable)	Civil Works pertaining to Restoration of Kopili Hydro Electric Plant	Construction Of Kiosk Room at Switchyard Kopili Power Station	Construction of Spur at Downstream of Kopili Power House of KHPS	Construction of 02 (Two) Nos. of Fire Fighting Tanks at Kopili Power Station,	Design, Fabrication, Supply, Erection, Testing & Commissioning of Penstock and Steel In-Liners in Umrong System	Repair and or Rebuild and or Replacement, Including Design, Supply, Fabrication, Erection, Testing and Commissioning of HM Components of Umrong WCS	Please refer "Annexure of Form 5D"	
3	Whether awarded through ICB/DCB/Departmentally/Deposit Work	Awarded through C&P, HQ/Site							
4	No. of bids received								
5	Date of Award	31.12.2020	8/27/2022	11/3/2021	9/20/2022	11/2/2020	9/17/2021		
6	Date of Start of work	31.12.2020	8/27/2022	11/3/2021	9/20/2022	11/2/2020	9/17/2021		
7	Date of Completion of Work/Expected date of completion of work	In progress	5/7/2023	4/21/2023	2/28/2025	9/10/2023	2/12/2024		
8	Value of Award in (Rs. Lakh) CEA vetted cost	43300.67						39111.17	82411.84
9	Firm or With Escalation in prices	With Escalation	Firm	Firm	Firm	With Escalation	Firm		
10	As per project expenditure up to 03.06.2024(Rs.Lakh)	59534.48						50564.59	110099.07
11	Taxes & Duties and IEDC (Rs. Lakh)	2427.84						1556.92	3984.76
12	IDC, FC, Insurance, FERV & Hedging cost (Rs. Lakh)	9520.04							9520.04
13	Less Receipts (Sale of Scrap & Infirm Power)	-3438.65							-3438.65
14	Sub-total (10 + 11 + 12) (Rs. Lakh)	**120165.22**							**120165.22**

Note:
1. If there is any package, which need to be shown in Indian Rupee and foreign currency (ies), the same should be shown separately along with the currency, the exchange rate and the date.

(Petitioner)

Break-up of Construction / Supply / Service packages

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Sta Kopili Hydro Power Station

1	Name/No. of Construction/Supply/Service Package	(a) In INR'S									
2	Scope of work* (in line with head of work/ break ups as applicable)	Detailed Design and Engineering, Manufacture, Testing at Works, Despatch, Inland Transportation including Freight and Insurance, Delivery to Project Site,Storage and Preservation of all Equipment at site,Handling, Erection, Testing and Commissioning at site of all Plant&Mechanical Equipment	Reverse Engineering, Design, Engineering, Manufacturing, Supply, Repair/Refurbishment of Runners at Works, Trial Assembly of Guide Apparatus at Works, Supervision of Erection works at site, Testing & Commissioning of Turbine of Kopili Unit 3, 3 and IV	Design, Engineering, Manufacturing, Shop testing, Shop assembly, Supply and Delivery of (20Nos) Sets of Inlet Valve (Steel 1400 mm dia Spherical Valve) MIV with associated Parts	Design, engineering, manufacturing, supply, erection and commissioning of Runner and other Turbine Parts of Unit#I	Design, Engineering, Manufacture, Testing at Works, Supply on F.O.R. destination/site basis, Inland Transportation including Freight and Insurance, unloading, storage, dismantling, erection/retesting, testing and commissioning of 220kV V Switchyard Equipment	Site Survey, Design, Manufacturing, Supply,Delivery, Erection, Testing and Successful Commissioning of Fire detection and protection system	S/ws @ 12	2 Nos Horizontal Protection Valve (Butterfly Valve)	Design, manufacturing, supply, delivery, fabrication, erection, testing and commissioning of different sizes of pipes, fittings, valves etc. required for connection and modernization of cooling water system	
3	Whether awarded through ICB/DCB/Departmentally/Deemed Work	Available with C&P Wing,Shillong	Available with C&P Wing,KHPS	Available with C&P Wing,KHPS	Available with C&P Wing,KHPS	Available with C&P Wing,Shillong	Available with C&P Wing,KHPS	Available with C&P Wing,Shillong	Available with DAP Wing,Shillong	Available with C&P Wing,KHPS	
4	No. of bids received										
5	Date of Award	03.04.2021	03.12.2021	02.01.2020	02.01.2020	28.12.2021	16.11.2021	17.12.2020	15.12.2020	14.07.2021	
6	Date of Start of work	03.04.2021	03.12.2021	02.01.2020	02.01.2020	28.12.2021	16.11.2021	17.12.2020	15.12.2020	14.07.2021	
7	Date of Completion of Work/Expected date of completion of work	02.02.2024	13.11.2023	1st Valve: 23/12/21 2nd Valve: 31/01/22 3rd Valve: 23/02/22	30.09.2024	15.06.2023	31.08.2024	02.02.2024	30.11.2023	31.07.2023	
8	Value of Award in (Rs. Lakh) (Gross value)	28111.17									
9	Firm or With Escalation in (2016)	Firm Escalation	With Escalation	Firm	Firm	Firm	Firm	With Escalation	Firm	Firm	
10	As per project expenditure up to 31.03.2024(Rs Lakh)	30584.09									
11	Taxes & Duties excl IDC (Rs. Lakh)	1668.22									
12	IDC, FC, insurance, WMV & Hedging cost (Rs. Lakh)	1632.44									
13	Less Receipts (Sale of Scrap & Inform Power)	-									
14	Subtotal (10+11+12) (Rs Lakh)	-									

Note:
1. If there is any package, which need to be shown in Indian Rupee and foreign currency (ies), the same should be shown separately along with the currency, the exchange rate and the date.

(Petitioner)

PART-II
FORM-16I

In case there is cost over run

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : Kopili Hydro Power Station

Sl. No.	Break Down	Original Cost (Rs. Lakh) as approved in the Total Cost	Cost (Rs. Lakh)-as on 03.06.24 UNIT-I Total Cost	Cost (Rs. Lakh)-as on 12.11.23 UNIT- II Total Cost	Cost (Rs. Lakh)-as on 03.09.23 UNIT-III Total Cost	Cost (Rs. Lakh)-as on 20.05.23 UNIT-IV Total Cost	Difference Total Cost	Reason for Variation (Please submit supporting computations and documents wherever applicable)	Increase in soft cost due to increase in hard cost
A	Preliminary & Pre Operative Expenses	728.17	131.58	131.58	131.58	131.58	-361.83		
B	Cost of Land	0.00	0.00	0.00	0.00	0.00	0.00		
C	Civil Works	360.00	36.87	36.87	36.87	36.87	-47.53		
D	Power Plant Civil Works	31428.76	12930.93	12987.93	12982.93	12982.93	13463.23		
K	Buildings	248.66	31.05	35.05	35.05	35.05	-115.80		
M	Plantation	80.00	0.00	0.00	0.00	0.00	-80.00		
O	Miscellaneous	600.00	1129.30	1129.30	1129.30	1129.30	3916.81		
P	Maintenance during Construction	349.60	21.05	21.05	21.05	21.05	-293.49		
Q	Special Tools & Plants	100.00	5.65	5.65	5.65	5.65	-77.39		
R	Communication	2883.64	452.05	452.05	452.05	452.05	-1115.44		
S	Environment and Ecology	50.00	0.00	0.00	0.00	0.00	-50.00		
Y	Losses on stock	87.40	0.00	0.00	0.00	0.00	-87.40		
	TOTAL I WORKS	39966.45	13904.37	13904.37	13904.37	13904.37	13904.37		
ii	Establishment Charges @ 8% of I Works	1193.68	1586.21	1586.21	1586.21	1586.21	5012.17		
iii	Tools & Plants	6.00	0.00	0.00	0.00	0.00	0.00		
iv	Suspense	0.00	0.00	0.00	0.00	0.00	0.00		
v	Receipts and Recoveries(-)	0.00	0.00	0.00	0.00	0.00	0.00		
	TOTAL DIRECT CHARGES	43181.12	15490.58	15490.58	15490.58	15490.58	18861.37		
	INDIRECT CHARGES		0.00	0.00	0.00	0.00	0.00		
i	Capitalisation of Abatement of Land revenue	0.00	0.00	0.00	0.00	0.00	0.00	DETAIL AT ANNEXURE-I	
ii	Audit & Accounts etc. @1% of I Works	199.51	0.00	0.00	0.00	0.00	-199.51		
	TOTAL INDIRECT CHARGES	199.51	0.00	0.00	0.00	0.00	-199.51		
	A. TOTAL CIVIL & ARI WORKS (I+J)	43380.63	15490.58	15490.58	15490.58	15490.58	18661.85		
B	Electro-Mechanical Works								
i	Electro-Mechanical Works (Detail at Sheet "Annex of Form16I")	30823.52	11743.37	11743.37	11743.37	11743.37	18089.86		
ii	Audit & Accounts charges	88.31	0.00	0.00	0.00	0.00	-88.31		
iii	Establishment Charges of EM Works	2099.24	1287.01	1287.01	1287.01	1287.01	-3648.49		
	B. Total Electro-Mechanical Works	39111.17	13030.38	13030.38	13030.38	13030.38	13030.38		
C	Insurance Cost against Residual Assets of the Plant	0.00	386.76	386.76	386.76	386.76	1547.04		
D	Hard Cost (A+B+C)	82491.80	28907.71	28907.71	28907.71	28907.71	31739.02		
E	IDC & FC	5382.00	1993.25	1993.25	1993.25	1993.25	-2159.00		
F	Total Project Cost(D+E)	87600.84	30900.96	30900.96	30900.96	30900.96	33198.02		
G	(-) Less Receipt		0.00	0.00	0.00	0.00	0.00		
	(a) Sale from Infirm Power	0.00	216.23	0.00	0.00	0.00	-216.23		
	(b) Sale of Scrap	0.00	744.75	744.75	744.75	744.75	-2979.00		
H	Net Total (F-G)	87600.84	29941.98	30156.21	30156.21	30156.21	33396.98		

(Petitioner)

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
(Abstract of Revised Cost Estimates of Electro Mechanical Works)
(At NAY-2024 Price Level)

Sl. No	Item	Original Cost (Rs. Lakh) as approved by the Board of Members Total Cost	Cost (Rs. Lakh)- as on 03.06.24 UNIT-I Total Cost	Cost (Rs. Lakh)- as on 12.11.23 UNIT- II Total Cost	Cost (Rs. Lakh)- as on 03.09.23 UNIT-III Total Cost	Cost (Rs. Lakh)- as on 20.08.23 UNIT-IV Total Cost	Difference Total Cost
1	Preliminary - Annex-S(1)	202.23	345.79	345.79	345.79	345.79	1,100.92
	GST on Preliminary	50.80	62.30	62.30	62.30	62.30	198.41
	Subtotal (Preliminary)	333.03	408.09	408.09	408.09	408.09	1,299.34
2	Generating Plant and Auxiliaries		-				-
	a) Generating Units and Associated Accessories - Annex - S(2)	20,318.41	5,205.12	5,205.12	5,205.12	5,205.12	502.08
	b) Auxiliary electrical equipment for power station -Annex-S(3)	3,791.67	1,395.31	1,395.31	1,395.31	1,395.31	1,789.55
	c) Auxiliary Mechanical equipment and services for power station - Annex-S(4)	1,600.81	565.87	565.87	565.87	565.87	662.66
	GST as applicable on 2(a), (b) & (c)	4,608.97	1,288.44	1,288.44	1,288.44	1,288.44	524.78
	d) Transportation, handing and insurance charges	808.21	156.46	156.46	156.46	156.46	-162.38
	GST as applicable on 2(d)	145.48	27.60	27.60	27.60	27.60	-35.07
	e)Erection and commissioning charges (excluding spares)	1,997.26	1,466.43	1,466.43	1,466.43	1,466.43	3,868.44
	e.1) Insurance on Erection and Commissioning		41.60	41.60	41.60	41.60	166.41
	GST as applicable on 2e	359.51	267.70	267.70	267.70	267.70	711.28
	Sub-Total (Generating Plant and Equipment)	33,650.31	10,414.52	10,414.52	10,414.52	10,414.52	8,097.75
3	Switchyard and Pothead Yard Equipment & Services		-				-
	a) Substation equipment, auxiliary equipment and service of Switchyard - Annex-S(5)	1,012.07	362.37	362.37	362.37	362.37	437.42
	GST (as applicable on 3(a) & (b)	182.17	65.23	65.23	65.23	65.23	78.74
	b) Transportation,handling and insurance charges	80.72	29.18	29.18	29.18	29.18	55.98
	GST as applicable on 3(b)	10.93	5.23	5.23	5.23	5.23	9.99
	c) Erection & Commissioning Charges (excluding spares)	61.70	35.42	35.42	35.42	35.42	80.00
	GST as applicable on 3b	11.11	6.38	6.38	6.38	6.38	14.40
	Sub-Total (Substation Equipment, Auxiliary Equipment and Service of Switch Yard)	1,338.70	503.81	503.81	503.81	503.81	676.53
4	Contingencies @ 1% of items 2 & 3	349.89	30.03	30.03	30.03	30.03	-229.78
5	Tools & Plants @ 0.5% of item 2 &3	174.95	28.49	28.49	28.49	28.49	-61.00
6	Sub-Total (Item 1 to 5)	35,846.88	11,384.93	11,384.93	11,384.93	11,384.93	9,652.84
7	Establishment (as per Para 16.5 of Chapter XVI)	2,099.34	1,287.01	1,287.01	1,287.01	1,287.01	3,048.09
8	Sub Total (Item 6 & 7)	37,946.22	12,671.94	12,671.94	12,671.94	12,671.94	12,741.53
9	Audit and account Charges (as per para 16.9.2 of Chapter XVI)	88.31					-88.31
10	TOTAL (8 + 9)	38,034.53	12,671.94	12,671.94	12,671.94	12,671.94	12,653.22
11	Dismantling		-	-	-	-	-
	Dismantling Charges	912.41	303.78	303.78	303.78	303.78	302.72
	GST as applicable on Dismantling Charges	164.23	54.66	54.66	54.66	54.66	54.39
	Subtotal (Dismantling Charges)	1076.64	358.44	358.44	358.44	358.44	357.12
12	GRAND TOTAL (11 + 14)	39,111.17	13,030.38	13,030.38	13,030.38	13,030.38	13,010.34

In case there is time over run

Name of the Petitioner :
Name of the Generating Station :

NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Kopili Hydro Power Station

S. No.	Description of Activity/Works/Service	Original Schedule (As per Planning)		Actual Schedule (As per Actual)		Time Over Run as per Station COD	Reasons for delay	Other Activity affected (Mention Sr No. of activity affected)
		Start Date	Completion Date	Actual Start Date	Actual Completion Date	Months		
1	Civil Works							
a	Civil Works pertaining to Restoration of Kopili Hydro Electric Plant, Umrangso, Assam	12/11/2020	20/06/2022	12/11/2020	15/11/2023			
b	Construction Of Kiosk Room at SwitchYard Kopili Power Station,KHPS,Umrangso	02/12/2022	11/04/2022	6/07/2022	5/7/2023			
c	Construction of Spur at Downstream of Kopili Power House of Kopili Hydro Electric Plant Umrangso,Assam	11/3/2021	9/02/2022	11/02/2021	4/21/2023			
d	Construction of 02 (Two) Nos. of Fire Fighting Tanks at Kopili Power Station, KHPS, Umrangso	9/09/2022	5/18/2023	9/09/2022	2/28/2023			
2	HM Works							
a	Design, Fabrication, Supply, Erection, Testing & Commissioning of Penstock and Steel lined Liners in Unrang System of Kopili Hydro Electric Project (275 MW), Dist-Dima Hasao, Assam	11/02/2020	4/30/2022	11/2/2020	9/10/2023			
b	Repair and or Rebuild and or Replacement, including Design, Supply, Fabrication, Erection, Testing and Commissioning of Hydro Mechanical Components of Umrang Water Conductor System Under Re-Construction, Renovation & Modernization of KHEP(4X50mw), Dist-Dima Hasao, Assam	9/11/2021	5/10/2022	9/17/2021	3/12/2024			
3	EM Works							
a	Detailed Design and Engineering, Manufacture, Testing at Works, Despatch, Inland Transportation including Freight and Insurance, Delivery to Project Site, Storage and Preservation of all Equipment at any intermediate locations, Supervision of Complete Assembly, Erection, Testing and Commissioning at site of all Electro-Mechanical Equipment	03.04.2021	Unit #III: 02/10/2022 Unit #II&IV: 02/01/2023	03.04.2021	Unit: 03.04.2024 Unit: 12/11/2023 Unit:03/09/2023 Unit: 28/08/2023	13.2	DETAIL AT ANNEXURE 1	
b	Reverse Engineering, Design, Engineering, Manufacturing, Supply, Repair/Refurbishment of Runners at Works, Trial Assembly of Guide Apparatus at Works, Supervision of Erection works at site, Testing & Commissioning of Turbine of Kopili Unit II, III and IV	23.12.2021	Unit: 23/12/2022 Unit:03/11/2022 Unit: 23/10/2022	23.12.2021	Unit: 30-10-2023 Unit# 12-09-2023 Unit: 14-07-2023			
c	Design, Engineering, Manufacturing, Shop testing, Shop assembly, Supply and Delivery of 3(three) Nos of stainless Steel 1400 mm dia Spherical Valves (MIV) with associated items	02.12.2020	1st Valve: 03/01/22 2nd Valve: 03/03/22 3rd Valve: 02/03/22		1st Valve: 22/10/21 2nd Valve: 31/01/22 3rd Valve: 22/02/22			
d	Design, engineering, manufacturing, supply, erection and commissioning of Runner and other Turbine Parts of Unit#I	03.01.2022	30.03.2023 (Supply)	03.01.2022	29.03.2024 (Supply)			
e	Design, Engineering, Manufacture, Testing at Works, Supply on F.O.R. destination/site basis, Inland Transportation including freight and Insurance, unloading, storage, dismantling, erection/re-erecting, testing and commissioning of 220K V Switchyard Equipment	29.10.2021	28.10.2022	29.10.2021	10.08.2023			
f	Site Survey, Design, Manufacturing, Supply, Delivery, Erection, Testing and Successful Commissioning of fire detection and protection system	16.12.2021	15/03/2023	16.12.2021	30.03.2024(Expected)			
g	5 nos of CT	17.12.2020	Unit #III: 16/01/2022 Unit #II,IV & Spare: 10/04/2022	17.12.2020	Unit: 22-05-2024 Unit: 03.11.2023 Unit#:21-08-2023 Unit#: 01-08-2023 Spare: Not yet			
h	2 Nos Penstock Protection Valve (Butterfly Valve)	15.12.2020	14.12.2021	15.12.2020	02.11.2023			
i	Design, manufacturing, supply, delivery, fabrication, erection, testing and commissioning of different sizes of pipes, Bllinds, valves etc. required for renovation and modernization of cooling water system	14.07.2021	02/1/2023	14.07.2021	3/06/2023			

(Petitioner)

PART-I
FORM- 7

Details of Project Specific Loans

Name of the Company : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Particulars		Package 1	package 2
Source of Loan [1]	NOT APPLICABLE		
Currency[2]			
Amount of Loan sanctioned			
Amount of Gross Loan drawn upto 31.03.2019/COD [3, 4, 5, 13, 15]			
Interest Type [6]			
Fixed Interest Rate, if applicable			
Base Rate, if Floating Interest[7]			
Margin, if Floating Interest[8]			
Are there any Caps/Floor[9]			
If above is yes,specify caps/floor			
Moratorium Period[10]			
Moratorium effective from			
Repayment Period[11]			
Repayment effective from			
Repayment Frequency[12]			
Repayment Instalment [13, 14]			
Base Exchange Rate [16]			
Are foreign currency loan hedged ?			
If above is yes, specify details [17]			

Note:

1. Source of loan means the agency from whom the loan has been taken such as WB, ADB, WMB, PNB, SBI, ICICI, IFC, PFC etc.
2. Currency refers to currency of loan such as US$, DM, Yen, Indian Rupee etc.
3. Details are to be submitted as on 31.03.2019 for existing assets and as on COD for the remaining assets.
4. Where the loan has been refinanced, details in the Form is to be given for the loan refinanced. However, the details of the original loan is to be given separately in the same form.
5. If the Tariff in the petition is claimed separately for various units, details in the Form is to be given separately for all the units in the same form.
6. Interest type means whether the interest is fixed or floating.
7. Base rate means the base as PLR, LIBOR etc. over which the margin is to be added. Applicable base rate on different dates from the date of drawl may also be enclosed.
8. Margin means the points over and above the floating rate.
9. At times caps/floor are put at which the floating rates are frozen. If such a condition exists, specify the limits.
10. Moratorium period refers to the period during which loan servicing liability is not required.
11. Repayment period means the repayment of loan such as 7 years, 10 years, 25 years etc.
12. Repayment frequency means the interval at which the debt servicing is to be done such as monthly, quarterly, half yearly, annual, etc.
13. Where there is more than one drawal/repayment for a loan, the date & amount of each drawal/repayment may also be given separately
14. If the repayment installment amount and repayment date cannot be worked out from the data furnished above, the repayment schedule to be furnished separately.
15. In case of Foreign loan, date of each drawals repayment along with exchange rate at that date may be given.
16. Base exchange rate means the exchange rate prevailing as on 31.03.2019 or COD, whichever is later
17. In case of hedging, specify details like type of hedging, period of hedging, cost of hedging, etc.
18. In case of foreign loans, provide details of exchange rate considered on date of each repayment of principal and date of interest payment.
19. At the time of truing up rate of interest with relevant reset date (if any) to be furnished separately
20. At the time of truing up provide details of refinancing of loans considered earlier. Details such as date on which refinancing done, amount of refinanced loan, terms and conditions of refinanced loan, financing and other charges incurred for refinancing, etc.

(Petitioner)

PART-I
FORM- 7

Details of Project Specific Loans

Name of the Company : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Particulars		Package 1	package 2
Source of Loan [1]	NOT APPLICABLE		
Currency[2]			
Amount of Loan sanctioned			
Amount of Gross Loan drawn upto 31.03.2019/COD [3, 4, 5, 13, 15]			
Interest Type [6]			
Fixed Interest Rate, if applicable			
Base Rate, if Floating Interest[7]			
Margin, if Floating Interest[8]			
Are there any Caps/Floor[9]			
If above is yes,specify caps/floor			
Moratorium Period[10]			
Moratorium effective from			
Repayment Period[11]			
Repayment effective from			
Repayment Frequency[12]			
Repayment Instalment [13, 14]			
Base Exchange Rate [16]			
Are foreign currency loan hedged ?			
If above is yes, specify details [17]			

Note:

1. Source of loan means the agency from whom the loan has been taken such as WB, ADB, WMB, PNB, SBI, ICICI, IFC, PFC etc.
2. Currency refers to currency of loan such as US$, DM, Yen, Indian Rupee etc.
3. Details are to be submitted as on 31.03.2019 for existing assets and as on COD for the remaining assets.
4. Where the loan has been refinanced, details in the Form is to be given for the loan refinanced. However, the details of the original loan is to be given separately in the same form.
5. If the Tariff in the petition is claimed separately for various units, details in the Form is to be given separately for all the units in the same form.
6. Interest type means whether the interest is fixed or floating.
7. Base rate means the base as PLR, LIBOR etc. over which the margin is to be added. Applicable base rate on different dates from the date of drawl may also be enclosed.
8. Margin means the points over and above the floating rate.
9. At times caps/floor are put at which the floating rates are frozen. If such a condition exists, specify the limits.
10. Moratorium period refers to the period during which loan servicing liability is not required.
11. Repayment period means the repayment of loan such as 7 years, 10 years, 25 years etc.
12. Repayment frequency means the interval at which the debt servicing is to be done such as monthly, quarterly, half yearly, annual, etc.
13. Where there is more than one drawal/repayment for a loan, the date & amount of each drawal/repayment may also be given separately
14. If the repayment installment amount and repayment date cannot be worked out from the data furnished above, the repayment schedule to be furnished separately.
15. In case of Foreign loan, date of each drawals repayment along with exchange rate at that date may be given.
16. Base exchange rate means the exchange rate prevailing as on 31.03.2019 or COD, whichever is later
17. In case of hedging, specify details like type of hedging, period of hedging, cost of hedging, etc.
18. In case of foreign loans, provide details of exchange rate considered on date of each repayment of principal and date of interest payment.
19. At the time of truing up rate of interest with relevant reset date (if any) to be furnished separately
20. At the time of truing up provide details of refinancing of loans considered earlier. Details such as date on which refinancing done, amount of refinanced loan, terms and conditions of refinanced loan, financing and other charges incurred for refinancing, etc.

(Petitioner)

PART-II
FORM- 8

Details of Allocation of corporate loans to various projects

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI 200 MW

Particulars	Loan 1	Loan 2
Source of Loan	SBI-Rupee Term loan	HDFC - Long Term Loan
Currency	INR	INR
Amount of Loan sanctioned	10,000,000,000	5,000,000,000
Amount of Gross Loan drawn upto /COD	10,000,000,000	5,000,000,000
Interest Type	Floating	Floating
Fixed Interest Rate, if applicable	N.A.	N.A.
Base Rate, if Floating Interest	SBI 3-month MCLR	1 Month T-Bill
Margin, if Floating Interest	0.00%	1.67%
Are there any Caps/Floor	N.A.	N.A.
If above is yes,specify caps/floor	N.A.	N.A.
Moratorium Period	2 years & 3 months	2 years & 3 months
Moratorium effective from	October 26, 2021	October 6, 2022
Repayment Period	8 years	8 years
Repayment effective from	January 26, 2024	January 6, 2025
Repayment Frequency	Quarterly	Quarterly
Repayment Instalment	(i) Rs.25 crore 9th to 20th quarter (ii) Rs.50 crore 21st to 28th quarter (iii) Rs.75 crore 29th to 32nd quarter	(i) Rs.15 crore 9th to 20th quarter (ii) Rs.25 crore 21st to 28th quarter (iii) Rs.30 crore 29th to 32nd quarter
Base Exchange Rate	N.A.	N.A.
Distribution of Gross Loan drawn up to:	***(Amount in lacs)***	
Name of the Project		
1.Kopili Hydro Power Station (200 MW)	80,000.00	20,000.00
2.Solar PP, Monarchak		336.00
4. Kameng Hydro Electric Project, Arunachal Pradesh	20,000.00	27,448.49
8 Tuirial Hydro Power Station		2,215.51
Total	**100,000.00**	**50,000.00**

(Petitioner)

PART-II
FORM- 9A

Year wise Statement of Additional Capitalisation after COD

2019-24

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

COD

For Financial Year

Sl. No.	Head of Work/Equipment	ACE Claimed (Actual/Projected)			IDC included in col.3	Regulation under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis (Rs in lakh)	Un-discharged Liability included in col.3 (Rs in lakh)	Cash basis				
1	2	3	4	(5=3-4)	6	7	8	9
WILL BE CLAIMED IN DUE COURSE IN THROUGH TRUING UP PETITION								

(Petitioner)

69

PART-II
FORM- 9B

Statement of Additional Capitalisation during fag end of the Project

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)
COD 03.06.2024

Sr. No.	Year	Work/Equipment added during last five years of useful life of each Unit/Station	Amount capitalised / Proposed to be capitalised (Rs Lakh)	Justification for capitalisation proposed	Impact on life extension
1	2	3	4	5	6
NOT APPLICABLE					

Note :
1. Cost Benefit Analysis for capital additions done should be submitted along with petition for approval of such schemes.
2. Justification for additional capital expenditure claim for each asset should be relevant to regulation under which claim and the necessity of capitalisation of the asset.

(Petitioner)

PART-II
FORM- 9Bi

Details of Assets De-capitalized during the period

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD
Name of the Generating Station : KOPILI GENERATING UNIT
Region NORTH EAST State ASSAM District DIMA HASAO

S. No.	Name of the Asset	Nature of de-capitalization (whether claimed under exclusion or	Original Value of the Asset Capitalized	Year Put to use	Depreciation recovered till date of de-capitalization
(1)	(2)	(3)	(4)	(5)	(6)
			NIL		

Note: Year wise detail need to be submitted.

(Petitioner)

Statement showing reconciliation of ACE claimed with the capital additions as per books

PART-II
FORM- 9C

Name of the Petitioner :NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED
Name of the Generating Station COD :KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

S. No.	Particulars	20.08.2023-02.09.2023	03.09.2023-11.11.2023	12.11.2023-31.03.2024
1	2	3	4	5
1	Closing Gross Block as per IND AS	54236.70	67411.27	118779.33
2	Add/Less: Adjustments	0	0	0
3	Closing Gross Block as per IGAAP	54236.70	67411.27	118779.33
4	Opening Gross Block as per IND AS	54199.55	67409.01	117950.96
5	Add/Less: Adjustments	0.00	0	0.00
6	Opening Gross Block as per IGAAP	54199.55	67409.01	117950.96
7	**Total Additions as per books (G= 3 - 6)**	37.15	2.26	828.37
8	Less: Additions pertaining to other Stages	0	0	0
9	**Net Additions pertaining to instant project/Unit/Stage**	37.15	2.26	828.37
10	Less: Exclusions (items not allowable / not claimed)	0.00	0.00	0.00
11	**Net Additional Capital Expenditure**	37.15	2.26	828.37
12	**Less: Un-discharged Liabilities**	3989.96	2520.94	1557.94
13	**Add: Discharges of un-discharged**	101.85	1448.42	1,106.73
14	**Net Additional Capital Expenditure Claimed (on cash basis)**	50369.19	86338.74	118328.11

Note: Reason for exclusion of any expenditure shall be given in clear terms.

(Petitioner)

Statement showing items/assets/works claimed under Exclusions:
Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED

PART-II
FORM- 9D

Name of the Generating Station COD : KOPILI GENERATING UNIT

S. No.	Head of Work / Equipment	ACE Claimed under Exclusion				Justification
		Accrual basis	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3	
(1)	(2)	(3)	(4)	(5=3-4)	(6)	(7)
NIL						

(Petitioner)

Note: 1. Exclusions claimed on assets not allowed in Tariff should be supported by the specific reference of Commission Order date, Petition No., amount disallowed, etc.
2. For inter unit transfer, nature of transfer i.e. temporary or permanent should be mentioned. It is to be certified that exclusion sought in receiving station only and not in sending station or in both the station.

(Petitioner)

Name of the Petitioner ; NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

PART-II
FORM- 9E

Statement of Capital cost

(To be submitted for relevant dates and year wise)

(Amount in Rs. Lakh)

S. No.	Particulars	From 20.08.2023 to 02.09.2023			From 03.09.2023 to 11.11.2023			From 12.11.2023 to 31.03.2024		
		Accrual Basis	Un-discharged	Cash Basis	Accrual Basis	Un-discharged	Cash Basis	Accrual Basis	Un-discharged	Cash Basis
(1)	(2)									
A	a) Opening Gross Block Amount as per books (as on COD)	54190.55			67409.01			117950.96		
	b) Amount of IDC in A(a) above	1175.62			2488.98			5471.49		
	c) Amount of FC in A(a) above									
	d) Amount of FERV in A(a) above									
	e) Amount of Hedging Cost in A(a) above									
	f) Amount of IEDC in A(a) above	4634.26			9382.93			15470.47		
B	a) Addition in Gross Block Amount during the period (Direct purchases)	37.15			2.355			828.37		
	b) Amount of IDC in B(a) above	0			0					
	c) Amount of FC in B(a) above									
	d) Amount of FERV in B(a) above									
	e) Amount of Hedging Cost in B(a) above									
	f) Amount of IEDC in B(a) above	0			0					
C	a) Addition in Gross Block Amount during the period (Transferred from CWIP)	0.00			0.00			0.00		
	b) Amount of IDC in C(a) above	0.00			0.00			0.00		
	d) Amount of FC in C(a) above									
	e) Amount of FERV in C(a) above									
	f) Amount of Hedging Cost in C(a) above									
	g) Amount of IEDC in C(a) above	0.00			0.00			0.00		
D	a) Deletion in Gross Block Amount during the period									
	c) Amount of IDC in D(a) above									
	d) Amount of FC in D(a) above									
	e) Amount of FERV in D(a) above									
	f) Amount of Hedging Cost in D(a) above									
	g) Amount of IEDC in D(a) above									
E	a) Closing Gross Block Amount as per books	54236.70			67411.27			118779.33		
	c) Amount of IDC in E(a) above	1175.62			2488.98			5471.49		
	d) Amount of FC in E(a) above									
	e) Amount of FERV in E(a) above									
	f) Amount of Hedging Cost in E(a) above									
	g) Amount of IEDC in E(a) above	4634.26			9382.93			15470.47		

(Petitioner)

PART-II
FORM-9F

Statement of Capital works in Progress

(To be given for relevant dates and year wise)

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Rs. In Lakhs

Sl. No.	Particulars	20.08.2023-02.09.2023	03.09.2023-11.11.2023	12.11.2023-31.03.2024
A	a) Opening CWIP as per books	97106.28	64289.32	57814.46
	b) Amount of IDC in A(a) above	4702.48	3940.08	3,804.06
	c) Amount of FC in A(a) above	0.00	0.00	0.00
	d) Amount of FERV in A(a) above	0.00	0.00	0.00
	e) Amount of Hedging Cost in A(a) above	0.00	0.00	0.00
	f) Amount of IEDC in A(a) above	18537.04	14246.10	9965.10
B	a) Addition in CWIP during the period	4741.91	6,697.45	9654.52
	b) Amount of IDC in B(a) above	413.22	1177.33	1043.07
	c) Amount of FC in B(a) above	0.00	0.00	0.00
	d) Amount of FERV in B(a) above	0.00	0.00	0.00
	e) Amount of Hedging Cost in B(a) above	0.00	0.00	0.00
	f) Amount of IEDC in B(a) above	343.32	467.67	1467.45
C	a) Transferred to Gross Block Amount during the period	37058.88	13,172.31	50,539.69
	b) Amount of IDC in C(a) above	1175.62	1313.36	2982.50
	c) Amount of FC in C(a) above	0.00	0.00	0.00
	d) Amount of FERV in C(a) above	0.00	0.00	0.00
	e) Amount of Hedging Cost in C(a) above	0.00	0.00	0.00
	f) Amount of IEDC in C(a) above	4634.26	4748.67	6087.54
D	a) Deletion in CWIP during the period	0	0	0
	b) Amount of IDC in D(a) above	0.00	0.00	0.00
	c) Amount of FC in D(a) above	0.00	0.00	0.00
	d) Amount of FERV in D(a) above	0.00	0.00	0.00
	e) Amount of Hedging Cost in D(a) above	0.00	0.00	0.00
	f) Amount of IEDC in D(a) above	0.00	0.00	0.00
E	a) Closing CWIP as per books	64289.32	57814.46	16929.29
	b) Amount of IDC in E(a) above	3940.08	3804.06	1864.62
	c) Amount of FC in E(a) above	0.00	0.00	0.00
	d) Amount of FERV in E(a) above	0.00	0.00	0.00
	e) Amount of Hedging Cost in E(a) above	0.00	0.00	0.00
	f) Amount of IEDC in E(a) above	14246.10	9965.10	5345.01

Note:
1.Relevant date/s means date of COD of unit/s/station and financial year start date and end date

PART-II
FORM-10

Financing of Additional Capitalisation

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)
Date of Commercial Operation : 12.07.97

	Actual					Admitted				
Financial Year (Starting from COD)[1]	Year 1	Year 2	Year3	Year4	Year 5 & So on	Year 1	Year 2	Year3	Year4	Year 5 & So on
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Amount Capitalized in Work/Equipment										
Financing Details										
Loan-1										
Loan-2										
Loan-3 and so on										
Total Loan[2]										
Equity										
Internal Resources										
Others (Pl. specify)										
Total										

NOT APPLICABLE

Note:

(Petitioner)

PART-II
FORM-11

Calculation of Depreciation

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDRO POWER STA' 200MW

(Amount in Rs. Lakh)

Sl. No.	Name of the Assets [1]	RESIDUAL VALUE OF OLD ASSETS AS ON 31.07.2023	Gross Block as on 20.08.2023 (UNIT-IV)	Gross Block as on 03.09.2023 (UNIT-III)	Gross Block as on 12.11.2023 (UNIT-II)	Grioss block as on 31.03.2024	Gross Block as on03.05.2024 (UNIT-I) CWP CAPITALISED	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for each year up to 20.08.2023 (UNIT-IV)	Depreciation Amount for each year up to 03.09.2023 (UNIT-III)	Depreciation Amount for each year up to 12.11.23 (UNIT-II)	Depreciation Amount for each year up to 31.03.2024
	1	2	3	4	5	6	7	8	9=Col.3 X Col.8	10=Col.4 X Col.8	11=Col.5 X Col.8	12=Col.6 X Col.8
1	Leasehold Land	1614.91	1614.91	1614.91	1614.91	1614.91		3.34%	53.94	53.94	53.94	53.94
2	Roads, bridges, culverts & helipads	107.53	107.53	107.53	107.53	107.53		3.34%	3.59	3.59	3.59	3.59
3	Main Plant Buildings	2701.25	3096.96	3096.96	3101.40	3170.20		3.34%	103.44	103.44	103.59	105.89
4	Other Buildings	1112.04	1281.71	1281.71	1281.71	1281.71		3.34%	42.81	42.81	42.81	42.81
5	Water supply, drainage & sewerage	29.71	29.71	29.71	29.71	29.71		5.28%	1.57	1.57	1.57	1.57
6	Railway siding	6.65	6.65	6.65	6.65	6.65		5.28%	0.35	0.35	0.35	0.35
7	Dam, Dyke, Reservoir & Other Hydraulic W	6941.72	23006.85	23006.85	60405.15	60405.15		5.28%	1214.76	1214.76	3189.39	3189.39
8	Plant and machinery	321.756	23995.34	37187.65	50304.62	50959.91		5.28%	1266.95	1962.45	2656.08	2691.68
9	Furniture and fixtures	25.79	36.27	36.27	36.27	40.29		6.33%	2.42	2.42	2.42	2.55
10	Other Office Equipments	79.56	91.55	91.55	91.55	91.56		6.33%	5.80	5.80	5.80	5.80
11	EDP, WP machines & SATCOM equipment	175.79	231.00	233.25	233.25	244.62		15.00%	34.65	34.99	34.99	36.69
12	Vehicles including speedboats	177.33	177.33	177.33	177.33	177.33		5.28%	9.36	9.36	9.36	9.36
13	Construction equipment	18.46	179.04	179.04	179.04	179.04		5.28%	9.45	9.45	9.45	9.45
14	Electrical installations	91.29	156.24	156.24	156.24	156.24		5.28%	8.25	8.25	8.25	8.25
15	Communication equipment	35.07	40.83	40.83	40.83	62.62		6.33%	2.59	2.58	2.58	3.96
16	Hospital equipment	9.20	9.20	9.20	9.20	9.20		5.28%	0.49	0.49	0.49	0.49
17	Software	0.71	0.71	0.71	0.71	0.71		15.00%	0.11	0.11	0.11	0.11
18	Other Equipments	116.37	137.30	137.30	137.30	152.34		5.28%	7.25	7.25	7.25	8.04
19	Low Value Assets	34.79	35.50	35.50	35.50	35.53		100.00%	35.50	35.50	35.50	35.53
20	Laboratory and workshop equipment	0.00	0.05	0.05	0.05	54.08		5.28%	0.00	0.00	0.00	2.86
	TOTAL	16494.72	54236.70	67411.27	117950.96	118779.32			2803.28	3499.11	6167.52	6211.31
	Weighted Average Rate of Depreciation (%)		5.17%	5.19%	5.23%	5.23%						

Petitioner

Statement of Depreciation

PART-II
FORM-12

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

S. No.	Particulars	From 20.08.2023 to 02.09.2023	From 03.09.2023 to 11.11.2023	From 12.11.2023 to 31.03.2024
(1)	(2)	(3)	(4)	(5)
1.	Opening Capital Cost	54199.55	50369.19	66338.74
2.	Closing Capital Cost	50369.19	66338.74	118328.11
3.	**Average Capital Cost**	52284.37	58353.97	92333.43
4.	Freehold land*			
5.	Rate of depreciation	0.05	0.05	0.05
6.	Depreciable value	47055.93	52516.57	83100.06
7.	Balance useful life at the beginning of the period			
	Cumulative Depreciation upto previous year		103.37	686.94
8.	Remaining depreciable value			
9.	**Depreciation (for the period)**	103.37	583.57	1860.11
10.	**Depreciation (annualized)**	2702.37	3051.26	4828.38
11.	Cumulative depreciation at the end of the period	103.37	686.94	2547.06
12.	Less: Cumulative depreciation adjustment on account of un-discharged liabilities deducted as on 01.04.2009			
13.	Less: Cumulative depreciation adjustment on account of de- capitalisation	0.00	0.00	0.00
14.	Net Cumulative depreciation at the end of the period	103.37	686.94	2547.06

1. In case of details of FERV and AAD, give information for the applicable period.

(Petitioner)

Calculation of Weighted Average Rate of Interest on Actual Loans

PART-II
FORM- 13

Name of the Company : North Eastern Electric Power Corporation Ltd.
Name of the Power Station : KOPILI 200 MW

(Amount in lacs)

Sl. No.	Particulars	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2032-33	2033-34	2034-35
1	*2*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*
1	**HDFC Bank ,Long Term Loan**													
	Gross loan - Opening			0.00	20000.00	20000.00	20000.00	20000.00	20000.00	20000.00	20000.00			
	Cumulative repayments of Loans upto previous year			0.00	0.00	600.00	3000.00	5400.00	8200.00	12200.00	16400.00			
	Net loan - Opening			0.00	20000.00	19400.00	17000.00	14600.00	11800.00	7800.00	3600.00			
	Add: Drawal(s) during the Year			20000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	Less: Repayment (s) of Loans during the year			0.00	600.00	2,400.00	2,400.00	2800.00	4,000.00	4,200.00	3,600.00			
	Net loan - Closing			20000.00	19400.00	17000.00	14600.00	11800.00	7800.00	3600.00	0.00			
	Average Net Loan			10000.00	19700.00	18200.00	15800.00	13200.00	9800.00	5700.00	1800.00			
	Rate of Interest on Loan on annual basis			8.85%	8.24%	8.24%	8.24%	8.24%	8.24%	8.24%	8.24%			
	Interest on loan			1618.28	1623.28	1499.68	1301.92	1087.68	807.52	469.68	148.32			
1	**SBI ,Rupee Term Loan**													
	Gross loan - Opening	0	28000.00	80000.00	80000.00	80000.00	80000.00	80000.00	80000.00	80000.00				
	Cumulative repayments of Loans upto previous year	0	0.00	0.00	2000.00	10000.00	18000.00	28000.00	44000.00	62000.00				
	Net loan - Opening	0.00	28000.00	80000.00	78000.00	70000.00	62000.00	52000.00	36000.00	18000.00				
	Add: Drawal(s) during the Year	28000.00	52000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
	Less: Repayment (s) of Loans during the year	0.00	0.00	2000.00	8,000.00	8,000.00	10,000.00	16,000.00	18,000.00	18,000.00				
	Net loan - Closing	28000.00	80000.00	78000.00	70000.00	62000.00	52000.00	36000.00	18000.00	0.00				
	Average Net Loan	14000.00	54000.00	79000.00	74000.00	66000.00	57000.00	44000.00	27000.00	9000.00				
	Rate of Interest on Loan on annual basis	6.65%	8.00%	8.20%	8.40%	8.40%	8.40%	8.40%	8.40%	8.40%				
	Interest on loan	801.06	3489.41	8496.45	6216.00	5544.00	4788.00	3696.00	2268.00	756.00				
3	**Total Loan**													
	Gross loan - Opening	0.00	28000.00	80000.00	100000.00	100000.00	100000.00	100000.00	100000.00	100000.00	20000.00			
	Cumulative repayments of Loans upto previous year	0.00	0.00	0.00	2000.00	10600.00	21000.00	33400.00	52200.00	74200.00	16400.00			
	Net loan - Opening	0.00	28000.00	80000.00	98000.00	89400.00	79000.00	66600.00	47800.00	25800.00	3600.00			
	Add: Drawal(s) during the Year	28000.00	52000.00	20000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	Less: Repayment (s) of Loans during the year	0.00	0.00	2000.00	8600.00	10400.00	12400.00	16800.00	22000.00	22200.00	3600.00			
	Net loan - Closing	28000.00	80000.00	98000.00	89400.00	79000.00	66600.00	47800.00	25800.00	3600.00	0.00			
	Average Net Loan	14000.00	54000.00	89000.00	93700.00	84200.00	72800.00	57200.00	36800.00	14700.00	1800.00			
	Interest on loan	801.06	3489.41	10114.73	7839.28	7043.68	6089.92	4783.68	3075.52	1225.68	148.32			
	Weighted average Rate of Interest on Loans	**5.72%**	**6.46%**	**11.36%**	**8.37%**	**8.37%**	**8.37%**	**8.36%**	**8.36%**	**8.34%**	**8.24%**			

(Petitioner)

(Petitioner)

PART-II
FORM-13A

Calculation of Interest on Normative Loan

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

(Amount in Rs. Lakh)

Sl. No.	Particulars	20.08.2023-02.09.2023	03.09.2023-11.11.2023	12.11.2023-31.03.2024
1	*2*			
1	**Gross Normative loan – Opening**	37939.69	47186.31	82565.67
	Cumulative repayment of Normative loan upto previous year	0.00	103.37	686.94
	Net Normative loan – Opening	37939.69	47082.94	81878.72
	Add: Increase due to addition duringthe year / period	26.01	1.58	579.86
	Less: Decrease due to de-capitalisation during the year / period	0.00	0.00	0.00
	Less: Decrease due to reversal during the year / period	2778.55	1764.66	1090.56
	Add: Increase due to discharges duringthe year / period	71.29	1013.89	774.71
	Repayment (s) of Normative Loan during the year	103.37	583.57	1860.11
	Net Normative loan - Closing	35155.06	45750.18	80282.62
	Average Normative loan	36547.37	46416.56	81080.67
	Weighted average rate of interest	11.36%	11.36%	11.36%
	Interest on Loan	4153.56	5275.18	9214.71
	Interest on Loan for the period	158.88	1008.91	3549.93
		14	70	141

(Petitioner)

PART-II
FORM-13B

Calculation of on Working Capital

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

(Amount in Rs. Lakh)

Sl. No.	Particulars	20.08.2023-02.09.2023	03.09.2023-11.11.2023	12.11.2023-31.03.2024
1	*2*	*3*	*4*	*5*
1	O & M Expenses (1 month O&M & security expenses)	7.10	43.40	156.32
2	Maintenance Spares (15% of O&M & Security Expenses)	12.78	78.13	281.38
3	Receivables (45 days of AFC)	59.64	367.49	1278.03
4	Total Working Capital	79.52	489.02	1715.73
5	Rate of Interest	12.15%	12.15%	12.15%
6	Interest on Working Capital for the period	9.66	59.42	208.46

	20.08.2023-02.09.2023	03.09.2023-09.11.2023	10.11.2023-31.03.2024
Security Expenses	0	0	0

(Petitioner)

PART-II
FORM-13C

Non-Tariff Income

Name of the Hydro Asset: KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

S.No.	Parameters	20.08.2023-02.09.2023	03.09.2023-11.11.2023	12.11.2023-31.03.2024
(1)	(2)	(4)	(5)	(6)
1.	Income from rent of land or buildings			
2.	Income from sale of scrap	NOT APPLICABLE		
3.	Income from advertisements			

Note: To be submitted at the time of truing up

(Petitioner)

PART-II

FORM-13D

Incidental Expenditure during Construction

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDRO ELECTRIC PLANT

Sl. No.	Parameters	Upto Schedule COD	Up to actual COD(03.06.2024)
A	Expenses:		
1	Employees' Benefits Expenses		10,009.16
2	Finance Costs & IDC		8,045.55
3	Water Charges		0.00
4	Communication Expenses		0.00
5	Power Charges		349.27
6	Other Office and Administrative Expenses		3,711.71
7	Others (see below)		7,249.92
8	Other Pre-Operating Expenses		0.00
	Total Expenses		**29365.61**
1	Less: Other income		176.78
2	Less: Income from sale of tenders		0.00
3	Less: Income from guest house etc		90.98
4	Less: Income recovered from Contractors		0.00
5	Less: Interest on Deposits		0.76
6	Less Infirm Power		307.95
7	total Income		576.47
	Net IEDC (Including IDC)		**28789.14**

PETITIONER

OTHER EXPENSES CAPITALISED	Amount
Roads & buildings	1,156.43
Power house	4,140.83
Others	463.67
Depreciation	186.19
Corporate Office/Regional Office Expenses	1,302.79
	7,249.92

PART-II
FORM-14

Draw Down Schedule for Calculation of IDC & Financing Charges

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : Kopili Hydro Electric Power Plant (4 x 50 MW)
COD 03.06.2024

Rs. In Lakhs

Sl.	Draw Down	Quarter 1			Quarter 2 (2022-23)			Quarter 3 (2021-22)		
	Particulars	Quantum in Foreign currency	Exchange Rate on draw down date	Amount in Indian Rupee (₹ in lakh)	Quantum in Foreign currency	Exchange Rate on draw down date	Amount in Indian Rupee (₹ in lakh)	Quantum in Foreign currency	Exchange Rate on draw down date	Amount in Indian Rupee (₹ in lakh)
1	**Loans**									
1.1	**Foreign Loans**									
1.1.1	**Foreign Loan 1**			Not Applicable						
	Draw down Amount									
	IDC									
	Financing charges									
	FERV									
	Hedging Cost									
1.1	**Total Foreign Loan**			Not Applicable						
	Draw down Amount									
	IDC									
	Financing charges									
	FERV									
	Hedging Cost									
1.2	**Indian Loans**									
1.2.1	**HDFC Bank ,Long Term Loan**									
	Draw down Amount						20,000.00			
	IDC									
	Financing charges									
1.2.2	**State Bank Of India ,Rupee Term Loan**									
	Draw down Amount									80,000.00
	IDC									
	Financing charges									
1.2	**Total Indian Loans**									
	Draw down Amount						**20,000.00**			**80,000.00**
	IDC									
	Financing charges									
1	**Total of Loans drawn**						**20,000.00**			**80,000.00**
	IDC									
	Financing charges									
	FERV									
	Hedging Cost									
2	**Equity**									
2.1	**Foreign equity drawn**									
2.2	**Indian equity drawn**									
	Total equity deployed									

Note:
1. Drawl of debt and equity shall be on pari-passu basis quarter wise to meet the commissioning schedule. Drawl of higher equity in the beginning is permissible
2. Applicable interest rates including reset dates used for above computation may be furnished separately
3. In case of multi-unit project details of capitalisation ratio used to be furnished.
4. Detailed calculation of IDC (Actual drawl and repayment dates and amount, rates of interest, etc.) should be furnished.

PETITIONER

PART-II
FORM-14A

Actual Cash Expenditure

Name of the Petitioner : **NORTH EASTERN ELECTRIC POWER CORPORATION LTD.**
Name of the Generating Station : **KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)**
COD

(Amount in Rs Lakh)

Particulars	Quarter-I	Quarter-II	Quarter-III	Quarter-n (COD)
1	2	3	4	5
Expenditure towards Gross Block				
Add:expenditure towards CWIP				
Add:Capital Advances,if any.				
Less:Undischarged liabilities (included above)		NOT APPLICABLE		
Add/Less: Others				
Payment to contractors / suppliers towads capital assets				
Cummulative payments				

Note: If there is variation between payment and fund deployment justification need to be furnished

(Petitioner)

PART-II
FORM-15A

Design energy and peaking capability (month wise)- ROR with Pondage/Storage type new stations

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)
COD

Generating Company --KOPILI GENERATING UNIT----------

Name of Hydro-electric Generating Station : KOPILI HYDRO POWER STATION----------

Installed Capacity : No of units X MW = 4 X 50

Month		Design Energy * (MUs)	MW Continuous *
April	I	4.25	17.81
	II	2.48	10.42
	III	3.06	12.84
May	I	4.63	19.41
	II	6.28	26.34
	III	23.68	90.25
June	I	27.84	116.7
	II	40.97	171.75
	III	43.92	184.12
July	I	47.5	199.14
	II	47.18	199.79
	III	49.85	200
August	I	45.32	200
	II	45.32	200
	III	49.85	200
September	I	45.32	200
	II	44.75	187.6
	III	44.65	187.19
October	I	44.54	186.7
	II	44.47	186.44
	III	40.08	152.76
November	I	22.58	94.68
	II	22.6	94.74
	III	24.52	102.81
December	I	22.65	94.95
	II	22.43	94.03
	III	25.16	95.89
January	I	22.82	95.66
	II	22.95	96.21
	III	25.58	97.48
February	I	23.2	97.27
	II	17.19	72.06
	III	6.17	32.34
March	I	7.12	29.83
	II	7.44	31.18
	III	15.43	58.81
TOTAL		993.78	

*As per DPR / TEC of CEA vide Letter File No.CEA-HY-12-33/2/2020-HPA Division dated 05.03.2021

(Petitioner)

Design energy and MW Continuous (month wise) - RORtype stations

PART-II
FORM-
15B

Name of the Petitioner: NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station: KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Generating Company NORTH EASTERN ELECTRIC POWER CORPORATION LTD.			
Name of Hydro-Electric Generating Station: KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)			
Installed Capacity: No of Units X MW=4X50=200 MW			
Month		Design Energy* (MUs)	Designed Peaking Capability (MW)*
April	I		NOT APPLICABLE
	II		
	III		
May	I		
	II		
	III		
June	I		
	II		
	III		
July	I		
	II		
	III		
August	I		
	II		
	III		
September	I		
	II		
	III		
October	I		
	II		
	III		
November	I		
	II		
	III		
December	I		
	II		
	III		
January	I		
	II		
	III		
February	I		
	II		
	III		
March	I		
	II		
	III		
Total			

*As per DPR/TEC of CEA dated.....

Note :

Specify the number of peaking hours for which station has been designed.

(Petitioner)

Statement of Liability Flow

PART-II
FORM-16

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Amount in ₹ lakh

Party	Asset / Work	Original Liability	Liability as on 20.08.2023	Liability as on 03.09.2023	Liability as on 12.11.2023	Liability as on 31.03.2024	Discharges as on 20.08.2023	Discharges as on 03.09.2023	Discharges as on 12.11.2023	Discharges as on 31.03.2024	Reversal year-wise
1	2	3	4	5	6	7	4	5	6	7	8
a) For assets eligible for normal RoE											
BISWAJYOTI HOJAI			-37,141.00	-37,141.00	-37,141.00	0.00				-37,141.00	
EASTER LAPASAM			-155,809.00	0.00	0.00	0.00		155,809.00			
RONO BHADRA HARPU			-84,548.00	0.00	0.00	-89,479.00		84,548.00			
RANJIT TIMUNG			-91,612.00	0.00	0.00	0.00		91,612.00			
ROTHUNGA NAMPUI			-122,309.00	-122,305.00	-122,305.00	-122,109.00					
STERLING & WILSON			-113,286.00	-6,789,443.00	-113,286.00	-113,286.00			6,676,157.00		
ARADHANA AGENCY			-165,930.00	-165,930.00	-165,930.00	-165,910.00					
ASSAM PETROLEUM LTD			-556,800.00	-556,800.00	-556,800.00	-556,800.00					
KINDRITZ HYDRO PVT LT			-164,983,789.00	-159,418,536.00	-128,655,077.00	-31,591,864.00			30,763,459.00	97,063,221.00	
APR HYDRO PVT LTD			-10,180,349.00	-10,180,349.00	0.00	0.00			10,180,349.00		
ARGUTAS VERITAS IND			-1,395,051.00	-1,395,051.00	-1,395,051.00	-1,395,051.00					
ASIAN PAINTS PRG PVT			-971,439.00	-971,439.00	-971,439.00	-971,439.00					
ARDCL DEPOSIT WORKS			-4,429,588.00	0.00	0.00	0.00		4,429,588.00			
BHEL-KOLKATA			-34,375,278.20	-34,292,271.20	-32,044,335.20	-27,089,712.20			2,247,936.00	4,954,623.00	
BHEL-GUWAHATI			-7,681,520.00	-7,681,520.00	-7,681,520.00	-7,681,520.00					
BRENSING ENGTI			-33,312.00	0.00	0.00	0.00		33,312.00			
BIJONA BODO			-49,576.00	-49,576.00	-49,576.00	-99,576.00					
COMPLAIN TANGJANG			-83,125.00	0.00	0.00	0.00		83,125.00			
DEBASHIS DAOLAGUPU			-2,371,010.00	-1,781,906.00	-1,781,906.00	-1,400,729.00		589,104.00		381,177.00	
DARWING LAPASAM			-43,382.00	-43,382.00	-43,382.00	-43,382.00					
DALLAT PRASAD AGARWAL			-2,669,194.00	-2,669,194.00	-2,669,194.00	-2,669,194.00					
E.COMP TECHNOLOGIES			-10,074,000.00	-10,074,000.00	-10,074,000.00	-10,074,000.00					
GUWAHATI MOTORS			-27,505.00	-27,505.00	-27,505.00	-27,505.00					
HEMA TYNGNAN			0.00	0.00	0.00	-430,881.00					
HYDRO MAGUS PVT LTD			-1,752,300.00	-1,752,300.00	-1,752,300.00	-1,752,300.00					
HOICHUNGLIEN KHELMA			-119,546.00	-119,546.00	-119,546.00	-119,546.00					
JOYSING TIWUNG			-616,796.00	-616,796.00	-616,796.00	0.00				616,796.00	
JOYTHON LONSMALAI			-229,831.00	-229,831.00	-229,831.00	-1.00				229,830.00	
KRISHNA PRASAD JOSHI			394.00	194.00	394.00	0.00					
KHAGENDRA HOJAI			-919,746.00	-919,746.00	-890,157.00	-920,157.00			29,591.00		
KONEGRANES ADENAG PV			-79,650.00	-79,650.00	-79,650.00	-1,445,243.00					
KRISHNA GENERATOR SE			-4,575,804.00	-4,075,804.00	-4,075,804.00	-4,575,804.00					
KARISHMA BEYPI			-221,903.00	-221,903.00	-221,903.00	0.00				221,903.00	
LIPI DATA SYSTEMS LT			0.00	0.00	0.00	0.00					
LAXMI ELECTRICALS				0.00	0.00	0.00					
M/S A.RUDJ CIRCULAR P			-146,961.00	-146,961.00	-146,961.00	-146,961.00					
MENOKA DEVI JOSHI			-48,949.00	-48,949.00	-48,949.00	-48,949.00					

HARI SRI PASUPA			-162,326.00	0.00	0.00	0.00		162,326.00			
NARAYAN BAHADUR CHET			-136,954.00	-136,954.00	-136,954.00	-136,954.00					
NARAYAN UPADHYA			-4,081.00	0.00	0.00	0.00		4,081.00			
OM METALS INFRAPROJE			-3,330,540.00	-3,330,540.00	-3,330,540.00	-3,330,540.00					
PRANAB KUMAR DEHINGI				0.00	0.00	0.00					
PES ENGINEERS PVT. L			-81,606,954.00	-94,002,574.30	-11,593,197.00	-17,339,445.00			50,409,377.00		
POWER GRID CORPORATI			-2,803,680.00	-2,803,680.00	-2,803,680.00	-2,803,680.00					
PRAPTI DHRADEDE			-49,923.00	-49,923.00	-49,923.00	-49,923.00					
ROBINSON TERON			0.00	0.00	0.00	0.00					
RONA BHADRA HASNU			-222,482.00	-222,482.00	-222,482.00	-222,482.00					
SUDAM JOSHI			-481,746.00	-481,746.00	-481,746.00	-481,746.00					
SUPTD. OF POLICE HAF			-13,231,606.00	-9,286,600.30	-9,286,600.00	-9,286,600.00		3,908,893.00			
SUPER SERVICE STATIO				-55,615.80	0.00	0.00			55,615.80		
SUDARSHNA COOLING SE			-1,726,144.00	-1,726,144.00	-1,726,144.00	-1,726,144.00					
SANJIB CHETRI			-47,336.00	-47,336.00	-47,336.00	-47,336.00					
SUMIT BHARMA			-95,347.00	0.00	0.00	0.00		95,347.00			
STERLITE POWER			-8,568.00	-8,568.00	-8,568.00	-8,568.00					
SUGRIVA PRASAD VARMA			-216,000.00	-216,000.00	-216,000.00	-216,000.00					
TESLA TRANSFORMER			-717,500.00	-717,500.00	-717,500.00	-717,500.00					
TECHNO ELECTRICAENGI			-4,159,853.00	-4,159,853.00	-4,159,853.00	-4,865,299.00					
VOITH HYDRO PVT LTD			-10,826,376.00	-10,826,376.00	-10,826,376.00	-10,826,376.00					
MUHAR MANI			0.00	0.00	0.00	0.00					
HANUMENDRA HIJAN			-85,941.00	-85,941.00	-85,941.00	-85,941.00					
S.M. Corporation Ltd			-10,952.00	-10,952.00	-10,952.00	-10,952.00					
RANSING RONGHI				0.00	0.00	0.00					
SANJIV CHANDA			-62,458.00	0.00	0.00	0.00		62,458.00			
Central Power Relear			-313,200.00	0.00	0.00	0.00		313,200.00			
VOITH HYDRO (P) LTD						-5,419,106.00					
SUPER ENGINEERING WO			-6,494.00	-6,494.00	-6,494.00	-6,494.00					
RUCHIYA CONTROLS PVT			-7,593,852.00	-7,593,852.00	-7,593,852.00	-415,852.00				7,178,000.00	
RAMSING RONGHI			-2,779,476.00	-2,635,197.00	-2,635,197.00	-2,635,197.00		144,279.00			
R.R.ENGINEERING & CO			-349,249.00	-349,249.00	-349,249.00	-349,249.00					
Gurudatt Enterprises			0	0.00	0.00	0.00					
Loknath & Company			-4,676,647.00	-4,676,647.00	-1,245,694.00	-1,245,694.00			3,430,953.00		
POWERGEAR LIMITED			-6,265,741.00	-7,194,133.00	0.00	0.00			7,194,133.00		
RC Engineering Serv			-1,874,160.00	-1,874,160.00	0.00	0.00			1,874,160.00		
IT ONLINE						-627,956.00					
NACS CLEANTECH						-178,000.00					
			-362,593,133.20	-396,935,958.20	-252,094,228.20	-155,794,378.20	0.00	10,184,689.00	144,841,730.00	110,672,693.00	

(Petitioner)

Page

PART II
FORM 17

Operation & Maintenance Expenses

In case of Hydro generating station declared under commercial operation on or after 01.04.2019

Amount in ₹ lakh

	20.08.2023-02.09.2023	03.09.2023-11.11.2023	12.11.2023-31.03.2024
Total capital expenditure upto cutoff date (a)	50369.19	66338.74	116328.11
R&R expenditure (b)	0	0	0
IDC & IEDC (C)	5809.88	11871.91	20941.96
Capital Cost considered for O&M expense (d)=(a)-(b)-(c)	44559.31	54466.83	97386.15
First year annualize O&M experse @ 5% of above (e)=5% of (d)	2227.97	2723.34	4869.31
O&M Expense for the period	85.22	520.86	1875.88
O&M expense for next year @ 5.7% of above (f) =5.7% of (e)	0	0	0
Additional O&M expenses due to 7th Pay Commission Wage Revision	0	0	0
Additional O&M expenses due to Minimum Wage Revision	0	0	0
Additional O&M expenses due to Goods & Service Tax (GST)	0	0	0
	14	70	141

Note:Additional O&M expenses with supporting documents and computations to be provided for respective year of Tariff Period.

(Petitioner)

PART II
FORM 18

Details of Statutory Charges (If Applicable)

Name of the Petitioner: North Eastern Electric Power Corporation LTD

Name of the Generating Station: KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Sl. No	Particulars	Unit Rate	No of Units	Amount Claimed
1	Electricity Duty			
2	Water Cess		NA	
3				

Petitioner

PART-II
FORM- 1

Summary of Tariff

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)
Region - North Eastern Region, State: Assam, District: Dima Hasao.
COD 03.06.2024

Rs. In Lakhs

S. No.	Particulars	01.04.2024-01.06.2024	03.06.2024-31.03.2025	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7	8
1.1	Depreciation	865.76	4808.07	5827.17	5827.17	5827.17	5827.17
1.2	Interest on Loan	1157.27	6217.69	7092.20	6604.62	6115.55	5624.40
1.3	Return on Equity	1264.59	6979.72	8459.27	8459.27	8459.27	8459.27
1.4	Interest on Working Capital	87.06	474.37	590.42	586.62	583.54	601.22
1.5	O & M Expenses	840.57	4449.12	5671.38	5981.61	6308.80	6653.89
	Annual Fixed Charges	4216.06	22928.96	27630.44	27459.28	27304.13	27165.95

Note: Details of calculations, considering equity as per regulation, to be furnished.

(Petitioner)

Annex - III

Statement Showing Claimed Capital Cost (A+B)

PART-II
FORM- 1(I)

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Rs. in Lakh

S. No.	Particulars	01.04.2024-02.06.2024	03.06.2024-31.03.2025	2025-26	2026-27	2027-28	2028-29
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Opening Capital Cost	118779.32	136966.85	137727.74	137727.74	137727.74	137727.74
2	Add: Addition during the year/period	0.00	760.89	0.00	0.00	0.00	0.00
3	Less: Decapitalisation during the year/period	0.00	0.00	0.00	0.00	0.00	0.00
4	Less: Reversal during the year/period	1557.94	1792.53	1792.53	1792.53	1792.53	1792.53
5	Add: Discharges during the year/period	1106.73	99.75	99.75	99.75	99.75	99.75
6	Closing Capital Cost	118328.10	136034.96	136034.96	136034.96	136034.96	136034.96
7	Average Capital Cost	118553.71	136500.91	136881.35	136881.35	136881.35	136881.35

Statement showing claimed capital cost eligible for R.o.E at normal rate (A)

Rs. in Lakh

S. No.	Particulars	01.04.2024-02.06.2024	03.06.2024-31.03.2025	2025-26	2026-27	2027-28	2028-29
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Opening Capital Cost	118779.32	136966.85	137727.74	137727.74	137727.74	137727.74
2	Add: Addition during the year/period	0.00	760.89	0.00	0.00	0.00	0.00
3	Less: Decapitalisation during the year/period	0.00	0.00	0.00	0.00	0.00	0.00
4	Less: Reversal during the year/period	1557.94	1792.53	1792.53	1792.53	1792.53	1792.53
5	Add: Discharges during the year/period	1106.73	99.75	99.75	99.75	99.75	99.75
6	Closing Capital Cost	118328.10	136034.96	136034.96	136034.96	136034.96	136034.96
7	Average Capital Cost	118553.71	136500.91	136881.35	136881.35	136881.35	136881.35

Statement showing claimed capital cost eligible for R.o.E at weighted average rate of interest on actual loan portfolio (B)

in Lakh

Rs. in Lakh

S. No.	Particulars	01.04.2024-02.06.2024	03.06.2024-31.03.2025	2025-26	2026-27	2027-28	2028-29
(1)	(2)	(3)	(4)	(5)			
1	Opening Capital Cost	NIL					
2	Add: Addition during the year/period						
3	Less: Decapitalisation during the year/period						
4	Less: Reversal during the year/period						
5	Add: Discharges during the year/period						
6	Closing Capital Cost						
7	Average Capital Cost						

(Petitioner)

PART-II

FORM- 1(II)

Statement Showing Return on Equity at Normal Rate

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.

Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

COD 03.06.2024

Statement showing Return on Equity at Normal Rate

Rs.in Lakh

S. No.	Particulars	01.04.2024-02.06.2024	03.06.2024-31.03.2025	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	7	8	9
1	Gross Opening Equity (Normal)	35633.80	41090.06	41318.32	41318.32	41318.32	41318.32
2	Less : Adjustment in Equity	0.00	0.00	0.00	0.00	0.00	0.00
3	Adjustment during the year	0.00	0.00	0.00	0.00	0.00	0.00
4	Net Opening Equity (Normal)	35633.80	41090.06	41318.32	41318.32	41318.32	41318.32
5	Add : Increase in equity due to addition during the year / period	0.00	228.27	0.00	0.00	0.00	0.00
6	Less : Decrease due to de-capitalisation during the year / period	0.00	0.00	0.00	0.00	0.00	0.00
7	Less : Decrease due to undischarge/reversal during the year / period	467.38	537.76	537.76	537.76	537.76	537.76
8	Add : Increase due to discharges during the year / period	332.02	29.92	29.92	29.92	29.92	29.92
9	Net closing Equity (Normal)	36498.43	40810.49	40810.49	40810.49	40810.49	40810.49
10	Average Equity (Normal)	36566.11	40950.27	41064.41	41064.41	41064.41	41064.41
11	Rate of ROE	20.600	20.600	22.600	20.600	20.600	20.600
12	Total ROE annualised	7326.619	8435.756	9459.268	8459.268	8459.268	8459.268
13	Total ROE for the period	1264.595	6975.721	9459.268	8459.268	8459.268	8459.268
		63.000	302.000				

Statement showing Return on Equity at Weighted Average Rate of Interest on Actual Loan Portfolio

Rs.in Lakh

S. No.	Particulars	01.04.2024-02.06.2024	03.06.2024-31.03.2025	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	7		
1	Gross Opening Equity (pertaining to Proviso to Regulation 30(2))						
2	Less : Adjustment in Equity						
3	Adjustment during the year						
4	Net Opening Equity (pertaining to Proviso to Regulation 30(2))						
5	Add : Increase due to addition during the year / period						
6	Less : Decrease due to de-capitalisation during the year / period						
7	Less : Decrease due to undischarge/reversal during the year / period						
8	Add : Increase due to discharges during the year / period						
9	Net closing Equity (pertaining to Proviso to Regulation 30(2))						
10	Average Equity (pertaining to Proviso to Regulation 30(2))						
11	Rate of ROE (weighted average rate of interest on actualloan portfolio)						
12	Total ROE						

Note:

1. Adjustment of equity as perProviso to Regulation 18(3) of 2019 Tariff Regulations.
2. With respect to Equity infusion, the Generating Company is required to substantiate with supporting documents such as boards resolution, balance sheet reconciliation statement with balance sheet.

(Petitioner)

PART-II
FORM-2

Details of COD, Type of Hydro station, Normative Annual Plant Availability Factor (NAPAF) & Other normative parameters considered for tariff calculation

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

	Particulars	Unit	Existing 2019-24	01.04.2024-02.08.2024	03.08.2024-31.03.2025	2025-26	2026-27	2027-28	2028-29
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Installed Capacity	MW	200 (4x50 MW)	200 (4x50 MW)					
2	Free power to home state	%	12%	12%					
3	Free power under Local Area development Fund (LADF)								
4	Date of commercial operation (actual/anticipated)								
	Unit - 1		05-07-1988 After RRM on 03/06/2024	Reconstruction, Renovation and Modernisation works,COD on 03/06/24					
	Unit - 2		22-06-1988 After RRM on 12/11/23	After Reconstruction, Renovation and Modernisation,COD on 12/11/23					
	Unit - 3		01-05-1997 After RRM on 03/09/23	After Reconstruction, Renovation and Modernisation,COD on 03/09/23					
	Unit - 4		12-07-1997 After RRM on 20/08/23	After Reconstruction, Renovation and Modernisation,COD on 20/08/23					
5	Type of Station								
	a) Surface / underground		Surface	Surface					
	b) Purely ROR / Pondage / Storage		Storage	Storage					
	c) Peaking / non-peaking		Peaking	Peaking					
	d) No. of hours of peaking		3	3					
	e) Overload capacity (MW) & period		Rated = 4 x 55.5 MW	Rated = 4 x 55.5 MW					
6	Type of excitation								
	a) Rotating exciters on generator								
	b) Static excitation		Static	Static					
7	Design Energy (Annual) [1]	GWh	1186.14		993.8				
8	Auxiliary Consumption including Transformation losses	%	1	1.00					
9	Normative Plant Availability Factor (NAPAF)	%	69		69				
9.1	Maintenance Spares for WC	% of O&M							
9.2	Receivables for WC	in Months							
9.3	Base Rate of Return on Equity	%	17%	17%	17%	17%	17%	17%	17%
9.4	Base Rate of Return on Equity on Add. Capitalization								
9.5	Tax Rate [2]	%							
9.6	Effective Tax Rate [4]								
9.7	SBI Base Rate + 350 basis points as on [3]	%							

1. Month wise 10 - day Design energy figures to be given separately with the petition.
2. Tax rate applicable to the company for the year FY 2018 - 19 should also be furnished.
3. Mention relevant date
4. Effective tax rate is to be computed in accordance with Regulation 31 i.e. actual tax (or advance tax)/ gross income, where gross income refers the profit before tax.

(Petitioner)

Page

PART-II
FORM-3

Salient Features of Hydroelectric Project

Name of the Petitioner : **NORTH EASTERN ELECTRIC POWER CORPORATION LTD.**
Name of the Generating Station : **KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)**

1. Location	
State / Distt.	Assam/Dima Hasao
River	Kopili
2. Diversion Tunnel	
Size, shape	NIL
Length (M)	
3. Dam	
Type	Concrete Gravity
Maximum dam height (M)	36.00 Mtrs
4. Spillway	
Type	OGEE
Crest level of spillway (M)	El. 602.00 Mtrs
5. Reservoir	
Full Reservoir Level (FRL) (M)	El. 609.6 Mtrs
Minimum Draw Down Level (MDDL) (M)	El. 592.99 Mtrs
Live storage (MCM)	110.5
6. De - silting Chamber	
Type	NA
Number and Size	
Particle size to be removed (mm)	
7. Head Race Tunnel	
Size and type	Dia: 4.6 Mtr, Circular
Length (M)	5500.67 Mtr
Design discharge (Cumecs)	70
8. Surge Shaft	
Type	Simple
Diameter (M)	Dia: Riser 10.00 Mtr & Expansion Chamber 20.00 Mtr
Height (M)	103 mtr
9. Penstock / Pressure shafts	
Type	Circular (Steel Lined)
Diameter & Length (M)	Dia: 2.75 Mtr and length 680 Mtr
10. Power House	
Installed capacity (No of units X MW)	4 X 50 MW
Type of turbine	Francis (Vertical Shaft)
Rated Head (M)	331.60 Mtr
Rated Discharge (Cumecs)	17.3
Head at Full Reservoir Level (M)	331.6
Head at Minimum Draw down Level (M)	309.2
MW Capability at FRL	200
MW Capability at MDDL	120
11. Tail Race Tunnel / Channel	
Diameter (M), shape	NA
Length (M)	
Minimum tail water level (M)	
12. Switchyard	
Type of Switch gear	Outdoor
No. of generator bays	4
No. of Bus coupler bays	1
No. of line bays	5
Efficiency (overall) Turbine and generator	90.4

Note : Specify limitation on generation during specific time period (s) on account of restrictions on water use due to irrigation, drinking water, industrial, environmental considerations etc.

(Petitioner)

Details of Foreign loans

(Details only in respect of loans applicable to the project under petition)

Name of the Petitioner: NORTH EASTERN ELECTRIC POWER CORPORATION LTD.

PART-II FORM- 4

Name of the Generating Station: KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Exchange Rate at COD

Exchange Rate as on 31.3.2019

S. No.	Financial Year (Starting from COD)	Year 1				Year 2				Year 3 and so on			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
		Date	Amount (Foreign Currency)	Relevant Exchange Rate	Amount (Rs. Lakh)	Date	Amount (Foreign Currency)	Relevant Exchange Rate	Amount (Rs.Lakh)	Date	Amount (Foreign Currency)	Relevant Exchange Rate	Amount (Rs. Lakh)
	Currency1[1]												
A.1	At the date of Drawl[2]												
2	Scheduled repayment date of principal												
3	Scheduled payment date of interest												
4	At the end of Financial year												
B	In case of Hedging[3]												
1	At the date of hedging						NOT APPLICABLE						
2	Period of hedging												
3	Cost of hedging												
	Currency2[1]												
A.1	At the date of Drawl[2]												
2	Scheduled repayment date of principal												
3	Scheduled payment date of interest												
4	At the end of Financial year												
B	In case of Hedging[3]												
1	At the date of hedging												
2	Period of hedging												
3	Cost of hedging												
	Currency3[1]& so on												
A.1	At the date of Drawl[2]												
2	Scheduled repayment date of principal												
3	Scheduled payment date of interest												
4	At the end of Financial year												
B	In case of Hedging[3]												
1	At the date of hedging												
2	Period of hedging												
3	Cost of hedging												

1. Name of the currency to be mentioned e.g. US$, DM, etc.
2. In case of more than one drawal during the year, Exchange rate at the date of each drawl to be given
3. Furnish details of hedging, in case of more than one hedging during the year or part hedging, details of each hedging are to be given
4. Tax (such as withholding tax) details as applicable including change in rates, date from which change effective etc. must be clearly indicated.

(Petitioner)

Details of Foreign Equity

(Details only in respect of Equity infusion if any applicable to the project under petition)

PART-II
FORM- 4A

Name of the Petitioner: NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station: KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)
Exchange Rate on date/s of infusion

S. No.	Financial Year	Year 1				Year 2				Year 3 and so on			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	[illegible]	(11)	(12)	(13)	(14)
		Date	Amount (Foreign Currency	Relevant Exchange Rate	Amount (Rs. Lakh)	Date	Amount (Foreign Currency	Relevant Exchange Rate	Amount (Rs.	Date	Amount (Foreign Currency)	Relevant Exchange Rate	Amount (Rs. Lakh)
	Currency1[1]												
A.1	At the date of												
2													
3													
	Currency2[1]												
A.1	At the date of												
2													
3													
	Currency3[1]												
A.1	At the date of					NOT APPLICABLE							
2													
3													
	Currency4[1] and so												
A.1	At the date of												
2													
3													

1. Name of the currency to be mentioned e.g. US$, DM, etc.
2. In case of equity infusion more than once during the year, Exchange rate at the date of each infusion to be given

(Petitioner)

PART - II
FORM - 5

Abstract of Admitted Capital Cost for the existing Projects

Name of the Petitioner : **NORTH EASTERN ELECTRIC POWER CORPORATION LTD.**

Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Rs. In Lakhs

	Capital Cost as admitted by CERC	
a)	Capital Cost admitted as on ___01.04.2019_____	
	(Give reference of the relevant CERC Order with Petition No. & Date)	
b)	Foreign Component, if any (In Million US $ or the relevant Currency)	PLANT COMMISSIONED AFTER R&M DURING 2023-24 (UNIT 4, UNIT 3, UNIT 2) AND ON 03.06.2024 (UNIT 1/STATION COD)
c)	Foreign Exchange rate considered for the admitted Capital cost (Rs Lakh)	
d)	Total Foreign Component (Rs. Lakh)	
e)	Domestic Component (Rs. lakh)	
f)	Hedging cost, if any, considered for the admitted Capital cost (Rs Lakh)	
	Total Capital cost admitted (Rs. Lakh) (d+e+f)	

(Petitioner)

Abstract of Capital Cost Estimates and Schedule of Commissioning for the New Projects

PART-II
FORM- 5A

Name of the Petitioner NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station **Kopili Hydro Power Station (4x50 MW)**

New Projects
Capital Cost Estimates

Board of Director/ Agency approving the Capital cost estimates:	Ministry of Power(MoP),Govt of India.			
Date of approval of the Capital cost estimates:	12/2/2004			
	Present Day Cost	**Completed Cost**		
Price level of approved estimates	Projected analysis as on 20.08.2023 UNIT-IV	Projected analysis as on 03.09.2023 -UNIT-III	Projected analysis as on 12.11.2023 -UNIT-II	Projected analysis as on 03.05.2024 -UNIT-I
Foreign Exchange rate considered for the Capital cost estimates				
Foreign Component, if any (In Million US $ or the relevant Currency)				
Domestic Component (Rs. Lakh)				
Capital cost excluding IDC, IEDC, FC, FERV & Hedging Cost (Rs. Lakh)	31928.37	7111.33	41471.89	11387.33
IDC, IEDC, FC, FERV & Hedging Cost				
Foreign Component, if any (In Million US $ or the relevant Currency)				
Domestic Component (Rs. Lakh)	6095.97	6062.03	9070.048	7561.095
Total IDC, IEDC, FC, FERV & Hedging Cost (Rs. Lakh	6095.97	6062.03	9070.048	7561.095
Rate of taxes & duties considered				
Capital cost including IDC, IEDC, FC, FERV & Hedging Cost				
Foreign Component, if any (In Million US $ or the relevant Currency)				
Domestic Component (Rs. Lakh)	38024.34	13173.35	50541.94	18948.42
Capital cost including IDC, IEDC& FC (Rs. Lakh)				
Schedule of Commissioning as per investment approval				
Scheduled COD of Unit - I	Monday, June 3, 2024			
Scheduled COD of Unit - II		12.11.2023		
Scheduled COD of Unit-III			03.09.2023	
Scheduled COD of Unit-IV				20.08.2023
Scheduled COD of last Unit / Station				

Note:
1. Copy of approval letter should be enclosed
2. Details of Capital Cost are to be furnished as per FORM-5B or 5C as applicable
3. Details of IDC & Financing Charges are to be furnished as per FORM-14.

(Petitioner)

Break-up of Capital Cost for New Hydro Power Generating Station

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : Kopili Hydro Power Station

Sl. No.	Item Code	Item Description	Original Cost as approved by Authority/ Investment Approval	Actual Capital Expenditure for UNIT-I- as on 03.06.24	Actual Capital Expenditure for UNIT-II- as on 12.11.23	Actual Capital Expenditure for UNIT-III- as on 03.09.23	Actual Capital Expenditure for UNIT-UNIT-IV-as on 26.09.23	Liabilities/ Provisions - UNIT-I	Liabilities/ Provisions - UNIT-II	Liabilities/ Provisions - UNIT-III	Liabilities/ Provisions - UNIT-IV	Variation UNIT-I	Variation UNIT-II	Variation UNIT-III	Variation UNIT-IV	Reasons For Variation
A		CIVIL AND HM WORKS														
1		DIRECT CHARGES														
i		HYDRO														
	A	Preliminary & Pre-Operative Expenses	798.17	133.58	133.58	133.58	133.58	-	-	-	-	-66.97	-66.97	-66.97	-66.97	
	B	Cost of Land	-	-	-	-	-	-	-	-	-	-	-	-	-	
	C	Civil Works	283.00	50.61	50.61	50.61	50.61	6.26	6.26	6.26	6.26	-14.38	-14.38	-14.38	-14.38	
	J	Power Plant Civil Works	34,426.56	11,891.14	11,891.14	11,891.14	11,891.14	347.80	347.80	347.80	347.80	3,486.31	3,486.31	3,486.31	3,486.31	
	K	Buildings	248.06	33.05	33.05	33.05	33.05	-	-	-	-	-28.97	-28.97	-28.97	-28.97	
	M	Plantation	60.00	-	-	-	-	-	-	-	-	-20.00	-20.00	-20.00	-20.00	
	O	Miscellaneous	900.00	1,104.23	1,104.23	1,104.23	1,104.23	24.97	24.97	24.97	24.97	979.20	979.20	979.20	979.20	
	P	Maintenance during Construction	349.60	20.53	20.53	20.53	20.53	0.49	0.49	0.49	0.49	-66.37	-66.37	-66.37	-66.37	
	Q	Special Tools & Plants	100.00	5.65	5.65	5.65	5.65	-	-	-	-	-19.35	-19.35	-19.35	-19.35	
	R	Communication	2,883.66	414.40	414.40	414.40	414.40	17.65	17.65	17.65	17.65	-288.66	-288.66	-288.66	-288.66	
	X	Environment and Ecology	50.00	-	-	-	-	-	-	-	-	-12.50	-12.50	-12.50	-12.50	
	Y	Losses on stock	87.40	-	-	-	-	-	-	-	-	-21.85	-21.85	-21.85	-21.85	
		TOTAL I-WORKS	39,566.45	13,653.19	13,653.19	13,653.19	13,653.19	397.18	397.18	397.18	397.18	3,927.26	3,927.26	3,927.26	3,927.26	
ii		Establishment Charges	3,192.58	1,586.21	1,586.21	1,586.21	1,586.21	-	-	-	-	788.04	788.04	788.04	788.04	
iii		Tools & Plants	-	-	-	-	-	-	-	-	-	-	-	-	-	
iv		Suspense	-	-	-	-	-	-	-	-	-	-	-	-	-	
v		Receipts and Recoveries (-)	-	-	-	-	-	-	-	-	-	-	-	-	-	
		TOTAL DIRECT CHARGES	43,101.13	15,239.40	15,239.40	15,239.40	15,239.40	397.18	397.18	397.18	397.18	4,715.30	4,715.30	4,715.30	4,715.30	
2		INDIRECT CHARGES		-	-	-	-	-	-	-	-	-	-	-	-	
i		Capitalisation of Abatement of Land revenue	-	-	-	-	-	-	-	-	-	-49.89	-49.89	-49.89	-49.89	
ii		Audit & Accounts etc.	199.54	-	-	-	-	-	-	-	-	-49.89	-49.89	-49.89	-49.89	
		TOTAL INDIRECT CHARGES	199.54	-	-	-	-	-	-	-	-	-49.89	-49.89	-49.89	-49.89	
3		A. TOTAL CIVIL & HM WORKS (1+2)	43,300.67	15,239.40	15,239.40	15,239.40	15,239.40	397.18	397.18	397.18	397.18	4,665.41	4,665.41	4,665.41	4,665.41	
B		Electro-Mechanical Works		-	-	-	-	-	-	-	-	-	-	-	-	
i		Electro-Mechanical Works	36,923.52	11,214.33	11,214.33	11,214.33	11,214.33	675.04	675.04	675.04	675.04	2,512.49	2,512.49	2,512.49	2,512.49	
ii		Audit & Accounts charges	88.31	-	-	-	-	-	-	-	-	-22.08	-22.08	-22.08	-22.08	
iii		Establishment Charges of EM Works	2,099.34	1,287.01	1,287.01	1,287.01	1,287.01	-	-	-	-	762.17	762.17	762.17	762.17	
		B. Total Electro-Mechanical Works	39,111.17	12,501.34	12,501.34	12,501.34	12,501.34	675.04	675.04	675.04	675.04	3,252.58	3,252.58	3,252.58	3,252.58	
C		Insurance Cost against Residual Assets of the Plant	-	386.76	386.76	386.76	386.76	-	-	-	-	386.76	386.76	386.76	386.76	
D		Hard Cost (A+B+C)	82,411.84	28,127.50	28,127.50	28,127.50	28,127.50	1,072.21	1,072.21	1,072.21	1,072.21	8,304.76	8,304.76	8,304.76	8,304.76	
E		IDC & FC	5,397.00	1,993.25	1,993.25	1,993.25	1,993.25	-	-	-	-	644.00	644.00	644.00	644.00	
F		Total Project Cost(D+E)	87,808.84	30,120.75	30,120.75	30,120.75	30,120.75	1,072.21	1,072.21	1,072.21	1,072.21	8,948.76	8,948.76	8,948.76	8,948.76	
G		(-) Less Receipt:		-	-	-	-	-	-	-	-	-	-	-	-	
		a) Sale from Infirm Power	-	245.11	214.53	0.00	0.00	-	-	-	-	-245.11	-214.53	0.00	0.00	
		b) Sale of Scrap	-	744.75	744.75	744.75	744.75	-	-	-	-	-744.75	-744.75	-744.75	-744.75	
H		Net Total (F-G)	87,808.84	29,130.89	29,161.47	29,376.00	29,376.00	1,072.21	1,072.21	1,072.21	1,072.21	7,959.40	7,989.48	8,204.01	8,204.01	

DETAILS AT ANNEXURE-1

(Petitioner)

Break-up of Capital Cost for Plant & Equipment (New Projects)

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
(Abstract of Revised Cost Estimates of Electro Mechanical Works)
(At MAY-2024 Price Level)

PART II
FORM 5C

Sl. No	Item	Original Cost as approved by Authority / Investment Approval	Cost on Actual / anticipated COD (1)	Variation	Reasons for Variation *
		Total Cost	Total Cost	Total Cost	
1	Preliminary - Annex-S(1)	282.23	1,383.15	1,100.92	
	GST on Preliminary	50.80	249.21	198.41	
	Subtotal (Preliminary)	333.03	1,632.37	1,299.34	
2	Generating Plant and Auxiliaries		-	-	
	a) Generating Units and Associated Accessories - Annex - S(2)	20,318.41	20,820.49	502.08	
	b) Auxiliary electrical equipment for power station -Annex-S(3)	3,791.67	5,581.22	1,789.55	
	c) Auxiliary Mechanical equipment and services for power station - Annex-S(4)	1,600.81	2,263.47	662.66	
	GST as applicable on 2(a), (b) & (c)	4,628.97	5,153.75	524.78	
	d) Transportation, handling and Insurance charges	808.21	625.83	-182.38	
	GST as applicable on 2(d)	145.48	110.41	-35.07	
	e)Erection and commissioning charges (excluding spares)	1,997.26	5,865.70	3,868.44	
	e.1) Insurance on Erection and Commissioning		166.41	166.41	
	GST as applicable on 2€	359.51	1,070.78	711.28	
	Sub-Total (Generating Plant and Equipment)	33,650.31	41,658.06	8,007.75	
3	Switchyard and Pothead Yard Equipment & Services		-	-	1. Delay in AHPL supplied major turbine & generator equipment (High grade steel from the Europe) 2. Delay due to Covid -19 restriction 3. Delay in BHEL supplied BF Valve 4. Disruption in construction power supply 5. Surprises in Unit One spiral Casing
	a) Substation equipment, auxiliary equipment and service of Switchyard - Annex-S(5)	1,012.07	1,449.49	437.42	
	GST (as applicable on 3(a) & (b)	182.17	260.91	78.74	
	b) Transportation,handling and insurance charges	60.72	116.71	55.99	
	GST as applicable on 3(b)	10.93	20.92	9.99	
	c) Erection & Commissioning Charges (excluding spares)	61.70	141.70	80.00	
	GST as applicable on 3©	11.11	25.51	14.40	
	Sub-Total (Substation Equipment, Auxiliary Equipment and Service of Switch Yard)	1,338.70	2,015.23	676.53	
4	Contingencies @ 1% of Items 2 & 3	349.89	120.11	-229.78	
5	Tools & Plants @ 0.5% of Item 2 &3	174.95	113.95	-61.00	
6	Sub-Total (Item 1 to 5)	35,846.88	45,539.72	9,692.84	
7	Establishment (as per Para 16.5 of Chapter XVI)	2,099.34	5,148.03	3,048.69	
8	Sub Total (Item 6 & 7)	37,946.22	50,687.75	12,741.53	
9	Audit and account Charges (as per para 16.9.2 of Chapter XVI)	88.31	-	-88.31	
10	TOTAL (8 + 9)	38,034.53	50,687.75	12,653.22	
11	Dismantling		-	-	
	Dismantling Charges	912.41	1,215.13	302.72	
	GST as applicable on Dismantling Charges	164.23	218.63	54.39	
	Subtotal (Dismantling Charges)	1076.64	1,433.76	357.12	
12	GRAND TOTAL (11 + 14)	39,111.17	52,121.51	13,010.34	

(Petitioner)

PART-II
FORM-5D

Break-up of Construction/Supply/Service packages

Name of the Petitioner : **NORTH EASTERN ELECTRIC POWER CORPORATION LTD.**
Name of the Generating Station : **Kopili Hydro Power Station**

1	Name/No. of Major Construction/Supply/Service Package	CIVIL WORKS				HM WORKS		EM WORKS	Total Cost of all packages
2	Scope of works[1] (in line with head of cost break-ups as applicable)	Civil Works pertaining to Restoration of Kopili Hydro Electric Plant	Construction Of Kiosk Room at Switchyard Kopili Power Station	Construction of Spur at Downstream of Kopili Power House of KHPS	Construction of 02 (Two) Nos. of Fire Fighting Tanks at Kopili Power Station,	Design, Fabrication, Supply, Erection, Testing & Commissioning of Penstock and Steel In-Liners in Umrong System	Repair and or Rebuild and or Replacement, Including Design, Supply, Fabrication, Erection, Testing and Commissioning of HM Components of Umrong WCS	Please refer "Annexure of Form 5D"	
3	Whether awarded through ICB/DCB/Departmentally/Deposit Work	Awarded through C&P, HQ/Site							
4	No. of bids received								
5	Date of Award	31.12.2020	8/27/2022	11/3/2021	9/20/2022	11/2/2020	9/17/2021		
6	Date of Start of work	31.12.2020	8/27/2022	11/3/2021	9/20/2022	11/2/2020	9/17/2021		
7	Date of Completion of Work/Expected date of completion of work	In progress	5/7/2025	4/21/2025	2/28/2025	9/10/2023	2/12/2024		
8	Value of Award in (Rs. Lakh) CEA vetted cost	43300.67						39111.17	82411.84
9	Firm or With Escalation in prices	With Escalation	Firm	Firm	Firm	With Escalation	Firm		
10	As per project expenditure up to 03.06.2024(Rs.Lakh)	59534.48						50564.59	110099.07
11	Taxes & Duties and IEDC (Rs. Lakh)	2427.84						1556.92	3984.76
12	IDC, FC, Insurance, FERV & Hedging cost (Rs. Lakh)	9520.04							9520.04
13	Less Receipts (Sale of Scrap & Infirm Power)	-3438.65							-3438.65
14	Sub-total (10 + 11 + 12) (Rs. Lakh)	**120165.22**							**120165.22**

Note:
1. If there is any package, which need to be shown in Indian Rupee and foreign currency (ies), the same should be shown separately along with the currency, the exchange rate and the date.

(Petitioner)

Breakup of Construction/Supply/Service packages

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Sta Kopili Hydro Power Station

1	Details of Turnkey/Item Rate/Works/Service Packages	(A) WORKS									
4	Scope of works* (in line with head of cost break-up as applicable)	Detailed Design and Engineering, Manufacture, Testing at Works, Despatch, Inland Transportation including Freight and Insurance, Delivery to Project Site,Storage and Preservation of all Equipment at any intermediate locations, Supervision of Complete Assembly, Erection, Testing and Commissioning at site of all Electrical&Mechanical Equipment	Reverse Engineering, Design, Engineering, Manufacturing, Supply, Repair/Refurbishment of Runners at Works, Final Assembly at Outer Assembly at Works, Supervision of Erection works at site, Testing & Commissioning of Turbine of Kopili Unit-I, II and IV	Design, Engineering, Manufacturing, Shop testing, Disassembly, Supply and Delivery of Inlined Sets of Stainless Steel 1400 mm dia Spherical Valves (MIV) with associated items	Design engineering, manufacturing, supply, erection and commissioning of Runner and other Turbine Parts of Unit#I	Design, Engineering, Manufacture, Testing at Works, Supply on F.O.R. destination/site basis, Inland Transportation including freight and insurance, unloading, storage, demurrage, erection/installation, testing and commissioning of 220kV V Switchyard Equipment	Site Works, Design, Manufacturing, Supply, Delivery, Erection, Testing and Successful Commissioning of fire detection and protection system	X ray of GT	3 Nos Pendstok Protection Valve (Butterfly Valve)	Design, manufacturing, supply, delivery, fabrication, erection, testing and commissioning of different sizes of pipes, fittings, valves etc. required for renovation and modernization of cooling water system	
3	Whether awarded through ICB/DCB/Departmentally/Over each Works	Available with C&P Wing,Shillong	Available with C&P Wing,KHPS	Available with C&P Wing,R+PS	Available with C&P Wing,R+PS	Available with C&P Wing,Shillong	Available with C&P Wing,KHPS	Available with C&P Wing,Shillong	Available with C&P Wing,Shillong	Available with C&P Wing,KHPS	
4	No. of bids received										
5	Date of Award	30.04.2021	20.12.2021	02.12.2020	24.01.2020	21.10.2021	19.12.2021	17.12.2020	23.12.2020	14.01.2021	
6	Date of Start of work	03.04.2021	23.12.2021	02.12.2020	24.01.2020	21.10.2021	19.12.2021	17.12.2020	23.12.2020	14.01.2021	
7	Date of Completion of Works/Expected date of completion of work	03.09.2024	12.11.2022	1st Value: 23/12/21 2nd Value: 23/03/22 3rd Value: 23/06/22	03.09.2024	14.09.2022	31.08.2024	30.04.2022	30.11.2021	01.07.2021	
8	Value of Award in (Rs. Lakh) (Old vetted cost)	28777.17									
9	Firm or With Escalation in prices	With Escalation	With Escalation	Firm	Firm	Firm	Firm	With Escalation	Firm	Firm	
10	As per project expenditure up to 31.08.2024(Rs.Lakh)	30584.09									
11	Taxes & Duties excl GST (Rs. Lakh)	1643.25									
13	IDC, FC, Insurance, 100kV & Hedging cost (Rs. Lakh)	3525.44									
13	Less Receipts (Sale of Scrap & other Income)	-									
14	Subvetted (10 + 11 + 13) (Rs. Lakh)	-									

Note:
1. If there is any package, which need to be shown in Indian Rupee and foreign currency (ies), the same should be shown separately along with the currency, the exchange rate and the date.

104

(Petitioner)

PART-II
FORM-SEI

In case there is cost over run

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : Kopili Hydro Power Station

Sl. No.	Break Down	Original Cost (Rs. Lakh) as approved by the	Cost (Rs. Lakh)-as on 03.06.24 UNIT-I	Cost (Rs. Lakh)-as on 12.11.23 UNIT- II	Cost (Rs. Lakh)-as on 03.09.23 UNIT-III	Cost (Rs. Lakh)-as on 20.08.23 UNIT-IV	Difference	Reason for Variation (Please submit supporting computations and documents wherever applicable)	Increase in soft cost due to increase in hard cost
		Total Cost	Total Cost	Total Cost	Total Cost	Total Cost	Total Cost		
A	Preliminary & Pre-Operative Expenses	798.17	133.58	133.58	133.58	133.58	-263.87		
B	Cost of Land	0.00	0.00	0.00	0.00	0.00	0.00		
C	Civil Works	285.09	56.87	56.87	56.87	56.87	-27.33		
J	Power Plant Civil Works	34426.56	12092.95	12892.95	12092.95	12092.95	13945.72		
K	Buildings	248.06	33.05	33.05	33.05	33.05	-115.88		
M	Plantation	80.00	0.00	0.00	0.00	0.00	-80.00		
Q	Miscellaneous	600.00	1129.20	1129.20	1129.20	1129.20	3916.81		
P	Maintenance during Construction	349.60	21.03	21.03	21.03	21.03	-265.49		
Q	Special Tools & Plants	100.00	5.65	5.65	5.65	5.65	-77.39		
R	Communication	2883.66	432.05	432.05	432.05	432.05	-1155.46		
X	Environment and Ecology	50.00	0.00	0.00	0.00	0.00	-50.00		
Y	Losses on stock	87.40	0.00	0.00	0.00	0.00	-87.40		
	TOTAL I-WORKS	39908.45	13904.37	13904.37	13904.37	13904.37	15709.02		
ii	Establishment Charges @ 8% of I-Works	3192.68	1586.21	1586.21	1586.21	1586.21	3132.37		
iii	Tools & Plants	0.00	0.00	0.00	0.00	0.00	0.00		
iv	Suspense	0.00	0.00	0.00	0.00	0.00	0.00		
v	Receipts and Recoveries (-)	0.00	0.00	0.00	0.00	0.00	0.00		
	TOTAL DIRECT CHARGES	43101.12	15490.58	15490.58	15490.58	15490.58	18861.39		
2	INDIRECT CHARGES		0.00	0.00	0.00	0.00	0.00		
i	Capitalisation of Abatement of Land revenue	0.00	0.00	0.00	0.00	0.00	0.00		
ii	Audit & Accounts etc. (0.5% of I-Works)	199.54	0.00	0.00	0.00	0.00	-199.54		
	TOTAL INDIRECT CHARGES	199.54	0.00	0.00	0.00	0.00	-199.54		
3	A. TOTAL CIVIL & HM WORKS (1+2)	43300.67	15490.58	15490.58	15490.58	15490.58	18661.85		
B	Electro-Mechanical Works								
i	Electro-Mechanical Works (Detail at Sheet "Annex of Form6EI")	38423.52	11743.37	11743.37	11743.37	11743.37	10649.96		
ii	Audit & Accounts charges	88.31	0.00	0.00	0.00	0.00	-88.31		
iii	Establishment Charges of EM Works	2099.34	1287.01	1287.01	1287.01	1287.01	3048.69		
	B. Total Electro-Mechanical Works	39111.17	13030.38	13030.38	13030.38	13030.38	13010.34		
C	Insurance Cost against Residual Assets of the Plant	0.00	386.76	386.76	386.76	386.76	1547.04		
D	Hard Cost (A+B+C)	82411.84	28907.71	28907.71	28907.71	28907.71	33719.03		
E	IDC & FC	5397.00	1993.25	1993.25	1993.25	1993.25	2576.09		
F	Total Project Cost(D+E)	87808.84	30900.96	30900.96	30900.96	30900.96	36295.02		
G	(-) Less Receipt		0.00	0.00	0.00	0.00	0.00		
	(a) Sale from Infirm Power	0.00	245.11	214.53	0.00	0.00	459.64		
	(b) Sale of Scrap	0.00	744.75	744.75	744.75	744.75	2979.00		
H	Net Total (F-G)	87808.84	29911.10	29943.68	30156.21	30156.21	32856.38		
								DETAIL AT ANNEXURE-1	

(Petitioner)

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
(Abstract of Revised Cost Estimates of Electro Mechanical Works)
(At MAY-2024 Price Level)

Sl. No	Item	Original Cost (Rs. Lakh) as approved by the Board of Members	Cost (Rs. Lakh)- as on 03.06.24 UNIT-I	Cost (Rs. Lakh)- as on 12.11.23 UNIT- II	Cost (Rs. Lakh)- as on 03.09.23 UNIT-III	Cost (Rs. Lakh)- as on 20.08.23 UNIT-IV	Difference
		Total Cost	Total Cost	Total Cost	Total Cost	Total Cost	Total Cost
1	Preliminary - Annex-S(1)	282.23	345.79	345.79	345.79	345.79	1,100.92
	GST on Preliminary	50.80	62.30	62.30	62.30	62.30	198.41
	Subtotal (Preliminary)	333.03	408.09	408.09	408.09	408.09	1,299.34
2	Generating Plant and Auxiliaries		-				-
	a) Generating Units and Associated Accessories - Annex - S(2)	20,318.41	5,205.12	5,205.12	5,205.12	5,205.12	502.08
	b) Auxiliary electrical equipment for power station -Annex-S(3)	3,791.67	1,395.31	1,395.31	1,395.31	1,395.31	1,789.95
	c) Auxiliary Mechanical equipment and services for power station - Annex-S(4)	1,600.81	565.87	565.87	565.87	565.87	882.66
	GST as applicable on 2(a), (b) & (c)	4,626.97	1,288.44	1,288.44	1,288.44	1,288.44	574.78
	d) Transportation, handling and Insurance charges	808.21	156.46	156.46	156.46	156.46	-182.38
	GST as applicable on 2(d)	145.48	27.60	27.60	27.60	27.60	-35.07
2	e)Erection and commissioning charges (excluding spares)	1,997.25	1,466.43	1,466.43	1,466.43	1,466.43	3,868.44
	e.1) Insurance on Erection and Commissioning		41.60	41.60	41.60	41.60	166.41
	GST as applicable on 2E	359.51	267.70	267.70	267.70	267.70	711.26
	Sub-Total (Generating Plant and Equipment)	33,650.31	10,414.52	10,414.52	10,414.52	10,414.52	8,007.75
3	Switchyard and Pothead Yard Equipment & Services		-				-
	a) Substation equipment, auxiliary equipment and service of Switchyard - Annex-S(5)	1,012.07	362.37	362.37	362.37	362.37	437.42
	GST (as applicable on 3(a(& (b)	182.17	65.23	65.23	65.23	65.23	78.74
	b) Transportation handling and insurance charges	60.72	29.18	29.18	29.18	29.18	55.99
	GST as applicable on 3(b)	10.93	5.23	5.23	5.23	5.23	9.99
	c) Erection & Commissioning Charges (excluding spares)	61.70	35.42	35.42	35.42	35.42	90.01
	GST as applicable on 3©	11.11	6.38	6.38	6.38	6.38	14.40
	Sub-Total (Substation Equipment, Auxiliary Equipment and Service of Switch Yard)	1,338.70	503.81	503.81	503.81	503.81	676.53
4	Contingencies @ 1% of items 2 & 3	349.89	30.03	30.03	30.03	30.03	-229.78
5	Tools & Plants @ 0.5% of item 2 &3	174.95	28.49	28.49	28.49	28.49	-61.00
6	Sub-Total (Item 1 to 5)	35,846.88	11,384.93	11,384.93	11,384.93	11,384.93	9,692.84
7	Establishment (as per Para 16.5 of Chapter XVI)	2,099.34	1,287.01	1,287.01	1,287.01	1,287.01	3,048.59
8	Sub Total (Item 6 & 7)	37,946.22	12,671.94	12,671.94	12,671.94	12,671.94	12,741.53
9	Audit and account Charges (as per para 16.9.2 of Chapter XVI)	68.31					-68.31
10	TOTAL (8 + 9)	38,014.53	12,671.94	12,671.94	12,671.94	12,671.94	12,673.22
11	Dismantling		-	-	-	-	-
	Dismantling Charges	912.41	303.78	303.78	303.78	303.78	302.72
	GST as applicable on Dismantling Charges	164.23	54.66	54.66	54.66	54.66	54.39
	Subtotal (Dismantling Charges)	1076.64	358.44	358.44	358.44	358.44	357.12
12	GRAND TOTAL (11 + 14)	39,111.17	13,030.38	13,030.38	13,030.38	13,030.38	13,030.34

PART-II
FORM-SD

In case there is time over run

Name of the Petitioner:
Name of the Generating Station :

NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Kopili Hydro Power Station

S. No.	Description of Activity/Works/Service	Original Schedule (As per Planning)		Actual Schedule (As per Actual)		Time Over-Run as per Station COD	Reasons for delay	Other Activity affected (Mention Sr No. of activity affected)
		Start Date	Completion Date	Actual Start Date	Actual Completion Date	Months		
1	Civil Works							
a	Civil Works pertaining to Restoration of Kopili Hydro Electric Plant, Umrongso, Assam	13/01/2020	30/06/2023	13/01/2020	10/01/2023			
b	Construction Of Kiosk House at Switchyard Kopili Power Station,KHPS,Umrangso	8/27/2022	11/04/2022	8/27/2022	9/7/2023			
c	Construction of Spur at Downstream of Kopili Power House of Kopili Hydro Electric Plant Umrongso Assam	11/3/2021	5/2/2022	11/30/2021	4/2 /2023			
d	Construction of 02 (Two) Nos. of Fire Fighting Tanks at Kopili Power Station, KHPS, Umrongso	9/20/2022	1/15/2023	9/20/2022	2/28/2023			
2	HM Works							
a	Design, Fabrication, Supply, Erection, Testing & Commissioning of Penstock and Steel In-Liners in Unring System of Kopili Hydro Electro Project (275 MW), Dist-Dima Hasao, Assam	11/2/2020	4/30/2022	11/3/2020	5/10/2023			
b	Repair and or Rebuild and or Replacement, including Design, Supply Fabrication, Erection, Testing and Commissioning of Hydro Mechanical Components of Umrong Water Conductor System Under Re-Constructen, Renovation & Modernization of KHEP(4X50mw), Dist-Dima Hasao, Assam	9/17/2021	5/15/2022	9/17/2021	2/1/2024			
3	EM Works							
a	Detailed Design and Engineering, Manufacture, Testing at Works, Dispatch, Inland Transportation including Freight and Insurance, Delivery to Project Site,Storage and Preservation of all Equipment at any intermediate locations, Supervision of Complete Assembly, Erection, Testing and Commissioning at site of all Electrical/Mechanical Equipment	03.04.2021	Unit #4&#1: 02/13/2022 Unit #3&#V: 02/01/2023	03.04.2021	Unit: 06.06.2024 Unit-I: 12/11/2023 Unit-II:09/09/2023 Unit-V: 30/06/2023	03	DETAILS AT ANNEXURE-I	
b	Reverse Engineering, Design, Engineering, Manufacturing, Supply, Repair/Refurbishment of Runners at Works, Trial Assembly of Guide Apparatus at Works, Supervision of Erection works at site, Testing & Commissioning of Turbine of Kopili Unit-II, III and IV	23.12.2021	Unit: 22/12/2022 Unit-II:22/11/2022 Unit-V: 22/13/2022	23.12.2021	Unit: 30-10-2023 Unit-II:12-09-2023 Unit-V: 14-07-2023			
c	Design, Engineering, Manufacturing, Shop testing, Shop assembly, Supply and Delivery of 2(three) Sets of Stainless Steel 1400 mm dia Spherical Valves (MIV) with associated items	02.12.2020	1st Valve: 22/01/22 2nd Valve: 22/02/22 3rd Valve: 22/03/22		1st Valve: 22/12/21 2nd Valve: 31/01/22 3rd Valve: 22/02/22			
d	Design, engineering, manufacturing, supply, erection and commissioning of Runner and other Turbine Parts of U#3R	03.01.2022	30.09.2022 (Supply)	03.01.2022	29.09.2024 (Supply)			
e	Design, Engineering, Manufacture, Testing at Works, Supply on F.O.B. destination/site basis, Inland Transportation including freight and insurance, unloading, storage, dismantling, erection/commissioning, testing and commissioning of 220kV Switchyard Equipment	29.10.2021	29.10.2022	29.10.2021	10.06.2025			
f	Site Survey, Design, Manufacturing, Supply, Delivery, Erection, Testing and Successful Commissioning of fire detection and protection system	30.12.2021	15.03.2023	15.12.2021	30.08.2024(Expected)			
g	5 nos of CT	17.12.2020	Unit #4&1: 15/07/2022 Unit #3,IV & Spare: 15/04/2022	17.12.2020	Unit: 22-05-2024 Unit-I:02-11-2023 Unit-II:31-08-2023 Unit-V:31-08-2023 Spare: Not yet			
h	2 Nos Penstock Protection Valve (Butterfly Valve)	15.12.2020	14.12.2021	15.12.2020	30.11.2023			
i	Design, manufacturing, supply, delivery, fabrication, erection, testing and commissioning of different sizes of pipes, fittings, valves etc. required for renovation and modernization of cooling water system	14.07.2021	10/1/2023	14.07.2021	3/30/2023			

~ 107 ~

(Petitioner)

PART-II
FORM- 6

Financial Package upto COD

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.

Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Project Cost as on COD[1] :

Date of Commercial Operation of the Station[2] :

(Amount in lacs)

	Financial Package as Approved		Financial Package as on COD		As Admitted on COD	
	Currency and Amount[3]		Currency and Amount[3]		Currency and Amount[3]	
1	2	3	4	5	6	7
Loan-I SBI LOAN	INR			80000		
Loan-II HDFC LOAN	INR			5890		
Loan-III						
Total Debt		73202.283		85890.000		
Equity:						
Foreign						
Domestic		31372.407		14110.00		
Internal resouces				22700.00		
Total Equity:		31372.407		36810.00		
Debt: Equity Ratio		70:30		70:30		

Note :

1. Say Rs. 80 Cr. + US $ 200 m or Rs. 1320 Cr. Including US$ 200 m at an exchange rate of US$ = Rs. 70.
2. Provide details on commercial operation as on COD of each Unit.
3. For example : US $ 200m, etc.

(Petitioner)

PART-I
FORM- 7

Details of Project Specific Loans

Name of the Company : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Particulars		Package 1	package 2
Source of Loan [1]	NOT APPLICABLE		
Currency[2]			
Amount of Loan sanctioned			
Amount of Gross Loan drawn upto 31.03.2019/COD [3, 4, 5, 13, 15]			
Interest Type [6]			
Fixed Interest Rate, if applicable			
Base Rate, if Floating Interest[7]			
Margin, if Floating Interest[8]			
Are there any Caps/Floor[9]			
If above is yes,specify caps/floor			
Moratorium Period[10]			
Moratorium effective from			
Repayment Period[11]			
Repayment effective from			
Repayment Frequency[12]			
Repayment Instalment [13, 14]			
Base Exchange Rate [16]			
Are foreign currency loan hedged ?			
If above is yes, specify details [17]			

Note

1. Source of loan means the agency from whom the loan has been taken such as WB, ADB, WMB, PNB, SBI, ICICI, IFC, PFC etc.
2. Currency refers to currency of loan such as US$, DM, Yen, Indian Rupee etc.
3. Details are to be submitted as on 31.03.2019 for existing assets and as on COD for the remaining assets.
4. Where the loan has been refinanced, details in the Form is to be given for the loan refinanced. However, the details of the original loan is to be given separately in the same form.
5. If the Tariff in the petition is claimed separately for various units, details in the Form is to be given separately for all the units in the same form.
6. Interest type means whether the interest is fixed or floating.
7. Base rate means the base as PLR, LIBOR etc. over which the margin is to be added. Applicable base rate on different dates from the date of drawl may also be enclosed.
8. Margin means the points over and above the floating rate.
9. At times caps/floor are put at which the floating rates are frozen. If such a condition exists, specify the limits.
10. Moratorium period refers to the period during which loan servicing liability is not required.
11. Repayment period means the repayment of loan such as 7 years, 10 years, 25 years etc.
12. Repayment frequency means the interval at which the debt servicing is to be done such as monthly, quarterly, half yearly, annual, etc.
13. Where there is more than one drawal/repayment for a loan, the date & amount of each drawal/repayment may also be given separately.
14. If the repayment installment amount and repayment date cannot be worked out from the data furnished above, the repayment schedule to be furnished separately.
15. In case of Foreign loan, date of each drawals repayment along with exchange rate at that date may be given.
16. Base exchange rate means the exchange rate prevailing as on 31.03.2019 or COD, whichever is later.
17. In case of hedging, specify details like type of hedging, period of hedging, cost of hedging, etc.
18. In case of foreign loans, provide details of exchange rate considered on date of each repayment of principal and date of interest payment.
19. At the time of truing up rate of interest with relevant reset date (if any) to be furnished separately.
20. At the time of truing up provide details of refinancing of loans considered earlier. Details such as date on which refinancing done, amount of refinanced loan, terms and conditions of refinanced loan, financing and other charges incurred for refinancing, etc.

(Petitioner)

Details of Allocation of corporate loans to various projects

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI 200 MW

Particulars	Loan 1	Loan 2
Source of Loan	SBI-Rupee Term loan	HDFC - Long Term Loan
Currency	INR	INR
Amount of Loan sanctioned	10,000,000,000	5,000,000,000
Amount of Gross Loan drawn upto /COD	10,000,000,000	5,000,000,000
Interest Type	Floating	Floating
Fixed Interest Rate, if applicable	N.A.	N.A.
Base Rate, if Floating Interest	SBI 3-month MCLR	1 Month T-Bill
Margin, if Floating Interest	0.00%	1.67%
Are there any Caps/Floor	N.A.	N.A.
If above is yes,specify caps/floor	N.A.	N.A.
Moratorium Period	2 years & 3 months	2 years & 3 months
Moratorium effective from	October 26, 2021	October 6, 2022
Repayment Period	8 years	8 years
Repayment effective from	January 26, 2024	January 6, 2025
Repayment Frequency	Quarterly	Quarterly
Repayment Instalment	(i) Rs.25 crore 9th to 20th quarter (ii) Rs.50 crore 21st to 28th quarter (iii) Rs.75 crore 29th to 32nd quarter	(i) Rs.15 crore 9th to 20th quarter (ii) Rs.25 crore 21st to 28th quarter (iii) Rs.30 crore 29th to 32nd quarter
Base Exchange Rate	N.A.	N.A.
Distribution of Gross Loan drawn up to:	***(Amount in lacs)***	
Name of the Project		
1.Kopili Hydro Power Station (200 MW)	80,000.00	20,000.00
2.Solar PP, Monarchak		336.00
4. Kameng Hydro Electric Project, Arunachal Pradesh	20,000.00	27,448.49
8 Tuirial Hydro Power Station		2,215.51
Total	**100,000.00**	**50,000.00**

(Petitioner)

PART-II
FORM- 9A

Year wise Statement of Additional Capitalisation after COD

2019-24

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

COD

For Financial Year

Sl. No.	Head of Work/Equipment	ACE Claimed (Actual/Projected)			IDC included in col.3	Regulation under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis (Rs in lakh)	Un-discharged Liability included in col.3 (Rs in lakh)	Cash basis				
1	2	3	4	(5=3-4)	6	7	8	9
WILL BE CLAIMED IN DUE COURSE THROUGH TRUEING UP PETITION								

(Petitioner)

PART-II
FORM- 9B

Statement of Additional Capitalisation during fag end of the Project

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)
COD 03.06.2024

Sr. No.	Year	Work/Equipment added during last five years of useful life of each Unit/Station	Amount capitalised / Proposed to be capitalised (Rs Lakh)	Justification for capitalisation proposed	Impact on life extension
1	2	3	4	5	6
NOT APPLICABLE					

Note :

1. Cost Benefit Analysis for capital additions done should be submitted along with petition for approval of such schemes.
2. Justification for additional capital expenditure claim for each asset should be relevant to regulation under which claim and the necessity of capitalisation of the asset.

(Petitioner)

PART-II
FORM- 9Bi

Details of Assets De-capitalized during the period

Details of Assets De-capitalized during the period

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD
Name of the Generating Station : KOPILI GENERATING UNIT
Region NORTH EAST State ASSAM District DIMA HASAO

S. No.	Name of the Asset	Nature of de-capitalization (whether claimed under exclusion or	Original Value of the Asset Capitalized	Year Put to use	Depreciation recovered till date of de-capitalization	
(1)	(2)	(3)	(4)	(5)	(6)	
		NOT APPLICABLE				

Note: Year wise detail need to be submitted.

(Petitioner)

PART-II
FORM- 9C

Statement showing reconciliation of ACE claimed with the capital additions as per books

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

S. No.	Particulars	01.04.2024-02.06.2024	03.06.2024-31.03.2025	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5			
1	Closing Gross Block as per IND AS	118779.32	137727.74	137727.74	137727.74	137727.74	137727.74
2	Add/Less: Adjustments	0	0	0	0	0	0
3	Closing Gross Block as per IGAAP	118779.32	137727.74	137727.74	137727.74	137727.74	137727.74
4	Opening Gross Block as per IND AS	118779.32	136966.85	137727.74	137727.74	137727.74	137727.74
5	Add/Less: Adjustments	0.00	0	0	0	0	0
6	Opening Gross Block as per IGAAP	118779.32	136966.85	137727.74	137727.74	137727.74	137727.74
7	**Total Additions as per books (G= 3 - 6)**	0.00	760.89	0.00	0.00	0.00	0.00
8	Less: Additions pertaining to other Stages	0	0	0	0	0	0
9	**Net Additions pertaining to instant project/Unit/Stage**	0.00	760.89	0.00	0.00	0.00	0.00
10	Less: Exclusions (Items not allowable / not claimed)	0.00	0.00	0.00	0.00	0.00	0.00
11	**Net Additional Capital Expenditure**	0.00	760.89	0.00	0.00	0.00	0.00
12	**Less: Un-discharged Liabilities**	1557.94	1792.53	1792.53	1792.53	1792.53	1792.53
13	**Add: Discharges of un-discharged**	1,106.73	99.75	99.75	99.75	99.75	99.75
14	**Net Additional Capital Expenditure Claimed (on cash basis)**	118328.10	136034.99	136034.99	136034.99	136034.99	136034.99

Note: Reason for exclusion of any expenditure shall be given in clear terms.

760.89

(Petitioner)

Statement showing items/assets/works claimed under Exclusions:
Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED

PART-II
FORM- 9D

Name of the Generating Station COD : KOPILI GENERATING UNIT

S. No.	Head of Work / Equipment	ACE Claimed under Exclusion				Justification
		Accrual basis	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3	
(1)	(2)	(3)	(4)	(5=3-4)	(6)	(7)
NIL						

(Petitioner)

Note: 1. Exclusions claimed on assets not allowed in Tariff should be supported by the specific reference of Commission Order date, Petition No., amount disallowed, etc.
2. For inter unit transfer, nature of transfer i.e. temporary or permanent should be mentioned. It is to be certified that exclusion sought in receiving station only and not in sending station or in both the station.

(Petitioner)

Form -7

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

(Amount in Rs. Lakh)

Statement of Capital cost
(To be submitted for relevant dates and year wise)

S. No.	Particulars	01.04.2024-02.06.2024			From 03.06.2024 to 31.03.2025			2025-26			2026-27			2027-28			2028-29		
		Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis
(1)	(2)																		
A	a) Opening Gross Block Amount as per books	118779.32			136916.85			137727.74			137727.74			137727.74			137727.74		
	b) Amount of IDC in A(a) above	8737.58			7973.66			7973.66			7973.66			7973.66			7973.66		
	c) Amount of FC in A(a) above																		
	d) Amount of FERV in A(a) above																		
	e) Amount of Hedging Cost in A(a) above																		
	f) amount of IEDC in A(a) above	18171.26			20516.38			20516.38			20516.38			20516.38			20516.38		
B	a) Addition in Gross Block Amount during the period (Direct purchase)				760.89														
	b) Amount of IDC in B(a) above	0			0			0			0			0			0		
	c) Amount of FC in B(a) above																		
	d) Amount of FERV in B(a) above																		
	e) Amount of Hedging Cost in B(a) above																		
	f) Amount of IEDC in B(a) above	0			0			0			0			0			0		
C	a) Addition in Gross Block Amount during the period (Transferred from CWIP)	0			0.00														
	b) Amount of IDC in C(a) above	0			0.00														
	d) Amount of FC in C(a) above	0			0.00														
	e) Amount of FERV in C(a) above	0			0.00														
	f) Amount of Hedging Cost in C(a) above	0			0.00														
	g) Amount of IEDC in C(a) above				0.00														
D	a) Deletion in Gross Block Amount during the period	0																	
	c) Amount of IDC in D(a) above																		
	d) Amount of FC in D(a) above																		
	e) Amount of FERV in D(a) above																		
	f) Amount of Hedging Cost in D(a) above																		
	g) Amount of IEDC in D(a) above																		
E	a) Closing Gross Block Amount as per books	118779.32			137727.74			137727.74			137727.74			137727.74			137727.74		
	c) Amount of IDC in E(a) above	8737.58			7973.66			7973.66			7973.66			7973.66			7973.66		
	d) Amount of FC in E(a) above																		
	e) Amount of FERV in E(a) above																		
	f) Amount of Hedging Cost in E(a) above																		
	g) Amount of IEDC in E(a) above	18171.26			20516.38			20516.38			20516.38			20516.38			20516.38		

(Petitioner)

PART-II
FORM-9F

Statement of Capital works in Progress

(To be given for relevant dates and year wise)

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.

Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

(Amount in Rs. Lakh)

Sl. No.	Particulars	01.04.2024-02.06.2024	03.06.2024-31.03.2025	2025-26	2026-27	2027-28	2028-29
A	a) Opening CWIP as per books	16829.29	18207.30	19.76	19.76	19.76	19.76
	b) Amount of IDC in A(a) above	1864.62	2,216.08	0.00	0.00	0.00	0.00
	c) Amount of FC in A(a) above	0.00					
	d) Amount of FERV in A(a) above	0.00					
	e) Amount of Hedging Cost in A(a) above	0.00					
	f) Amount of IEDC in A(a) above	5345.01	5345.01	0.00	0.00	0.00	0.00
B	a) Addition in CWIP during the period	1278.01					
	b) Amount of IDC in B(a) above	351.46					
	c) Amount of FC in B(a) above	0.00					
	d) Amount of FERV in B(a) above	0.00					
	e) Amount of Hedging Cost in B(a) above	0.00					
	f) Amount of IEDC in B(a) above	0.00					
C	a) Transferred to Gross Block Amount during the period		18,187.53				
	b) Amount of IDC in C(a) above		2216.08				
	c) Amount of FC in C(a) above		0.00				
	d) Amount of FERV in C(a) above		0.00				
	e) Amount of Hedging Cost in C(a) above		0.00				
	f) Amount of IEDC in C(a) above		5345.01				
D	a) Deletion in CWIP during the period	0					
	b) Amount of IDC in D(a) above	0.00					
	c) Amount of FC in D(a) above	0.00					
	d) Amount of FERV in D(a) above	0.00					
	e) Amount of Hedging Cost in D(a) above	0.00					
	f) Amount of IEDC in D(a) above	0.00					
E	a) Closing CWIP as per books	18207.30	19.76	19.76	19.76	19.76	19.76
	b) Amount of IDC in E(a) above	2216.08	0.00	0.00	0.00	0.00	0.00
	c) Amount of FC in E(a) above	0.00	0.00	0.00	0.00	0.00	0.00
	d) Amount of FERV in E(a) above	0.00	0.00	0.00	0.00	0.00	0.00
	e) Amount of Hedging Cost in E(a) above	0.00	0.00	0.00	0.00	0.00	0.00
	f) Amount of IEDC in E(a) above	5345.01	0.00	0.00	0.00	0.00	0.00

Note:

i. Relevant date/s means date of COD of unit/s/station and financial year start date and end date

Petitioner

PART-II
FORM-10

Financing of Additional Capitalisation

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)
Date of Commercial Operation :

	Actual					Admitted				
Financial Year (Starting from COD)[1]	Year 1	Year 2	Year3	Year4	Year 5 & So on	Year 1	Year 2	Year3	Year4	Year 5 & So on
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	NOT APPLICABLE									
Amount Capitalized in Work/Equipment[2]										
Financing Details										
Loan-1										
Loan-2										
Loan-3 and so on										
Total Loan[3]										
Equity										
Internal Resources										
Others (Pl. specify)										
Total										

Note:

(Petitioner)

PART-II
FORM-11

Calculation of Depreciation

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDRO POWER STATION

(Amount in Rs. Lakh)

Sl. No.	Name of the Assets	Gross block as on 31.03.2024	Gross Block as on 03.06.2024 (UNIT-I)	Gross Block as on 31.03.2025	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for each year up to 03.06.2024	Depreciation Amount for each year up to 31.05.2025
	1	2	3	4	6	6=Col.3 X Col.5	7=Col.4 X Col.5
1	Leasehold Land	1614.91	1614.91	1614.91	3.34%	53.94	53.94
2	Roads, bridges, culverts & helipads	107.53	107.53	107.53	3.34%	3.59	3.59
3	Main Plant Buildings	3170.20	3170.20	3170.20	3.34%	105.88	105.88
4	Other Buildings	1281.71	1281.71	1281.71	3.34%	42.81	42.81
5	Water supply, drainage & sewerage	29.71	29.71	29.71	4.22%	1.25	1.25
6	Railway siding	6.65	6.65	6.65	4.22%	0.28	0.28
7	Dam, Dyke, Reservoir & Other Hydraulic W	60405.15	62477.15	62477.15	4.22%	2636.54	2636.54
8	Plant and machinery	50959.91	67671.46	67671.46	4.22%	2855.74	2855.74
9	Furniture and fixtures	40.29	104.17	104.17	6.33%	6.59	6.59
10	Other Office Equipments	93.81	93.81	93.81	6.33%	5.94	5.94
11	EDP, WP machines & SATCOM equipment	242.36	264.54	264.54	15.00%	39.68	39.68
12	Vehicles including speedboats	177.33	177.33	177.33	4.22%	7.48	7.48
13	Construction equipment	179.04	179.04	179.04	4.22%	7.56	7.56
14	Electrical installations	156.24	161.25	161.25	4.22%	6.80	6.80
15	Communication equipment	82.62	121.34	121.34	6.33%	7.68	7.68
16	Hospital equipment	9.20	9.20	9.20	4.22%	0.39	0.39
17	Software	0.71	0.71	0.71	15.00%	0.11	0.11
18	Other Equipments	152.34	167.38	167.38	4.22%	7.06	7.06
19	Low Value Assets	35.53	35.56	35.56	100.00%	35.56	35.56
20	Laboratory and workshop equipment	54.08	54.08	54.08	4.22%	2.28	2.28
	TOTAL	118779.32	137727.74	137727.74		5827.17	5827.17
	Weighted Average Rate of Depreciation (%)		4.23%	4.23%			

TOTAL

Sep

Jan

Petitioner

Statement of Depreciation

PART-II
FORM-12

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

S. No.	Particulars	01.04.2024-02.06.2024	03.06.2024-31.03.2025	2025-26	2026-27	2027-28	2028-29
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Opening Capital Cost	118779.32	136966.85	137727.74	137727.74	137727.74	137727.74
2.	Closing Capital Cost	118328.10	137727.74	137727.74	137727.74	137727.74	137727.74
3.	Average Capital Cost	118553.71	137347.30	137727.74	137727.74	137727.74	137727.74
4.	Freehold land*						
5.	Rate of depreciation	0.04231	0.04231	0.04231	0.04231	0.04231	0.04231
6.	Depreciable value	106698.34	123612.57	123954.97	123954.97	123954.97	123954.97
7.	Balance useful life at the beginning of the period						
	Cumulative Depreciation upto previous year	2411.45	3277.22	8085.28	13912.45	19739.62	25566.79
8.	Remaining depreciable value						
9.	**Depreciation (for the period)**	865.76	4808.07	5827.17	5827.17	5827.17	5827.17
10.	**Depreciation (annualized)**	5016.93	5811.07	5827.17	5827.17	5827.17	5827.17
11.	Cumulative depreciation at the end of the period	3277.22	8085.28	13912.45	19739.62	25566.79	31393.96
12.	Less: Cumulative depreciation adjustment on account of un-discharged liabilities deducted						
13.	Less: Cumulative depreciation adjustment on account of de- capitalisation	0.00	0.00	0.00	0.00	0.00	0.00
14.	Net Cumulative depreciation at the end of the period	3277.22	8085.28	13912.45	19739.62	25566.79	31393.96

1. In case of details of FERV and AAD, give information for the applicable period.

(Petitioner)

Calculation of Weighted Average Rate of Interest on Actual Loans

PART-II
FORM- 13

Name of the Company : North Eastern Electric Power Corporation Ltd.
Name of the Power Station : KOPILI 200 MW

(Amount in lacs)

Sl. No.	Particulars	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2032-33	2033-34	2034-35
1	*2*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*
1	**HDFC Bank ,Long Term Loan**													
	Gross loan - Opening			0.00	20000.00	20000.00	20000.00	20000.00	20000.00	20000.00	20000.00			
	Cumulative repayments of Loans upto previous year			0.00	0.00	600.00	3000.00	5400.00	8200.00	12200.00	16400.00			
	Net loan - Opening			0.00	20000.00	19400.00	17000.00	14600.00	11800.00	7800.00	3600.00			
	Add: Drawal(s) during the Year			20000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	Less: Repayment (s) of Loans during the year			0.00	600.00	2,400.00	2,400.00	2,800.00	4,000.00	4,200.00	3,600.00			
	Net loan - Closing			20000.00	19400.00	17000.00	14600.00	11800.00	7800.00	3600.00	0.00			
	Average Net Loan			10000.00	19700.00	18200.00	15800.00	13200.00	9800.00	5700.00	1800.00			
	Rate of Interest on Loan on annual basis			8.85%	8.24%	8.24%	8.24%	8.24%	8.24%	8.24%	8.24%			
	Interest on loan			1618.28	1623.28	1499.68	1301.92	1087.68	807.52	469.68	148.32			
1	**SBI ,Rupee Term Loan**													
	Gross loan - Opening	0	28000.00	80000.00	80000.00	80000.00	80000.00	80000.00	80000.00	80000.00				
	Cumulative repayments of Loans upto previous year	0	0.00	0.00	2000.00	10000.00	18000.00	28000.00	44000.00	62000.00				
	Net loan - Opening	0.00	28000.00	80000.00	78000.00	70000.00	62000.00	52000.00	36000.00	18000.00				
	Add: Drawal(s) during the Year	28000.00	52000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
	Less: Repayment (s) of Loans during the year	0.00	0.00	2000.00	8,000.00	8,000.00	10,000.00	16,000.00	18,000.00	18,000.00				
	Net loan - Closing	28000.00	80000.00	78000.00	70000.00	62000.00	52000.00	36000.00	18000.00	0.00				
	Average Net Loan	14000.00	54000.00	79000.00	74000.00	66000.00	57000.00	44000.00	27000.00	9000.00				
	Rate of Interest on Loan on annual basis	6.65%	8.00%	8.20%	8.40%	8.40%	8.40%	8.40%	8.40%	8.40%				
	Interest on loan	801.06	3489.41	8496.45	6216.00	5544.00	4788.00	3696.00	2268.00	756.00				
	Total Loan													
	Gross loan - Opening	0.00	28000.00	80000.00	100000.00	100000.00	100000.00	100000.00	100000.00	100000.00	20000.00			
	Cumulative repayments of Loans upto previous year	0.00	0.00	0.00	2000.00	10600.00	21000.00	33400.00	52200.00	74200.00	16400.00			
	Net loan - Opening	0.00	28000.00	80000.00	98000.00	89400.00	79000.00	66600.00	47800.00	25800.00	3600.00			
	Add: Drawal(s) during the Year	28000.00	52000.00	20000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	Less: Repayment (s) of Loans during the year	0.00	0.00	2000.00	8600.00	10400.00	12400.00	18800.00	22000.00	22200.00	3600.00			
	Net loan - Closing	28000.00	80000.00	98000.00	89400.00	79000.00	66600.00	47800.00	25800.00	3600.00	0.00			
	Average Net Loan	14000.00	54000.00	89000.00	93700.00	84200.00	72800.00	57200.00	36800.00	14700.00	1800.00			
	Interest on loan	801.06	3489.41	10114.73	7839.28	7043.68	6089.92	4783.68	3075.52	1225.68	148.32			
	Weighted average Rate of Interest on Loans	**5.72%**	**6.46%**	**11.36%**	**8.37%**	**8.37%**	**8.37%**	**8.36%**	**8.36%**	**8.34%**	**8.24%**			

(Petitioner)

Calculation of Interest on Normative Loan

PART-II
FORM-13A

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

(Amount in Rs. Lakh)

Sl. No.	Particulars	01.04.2024-02.06.2024	03.06.2024-31.03.2025	2025-26	2026-27	2027-28	2028-29
1	2						
1	**Gross Normative loan – Opening**	83148.52	95876.80	96409.42	96409.42	96409.42	96409.42
	Cumulative repayment of Normative loan upto previous year	2414.64	3281.41	8088.47	13915.64	19742.81	25569.98
	Net Normative loan – Opening	80733.88	92596.39	88320.95	82493.78	76666.61	70839.44
	Add: Increase due to addition duringthe year / period	0.00	532.62	0.00	0.00	0.00	0.00
	Less: Decrease due to de-capitalisation during the year / period	0.00	0.00	0.00	0.00	0.00	0.00
	Less: Decrease due to reversal during the year / period	1090.56	1254.77	1254.77	1254.77	1254.77	1254.77
	Add: Increase due to discharges duringthe year / period	774.71					
	Repayment (s) of Normative Loan during the year	865.76	4808.07	5827.17	5827.17	5827.17	5827.17
	Net Normative loan - Closing	79549.27	87066.18	81239.01	75411.84	69584.67	63757.51
	Average Normative loan	*80140.07*	*89831.29*	*84779.98*	*78952.81*	*73125.64*	*67298.47*
	Weighted average rate of interest	8.37%	8.37%	8.37%	8.37%	8.36%	8.36%
	Interest on Loan	6704.81	7514.76	7092.20	6604.62	6115.55	5624.40
	Interest on Loan for the period	1157.27	6217.69	7092.20	6604.62	6115.55	5624.40

(Petitioner)

Calculation of on Working Capital

PART-II
FORM-13B

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

(Amount in Rs. Lakh)

Sl. No.	Particulars	01.04.2024-02.06.2024	03.06.2024-31.03.2025	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7	8
1	O & M Expenses (1 month O&M & security expenses)	70.05	370.76	472.62	498.47	525.73	554.49
2	Maintenance Spares (15% of O&M & Security Expenses)	126.09	667.37	850.71	897.24	946.32	998.08
3	Receivables (45 days of AFC)	527.01	2866.12	3453.80	3432.41	3413.04	3395.74
4	Total Working Capital	723.14	3904.25	4777.13	4828.12	4885.09	4948.32
5	Rate of Interest	12.15%	12.15%	12.15%	12.15%	12.15%	12.15%
6	Interest on Working Capital (annualised)	87.86	474.37	580.42	586.62	593.54	601.22

(Petitioner)

	01.04.2024-03.06.2024	04.06.2024-31.03.2025	2025-26	2026-27	2027-28	2028-29
Security Expenses	0	0.0000	0	0	0	0

(Petitioner)

PART-II
FORM-13C

Non-Tariff Income

Name of the Hydro Asset: KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)					
S.No.	Parameters	Existing 2018-19	20.08.2023-02.09.2023	03.09.2023-09.11.2023	10.11.2023-31.03.2024
(1)	(2)	(3)	(4)	(5)	(6)
1.	Income from rent of land or buildings		NOT APPLICABLE		
2.	Income from sale of scrap				
3.	Income from advertisements				

Note: To be submitted at the time of truing up

(Petitioner)

PART-II
FORM-13D

Incidental Expenditure during Construction

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Sl. No.	Parameters	Upto Schedule COD	Up to actual/anticipated COD
A	Expenses:		
1	Employees' Benefits Expenses		
2	Finance Costs		
3	Water Charges		
4	Communication Expenses		
5	Power Charges		
6	Other Office and Administrative Expenses		
7	Others (Please Specify Details)		
8	Other Pre-Operating Expenses		
9	Total Expenses		
	Less: Income from sale of tenders		
	Less: Income from guest house		
	Less: Income recovered from Contractors		
	Less: Interest on Deposits		

PETITIONER

PART-II
FORM-14

Draw Down Schedule for Calculation of IDC & Financing Charges

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : Kopili Hydro Electric Power Plant (4 x 50 MW)
COD 12.07.1997.

Sl.	Draw Down	Quarter 1			Quarter 2 (2022-23)			Quarter 3 (2021-22)		
	Particulars	Quantum in Foreign currency	Exchange Rate on draw down date	Amount in Indian Rupee (₹ in lakh)	Quantum in Foreign currency	Exchange Rate on draw down date	Amount in Indian Rupee (₹ in lakh)	Quantum in Foreign currency	Exchange Rate on draw down date	Amount in Indian Rupee (₹ in lakh)
1	**Loans**									
1.1	**Foreign Loans**									
1.1.1	**Foreign Loan 1**			Not Applicable						
	Draw down Amount									
	IDC									
	Financing charges									
	FERV									
	Hedging Cost									
1.1	**Total Foreign Loan**			Not Applicable						
	Draw down Amount									
	IDC									
	Financing charges									
	FERV									
	Hedging Cost									
1.2	**Indian Loans**									
1.2.1	**HDFC Bank ,Long Term Loan**						20,000.00			
	Draw down Amount									
	IDC									
	Financing charges									
1.2.2	**State Bank Of India ,Rupee Term Loan**									80,000.00
	Draw down Amount									
	IDC									
	Financing charges									
1.2	**Total Indian Loans**						**20,000.00**			**80,000.00**
	Draw down Amount									
	IDC									
	Financing charges									
							20,000.00			**80,000.00**
1	**Total of Loans drawn**									
	IDC									
	Financing charges									
	FERV									
	Hedging Cost									
2	**Equity**									
2.1	**Foreign equity drawn**									
2.2	**Indian equity drawn**									
	Total equity deployed									

Note:
1. Drawl of debt and equity shall be on pari-passu basis quarter wise to meet the commissioning schedule. Drawl of higher equity in the beginning is permissible
2. Applicable interest rates including reset dates used for above computation may be furnished separately
3. In case of multi-unit project details of capitalisation ratio used to be furnished.
4. Detailed calculation of IDC (Actual drawl and repayment dates and amount, rates of interest, etc.) should be furnished.

PETITIONER

PART-II
FORM-14A

Actual Cash Expenditure

Name of the Petitioner : **NORTH EASTERN ELECTRIC POWER CORPORATION LTD.**
Name of the Generating Station : **KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)**
COD

(Amount in Rs Lakh)

Particulars	Quarter-I	Quarter-II	Quarter-III	Quarter-n (COD)
1	2	3	4	5
Expenditure towards Gross Block				
Add:expenditure towards CWIP				
Add:Capital Advances,if any.				
Less:Undischarged liabilities (included above)		NOT APPLICABLE		
Add/Less: Others				
Payment to contractors / suppliers towads capital assets				
Cummulative payments				

Note: If there is variation between payment and fund deployment justification need to be furnished

(Petitioner)

PART-II
FORM-15A

Design energy and peaking capability (month wise)- ROR with Pondage/Storage type new stations

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

COD

Generating Company --KOPILI GENERATING UNIT----------

Name of Hydro-electric Generating Station : KOPILI HYDRO POWER STATION----------

Installed Capacity : No of units X MW = 4 X 50

Month		Design Energy * (MUs)	MW Continuous *
April	I	4.25	17.81
	II	2.48	10.42
	III	3.06	12.84
May	I	4.63	19.41
	II	6.28	26.34
	III	23.68	90.25
June	I	27.84	116.7
	II	40.97	171.75
	III	43.92	184.12
July	I	47.5	199.14
	II	47.18	199.79
	III	49.85	200
August	I	45.32	200
	II	45.32	200
	III	49.85	200
September	I	45.32	200
	II	44.75	187.6
	III	44.65	187.19
October	I	44.54	186.7
	II	44.47	186.44
	III	40.08	152.76
November	I	22.58	94.68
	II	22.6	94.74
	III	24.52	102.81
December	I	22.65	94.95
	II	22.43	94.03
	III	25.16	95.89
January	I	22.82	95.66
	II	22.95	96.21
	III	25.58	97.48
February	I	23.2	97.27
	II	17.19	72.06
	III	6.17	32.34
March	I	7.12	29.83
	II	7.44	31.18
	III	15.43	58.81
TOTAL		993.78	

*As per DPR / TEC of CEA vide Letter File No.CEA-HY-12-33/2/2020-HPA Division dated 05.03.2021

(Petitioner)

Design energy and MW Continuous (month wise) - RORtype stations

PART-II
FORM-
15B

Name of the Petitioner: NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station: KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Generating Company NORTH EASTERN ELECTRIC POWER CORPORATION LTD.			
Name of Hydro-Electric Generating Station: KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)			
Installed Capacity: No of Units X MW=4X50=200 MW			
Month		Design Energy* (MUs)	Designed Peaking Capability (MW)*
April	I		NOT APPLICABLE
	II		
	III		
May	I		
	II		
	III		
June	I		
	II		
	III		
July	I		
	II		
	III		
August	I		
	II		
	III		
September	I		
	II		
	III		
October	I		
	II		
	III		
November	I		
	II		
	III		
December	I		
	II		
	III		
January	I		
	II		
	III		
February	I		
	II		
	III		
March	I		
	II		
	III		
Total			

*As per DPR/TEC of CEA dated .....

Note :
Specify the number of peaking hours for which station has been designed.

(Petitioner)

Statement of Liability Flow

PART-II
FORM-16

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 M

Amount in ₹ lakh

Party	Asset / Work	Original Liability	Liability as on 03.06.2024	Discharges as on 03.06.2024	Reversal yearwise
1	2	3	4	5	6
a) For assets eligible for normal RoE					
BISWAJYOTI HOJAI					
EASTER LAPASAM				99,419.00	
RONO BHADRA HASNU			-94341.00		
RANJIT TIMUNG			-122305.00	0.00	
ROTHIANGA NAMPUI				113,286.00	
STERLING & WILSON			-165930.00	0.00	
ARADHANA AGENCY			-566800.00	0.00	
ASSAM PETROLEUM LTD.			-31591854.00	0.00	
ANDRITZ HYDRO PVT LT				0.00	
APS HYDRO PVT LTD			-1306051.00	0.00	
AEQUITAS VERITAS IND			-871439.00	0.00	
ASIAN PAINTS PPG PVT				0.00	
APDCL DEPOSIT WORKS			-26998167.20	103,545.00	
BHEL-KOLKATA			-7681520.00	0.00	
BHEL-GUWAHATI				0.00	
BIRENSING ENGTI			-49576.00	0.00	
BIJONA BODO				0.00	
COMPLAIN TANGLIANG			-1403729.00	0.00	
DESHO DADLAGUPU			-43382.00	0.00	
DABSANG LAPASAM			-2141100.00	528,094.00	
DAULAT PRASAD AGARWA			-9767476.00	286,524.00	
ELCOME TECHNOLOGIES			-27505.00	0.00	
GUWAHATI MOTORS				230,881.00	
HEMA TYNGKAN			-1752300.00	0.00	
HYDRO MAGUS PVT LTD			-119546.00	0.00	
HOICHUNGLIEN KHELMA			-31955.00		
INFOTECH SOLUTION				0.00	
JOYSING TIMUNG			-1.00	0.00	
JOYTHON LONGNAR,AI				0.00	
KRISHNA PRASAD JOSHI			-890157.00	0.00	
KHAGENDRA HOJAI			-79850.00	1,365,593.00	
KONECRANES &DEMAG PV			-4075804.00	0.00	
KRISHNA GENERATOR SE				0.00	
KARISHMA BEYPI			-6494.00		
LIPI DATA SYSTEMS LT				0.00	
LAXMI ELECTRICALS			-146981.00	0.00	
M/S A-BUD,CIRCULAR P			-48049.00	0.00	
MENOKA DEVI JOSHI				0.00	
MARLEKI PASLEIN			-130934.00	0.00	
NARAYAN BAHADUR CHET				0.00	
NARAYAN UPADHAYA			-3300540.00	0.00	
OM METALS INFRAPROJE				0.00	
PRANAB KUMAR DHING			-49924915.66		
PES ENGINEERS PVT. L			-2803680.00	0.00	
POWER GRID CORPORATI			-49923.00	0.00	
PRAPTI DIBRAGEDE				0.00	
ROBINSON TERON			-222452.00	0.00	
RONA BHADRA HASNU			-481748.00	0.00	
SUDAM JOSHI			-9286500.00	0.00	
SUPTD. OF POLICE HAF				0.00	
SUPER SERVICE STATIO			-1726144.00	0.00	
SUDARSHNA COOLING CE			-47336.00	0.00	
SANJIB CHETRI			-90868.00		
SUMIT SHARMA			-8568.00	0.00	
STERLITE POWER					

SUGRIVA PRASAD VARMA			-218000.00	0.00	
TESLA TRANSFORMER			-717500.00	0.00	
TECHNO ELECTRIC&ENGI			-4159853.00	706,440.00	
VOITH HYDRO PVT.LTD.			-10825076.00	0.00	
MUHAR MANI			0.00	0.00	
PARTHIV KONWAR			-13377.00		
HAMJENDRA HOJAI			-85941.00	0.00	
S.M. Corporation Ltd				10,852.00	
RAMSING RONGHI				0.00	
SANJIV CHANDA				0.00	
Central Power Repair				0.00	
VOITH HYDRO (P) LTD			-10852.00	5,408,154.00	
SUPER ENGINEERING WO				6,494.00	
BUCHIYA CONTROLS PVT			-105,452.90	310,400.00	
RAMSING RONGHI			-2,635,197.00	0.00	
R.R.ENGINEERING & CO			-349,249.00	0.00	
Rushabh Enterprises				0.00	
Loknath & Company			-1,245,894.00	0.00	
POWERGEAR LIMITED				0.00	
IRC Engineering Serv				0.00	
IT ONLINE				627,956.00	
NACS CLEANTECH				176,000.00	
ABRAR GADJET TRADIN			-510,474.00		
			-179,252,813.86	9,974,544.00	

(Petitioner)

PART II
FORM 17

Operation & Maintenance Expenses

Incase of Hydro generating station declared under commercial operation on or after 01.04.2019

	As on 31.03.2024	01.04.2024-02.06.2024	03.06.2024-31.03.2025	2025-26	2026-27	2027-28	2028-29
Total capital expenditure upto cutoff date (a)		116328.10	126034.95				
R&R expenditure (b)		0	0				
IDC & IEDC (C)		20928.94	28490.04				
Capital Cost considered for O&M expense (d)=(a)-(b)-(c)		97399.16	107544.93				
First year annualize O&M expense @ 5% of above (e)=5% of (d)		4869.96	5377.25				
O&M expense for the period		840.67	4449.12	5671.38	5981.61	6308.80	6653.89
O&M expense for next year @ 5.47% of above (f) =5.47% of (e)				5671.38	5981.61	6308.80	6653.89
Additional O&M expenses due to 7th Pay Commission Wage Revision		0	0	0			
Additional O&M expenses due to Minimum Wage Revision		0	0	0			
Additional O&M expenses due to Goods & Service Tax (GST)		0	0	0			
		63	302				

Note:Additional O&M expenses with supporting documents and computations to be provided for respective year of Tariff Period.

(Petitioner)

PART II
FORM 18

Details of Statutory Charges (If Applicable)

Name of the Petitioner: North Eastern Electric Power Corporation LTD

Name of the Generating Station: KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Sl. No	Particulars	Unit Rate	No of Units	Amount Claimed
1	Electricity Duty	NOT APPLICABLE		
2	Water Cess			
3				

Petitioner

ANNEXURE – IV

CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 370/GT/2019

Coram:
Shri I. S. Jha, Member
Shri Arun Goyal, Member
Shri Pravas Kumar Singh, Member

Date of order: 31st March, 2023

IN THE MATTER OF

Petition for revision of tariff of Kopili Hydroelectric Project (200 MW) for the period 2014-19, after truing-up exercise.

AND

IN THE MATTER OF

North Eastern Electric Power Corporation Limited
Corporate Office: Brookland Compound
Lower New Colony, Shillong – 793 003 **.... Petitioner**

Vs

1. Assam Power Distribution Company Limited
"Bijulee Bhawan" Paltanbazar
Guwahati-781 001, Assam

2. Meghalaya Power Distribution Corporation Limited
Lumjinshai, Short Round Road
Shillong-799 001, Meghalaya

3. Tripura State Electricity Corporation Limited
Bidyut Bhavan, North Banamalipur
Agartala-799 001, Tripura

4. Power & Electricity Department
Government of Mizoram
New Secretariat Complex
Kawlpetha, Aizwal-796001

5. Manipur State Power Distribution Company Limited
3rd Floor, New Directorate Building, Near 2nd M.R. Gate
Imphal-Dimapur Road, Imphal-795 001, Manipur

6. Department of Power
Vidyut Bhawan, Government of Arunachal Pradesh
Itanagar-791 111

7. Department of Power
Government of Nagaland
Electricity House, AG Colony
Kohima-797 001

8. North Eastern Regional Power Committee
NERPC Complex, Dong Parmaw
Lapalang, Shillong-793 006

9. North Eastern Regional Load Despatch Centre
Dongtieh, Lower Nongrah
Lapalang, Shillong-793 006 .... **Respondents**

Parties Present:

Shri Devapriya Choudhury, NEEPCO
Shri Sushanta Deka, NEEPCO
Shri Munin Choudhary, NEEPCO
Shri Ripunjoy Bhuyan, NEEPCO
Ms. Bornali Deori, NEEPCO
Ms. Elizabeth Pyrbot, NEEPCO

ORDER

This petition has been filed by the Petitioner, North Eastern Electric Power Corporation Limited, for revision of tariff of Kopili Hydroelectric Project (4 x 50 MW) (in short 'the generating station') for the period 2014-19 in terms of Regulation 8(1) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (in short 'the 2014 Tariff Regulations').

2. The generating station comprises of four units of 50 MW and the date of commercial operation (COD) of the units of the generating station are as under:

Units	COD
Unit-I	5.7.1988
Unit-II	22.6.1988
Unit-III	1.5.1997
Unit-IV /Generating station	12.7.1997

3. Petition No. 46/GT/2015 was filed by the Petitioner for approval of tariff of the generating station for the period 2014-19 and the Commission vide its order dated 13.1.2016 approved the capital cost and the annual fixed charges as under:

Capital Cost

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	27835.74	28466.61	29026.05	29141.05	29288.05
Admitted additional capitalization	630.87	559.44	115.00	147.00	37.00
Closing Capital Cost	28466.61	29026.05	29141.05	29288.05	29325.05

Annual Fixed Charges

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity	2835.82	2873.09	2894.21	2902.41	2908.17
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Depreciation	589.68	623.47	648.69	659.14	666.67
Interest on Working Capital	417.64	441.78	466.85	492.88	520.49
O&M Expenses	6132.72	6540.18	6974.71	7438.11	7932.30
Total	**9975.85**	**10478.52**	**10984.46**	**11492.54**	**12027.64**

4. The Respondent No.1, Assam Power Distribution Company Limited (APDCL) vide affidavit dated 3.8.2021 has filed its reply and the Petitioner vide affidavit dated 10.8.2021, has filed its rejoinder to the said reply. The Commission vide Record of the Proceedings (ROP) of the hearing dated 25.1.2022, directed the Petitioner to submit certain additional information and reserved order in the petition. In response, the Petitioner vide affidavit dated 25.2.2022 has filed the additional information after serving copies to the Respondents. Pursuant to order being reserved, after prudence check of the information, the Petitioner was directed to furnish clarification on the following: clarify the following:

(a) The Petitioner had claimed Design, Fabrication, Supply erection and Commissioning of spillway gates operation in 2018-19 in Petition No. 42/GT/2015 (for Khandong H.E.P) and the Commission vide order dated 13.1.2016 had allowed the same for Rs. 3040.95 lakh. However, the Petitioner has now claimed the above assets/works in the present Petition. The same needs to be clarified.

(b) Reason for claiming Leasehold land – (Township in 2016-17).

(c) It is noticed that the Petitioner has filed Petition No. 189/MP/2022 for R&M of the Kopili H.E.P. In this regard, a certificate to effect that these expenditures are not part of claims in the present Petitioner is required to be submitted by the Petitioner.

5. In response, the Petitioner vide affidavit dated 27.2.2023, has furnished the clarification/information on the above, after serving copy to the Respondents. Taking into consideration the submissions of the parties and the documents available on record, we proceed for truing-up of tariff for the period 2014-19, after prudence check, as stated in the subsequent paragraphs.

Truing-up of tariff for the period 2014-19

6. Regulation 8(1) of the 2014 Tariff Regulations provides as under:

> *"8. Truing up*
>
> *(1) The Commission shall carry out truing up exercise along with the tariff petition filed for the next tariff period, with respect to the capital expenditure including additional capital expenditure incurred up to 31.3.2019, as admitted by the Commission after prudence check at the time of truing up:*
>
> *Provided that the generating company or the transmission licensee, as the case may be, shall make an application for interim truing up of capital expenditure including additional capital expenditure in FY 2016-17."*

7. The Petitioner has filed the present petition for truing-up of tariff based on the actual capital expenditure incurred for the period 2014-19, as per audited accounts. Accordingly, the capital cost and the annual fixed charges claimed by the Petitioner are as under:

Capital cost claimed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	27835.74	31621.31	32942.60	36191.39	36389.96
Add: Addition during the year/ period	3785.57	1321.29	3248.79	198.57	3228.05
Closing Capital Cost	**31621.31**	**32942.60**	**36191.39**	**36389.96**	**39618.01**
Average Capital Cost	29728.53	32281.95	34566.99	36290.67	38003.99

Annual Fixed Charges claimed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	667.00	807.60	941.57	1044.19	1152.17
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	2934.65	3289.35	3253.34	3754.46	3478.73
Interest on Working Capital	421.69	455.60	481.86	521.36	544.80
O&M Expenses	6132.72	6540.18	6974.71	7438.11	7932.30
Total	**10156.06**	**11092.73**	**11651.48**	**12758.11**	**13108.00**

Capital Cost

8. Regulation 9 (3) of the 2014 Tariff Regulations provides as under:

> *"9. Capital Cost:*
> *(3) The Capital cost of an existing project shall include the following:*
> *(a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;*
>
> *(b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and*
>
> *(c) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15.*
>
> *(4) The capital cost in case of existing/new hydro generating station shall also include:*
> *(a) cost of approved rehabilitation and resettlement (R&R) plan of the project inconformity with National R&R Policy and R&R package as approved; and*
>
> *(b) cost of the developer's 10% contribution towards Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) project in the affected area."*

9. The Commission vide its order dated 13.1.2016 in Petition No. 46/GT/2015 had approved the opening capital cost of Rs. 27835.74 lakh, as on 1.4.2014. Accordingly, the same capital cost of Rs. 27835.74 lakh, has been considered as the opening capital cost as on 1.4.2014, for the purpose of truing-up of tariff for the period 2014-19.

Additional Capital Expenditure

10. Regulation 14(3) of the 2014 Tariff Regulations provides as under:

> *"14.(3) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts after the cut-off date, may be admitted by the Commission, subject to prudence check:*
>
> *(i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;*
>
> *(ii) Change in law or compliance of any existing law;*
>
> *(iii) Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal security;*
>
> *(iv) Deferred works relating to ash pond or ash handling system in the original scope of work;*
>
> *(v) Any liability for works executed prior to the cut-off date, after prudence check of the details of such un-discharged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.;*

(vi) Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;

(vii) Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal / lignite-based stations or transmission system as the case may be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;

(viii) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;

(ix) In case of transmission system, any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement due to obsolesce of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system; and

(x) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialization of coal supply corresponding to full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station:

Provided that any expenditure on acquiring the minor items or the assets including tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, computers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. 1.4.2014:

Provided further that any capital expenditure other than that of the nature specified above in (i) to (iv) in case of coal/lignite-based station shall be met out of compensation allowance:

Provided also that if any expenditure has been claimed under Renovation and Modernisation (R&M), repairs and maintenance under (O&M) expenses and Compensation Allowance, same expenditure cannot be claimed under this regulation.

11. The Commission vide its order dated 13.1.2016 in Petition No. 46/GT/2015 had allowed the year-wise, net projected additional capital expenditure, for the period 2014-19 as under:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
630.87	559.44	115.00	147.00	37.00

12. The Petitioner has submitted that there is variation between the additional capital expenditure allowed by order dated 13.1.2016 in Petition No. 46/GT/2015 and the actual capital expenditure incurred by the Petitioner for the period 2014-19. Accordingly, the detailed break-up of the additional capital expenditure claimed by the Petitioner, is as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Additions during the year (a)	4665.91	1643.33	3267.37	198.57	3314.72
Deletions during the year (b)	880.34	322.04	18.58	0.00	86.67
Discharges during the year (c)	0.00	0.00	0.00	0.00	0.00
Net additional capital expenditure claimed (d)=(a) - (b)+(c)	3785.57	1321.29	3248.79	198.57	3228.05

13. The Commission vide its ROP of hearing dated 25.1.2022, directed the Petitioner to furnish the details of year-wise additional capital expenditure in the specified formats in Form 9A, Form 9Bi along with relevant provisions of the regulation, under which additional capital expenditure has been claimed along with detailed justification for the same. The Petitioner, in response, has submitted details of the same, along with justification. However, it is noticed that despite the specific direction of the Commission, as above, the Petitioner has not furnished the relevant provisions of the Regulations, under which the additional capital expenditure has been claimed. Accordingly, based on the information available on record, we proceed for truing-up the tariff of the generating station, after prudence check, in terms of the provisions of the 2014 Tariff Regulations, as stated in the subsequent paragraphs.

14. The details of the additional capital expenditure claimed for the period 2014-19 are as under:

Sl. No	Regulations	Amount (*Rs. in lakh*)				
		2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
1	14(3)(viii)	621.33	385.63	1456.44	198.57	0.00
2	Claims without indicating the provisions of the Regulation	4044.58	1257.70	1810.93	0.00	3314.72
3	14(3) (De-capitalization)	880.34	322.04	18.58	0.00	86.67
	Total as per Form-9A (Net)	**3785.57**	**1321.29**	**3248.79**	**198.57**	**3228.05**

15. As regards the actual additional capital expenditure claimed, the Petitioner has submitted the following:

> *"The additional capital expenditure claimed relates to certain works which were necessarily undertaken for efficient operation of the generating station or were part of the original scope of work. The capital expenditure on this account and justification for carrying out these works has been included in the claim.*
>
> *There are certain expenditures of capital nature, which have been allowed by the Commission while determining AFC for Kopili Hydro Electric power Plant for the period of 2014-19 vide its order order dated 13.01.2016 in Petition No. 46/GT/2015 but could not be completed by the petitioner within the stipulated period of 31.03.2019 due to various practical constraints. It is humble submission of NEEPCO before the Hon'ble Commission for allowing to carry on the remaining works relating to the aforesaid allowed expenditures during the subsequent years based on the application submitted before the CERC for the control period 2019-24.*
>
> *The impact on AFC due to the capitalization is being claimed after excluding the amount incurred on minor items/ expenditures of O&M nature/spares etc., which are not allowable as additional capitalization for Tariff purpose as per provisions of Tariff Regulations, 2014.*

16. The Respondent, APDCL has submitted that the additional capital expenditure claimed by the Petitioner is required to be within the limit of additional capital expenditure allowed by order dated 13.1.2016 in Petition No. 46/GT/2015. It has also submitted that the Commission may look into the same and allow the additional capital expenditure, only after prudence check. The Petitioner, in its rejoinder has clarified that it has furnished detailed justification for the actual additional capital expenditure claimed, duly supported by auditor certificate, in terms of the 2014 Tariff Regulations.

17. The matter has been considered. It is observed that in Petition No. 46/GT/2015, the Petitioner had claimed projected additional capital expenditure in respect of certain assets/ works, which were projected to be capitalized during the period 2014-19, and the same was allowed by order dated 13.1.2016. However, in the present petition, the

Petitioner has also claimed actual additional capital expenditure in respect of some new assets/ works, which were not projected earlier and, hence, there is variation between the actual additional capital expenditure claimed as against the projected additional capital expenditure allowed by order dated 13.1.2016. It is further observed that the Petitioner has not indicated the specific provision of the regelation, in respect of its claim, which includes items/works such as Cooler tubes, major overhauling works, replacement of various components damaged due to acidic nature of water, etc., and some new expenditure pertaining to R&M of some major components. As regards the expenditure claimed under the head 'replacement of various components damaged due to acidic nature of water', the Commission vide its order dated 13.1.2016 in Petition No. 46/GT/2015 had observed the following:

> *"13. It is evident from the above submission that though the petitioner had incurred expenditure on replacement of corroded components during 2009-14, major portion of the expenditure which are in the nature of O&M expenses could not be capitalized. The expenses towards replacement of worn out/ corroded components have been charged to O&M expenses by the petitioner for the period 2009-14 and the same has been considered in the normative O&M expenses allowed to the generating station under the 2014 Tariff Regulations applicable for the period 2014-19. Accordingly, the projected additional capital expenditure claimed by the petitioner during the period 2014-19 i.e expenditure on replacement of cooler tubes, small valves, annual overhauling of turbines etc., which are in the nature of O&M expenses have not been considered for capitalization for the purpose of tariff by this order."*

18. In view of the above, the aforesaid items/works, which were not allowed by order dated 13.1.2016, has not been considered/allowed, in this order. As regards other claims, such as R&M works, it is pointed out that the Petitioner has filed Petition No.189/MP/2022 before this Commission, for approval of R&M of the generating station. It is noticed that DPR for the same has been approved by CEA. However, considering the status of the project (under R&M stage) and considering the nature of the expenditure, such as R&M of governors, replacement of liners, etc. the same are examined and dealt with on merits in the following paragraphs. In view of this, these

expenditure/ works shall not form part of the R&M proposal in Petition No. 189/MP/2022 filed by the Petitioner before this Commission, for consideration.

19. Based on the above, the year-wise additional capital expenditure claimed claims by the Petitioner is examined below:

2014-15

(Rs. in lakh)

Sl. No.	Clause		Amount *(Rs in lakh)*
(a)	14(3)(viii)	Additional works/expenditure which has become necessary for efficient and successful operation of plant	621.33
(b)	Claims containing no provisions of the Regulation		4044.58
	Total additional capital expenditure claimed		**4665.91**

(a) Claims under Regulation 14(3)(viii) of the 2014 Tariff Regulations

Sl. No	Details of the claim	Amount claimed *(Rs. in lakh)*	Justification by the Petitioner	Remarks on admissibility	Amount Allowed *(Rs. in lakh)*
Items allowed in order dated 13.1.2016 in Petition No. 46/GT/2015					
1	Switchgear including Cable Connection. Deposit work construction of Bay for 5 MVA 132/33 Transformer at Kopili Switchyard.	163.94	These assets/works claimed were admitted vide Tariff order dated 13.1.2016 in Petition No. 46/GT/2015 (projected item No. 4 of 2014-15).	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 163.93 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	163.94

Sl. No	Details of the claim	Amount claimed (Rs. In lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. In lakh)
2	Transformer Rating of 100 Amps & above, 1 No. winding limb consisting of HV, LV coil and tap for 20 MVA, 11/220 kV EMCO make generator Transformer.	102.40	These assets/works claimed were admitted vide Tariff order dated 13.1.2016 in Petition No. 46/GT/2015 (projected item No. 14 of 2014-15). The Commission has approved amount of Rs. 234.81 lakh during 2014-15. Further the Petitioner has also submitted that these works have been approved in principle by CEA.	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 234.81 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old replaced asset/work is considered under 'De-capitalization' in 2014-15.	102.40
3.	Supply and Delivery of cables to Kopili Hydro Electric Plant. (Unit-1 & 2)	25.48	These assets/works claimed were admitted vide Tariff order dated 13.1.2016 in Petition No. 46/GT/2015 (projected item No. 13 of 2014-15).	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 14.23 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The old and replaced assets/works has been considered under 'Assumed Deletions'.	25.48
4.	Tools and plants (ordinary). BCH Make citation submersible pump starter with auto unit/ Crompton make &	1.18	These assets/works claimed were admitted vide Tariff order dated 13.1.2016 in Petition No. 46/GT/2015 (projected item No. 18 of 2014-15) on account of submersible pump.	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 1.18 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015.	1.18

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
	other submersible pumps.			Considering the fact that the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed**. The old and replaced assets/works is considered under 'Assumed Deletions'.	
New Items					
5.	Transformer Rating of 100 Amps & above. Oil Cooler Tubes for CGL make generator Transformer	5.85	In justification, the Petitioner submitted that considering the very unique operating condition of Acidic reservoir water, Commission and CEA has allowed the cost of changing coolers periodically, in several instances in the past, as there is no standard solution available to the problem. The Petitioner on the same principle, has requested to allow the expenditure on account of Transformer oil cooler tubes. It is further submitted that the Commission vide its Order dated 7.10.2015 in Petition No. 456/GT/2014 has allowed the expenditure on account of replacement of Gate valves, Cooler tube bundles and Runner cone under Regulation 9(2)(iv) of the 2014 Tariff Regulations considering the acidic nature of the water and the damage of underwater parts and the problem faced in keeping the plant in operation (Sl. No. 3,4 and 5 of 2012-13).	The Petitioner has submitted that Commission had allowed the said items for the period 2009-14. However, it is noticed that Commission had not allowed the said expenditure vide its order dated 13.1.2016 in Petition No. 46/GT/2015 on the ground that the same are in the nature of revenue expenditure and such expenditure already form part of the normative O&M expenses allowed to the generating station for the period 2014-19. as quoted under para 16 above. Accordingly, the claims of the Petitioner are **not allowed.**	0.00
6.	Transformer Rating of 100 Amps & above. Oil Cooler Tubes for CGL make generator Transformer	11.70			0.00
7.	Transformer Rating of 100 Amps & above. Oil Cooler Tubes for CGL make generator Transformer	34.02			0.00
8.	Auxiliary Spares for Generator VT Pump & shaft	8.19	The Petitioner submitted that the spares of VT pumps failed due to acidic water and the same had to be replaced to pump out	The additional capital expenditure claimed under this head, is in the nature of spares and has been claimed after the	0.00

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
			the leakage water inside the PH for safe operation of the generating station. The Commission vide its Order dated 13.1.2016 in Petition No. 47/GT/2015 has allowed similar expenditure for Diesel pump and Submersible pump. The reason for allowing the said expenditure is as shown "Need based expenditure is allowed under Regulation 14(3)(viii) of 2014 Tariff Regulations, as the asset will facilitate successful and efficient operation of the plant." (Sl. no. 17 and 18 of 2014-15). The Petitioner further submitted that as these assets are of similar nature, the instant cost may please be allowed.	cut-off date of the generating station. Hence, the claim for additional capitalization is **not allowed.** However, the spares are allowed as additional O&M expenses on actual consumption. The corresponding decapitalization on account of the same is also **not allowed**.	
9.	Major overhauling works in BHEL make hydro turbine unit # III (SS Top cover)	107.04	The Petitioner has submitted that due to acidification of reservoir water the Top Cover and Pivot ring got corroded and needed to be replaced for smooth and efficient operation of the unit. It is further stated that the Commission vide its Order dated 30.9.2011 in Petition No. 294/2009 has allowed similar expenditure on SS Top Cover and Pivot Ring under (a) Assets allowed towards replacement, repairs and new assets on account of acidic nature of water in 2011-12. Considering the very unique operating condition of Acidic reservoir water, and in the same principle the cost of SS Top Cover and Pivot Ring for Unit # 3 in the instant cost may please be allowed.	The Petitioner has submitted that the Commission had allowed the said items for the period 2009-14. It is however noticed that Commission had not allowed the said expenditure vide its order dated 13.1.2016 in Petition No. 46/GT/2015 on the ground that the same are in the nature of revenue expenditure and such expenditure already form part of the normative O&M expenses allowed to the generating station for the period 2014-19, as quoted under para 16 above. Accordingly, the claims of the Petitioner are **not allowed.**	0.00
10.	Pivot ring for Unit #III	58.45			0.00

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
11.	Major overhauling works in BHEL make hydro turbine unit # III	54.54	The Petitioner has submitted that due to wear and tear of the turbine parts generation output was reduced. So, replacement of the parts was utmost necessary for smooth efficient operation of the unit and to get maximum output. It is further stated that the Commission vide its Order dated 30.9.2011 in Petition No. 294/2009 has allowed similar expenditure on repairs of eroded under water parts under (a) Assets allowed towards replacement, repairs and new assets on account of acidic nature of water for 2009-10, 2010-11,2011-12 and 2012-13. Considering the very unique operating condition of Acidic reservoir water, and in the same principle the cost of overhauling of Unit III underwater parts may please be allowed.	The Petitioner has submitted that the Commission had allowed the said items for the period 2009-14. It is however noticed that Commission had not allowed the said expenditure vide its order dated 13.1.2016 in Petition No. 46/GT/2015 on the ground that the same are in the nature of revenue expenditure and such expenditure already form part of the normative O&M expenses allowed to the generating station for the period 2014-19. as quoted under para 16 above. Accordingly, the claims of the Petitioner are **not allowed.**	0.00
12.	Major overhauling works of Kopili Unit # III	11.94			0.00
13.	Major overhauling works in BHEL make Hydro Turbine Generator Unit # 3	32.44			0.00
14.	TGB Cooler Tubes for Turbine for Unit # III	4.16	In justification, the Petitioner submitted that considering the very unique operating condition of Acidic reservoir water, Commission and CEA has allowed the cost of changing coolers periodically, in several instances in the past, as there is no standard solution available to the problem. The Petitioner on the same principle, has requested to allow the expenditure on account of Transformer oil cooler tubes. It is further submitted that the Commission vide its Order dated 7.10.2015 in Petition No. 456/GT/2014 has allowed the	The Petitioner has submitted that the Commission had allowed the said items for the period 2009-14. It is however noticed that Commission had not allowed the said expenditure vide its order dated 13.1.2016 in Petition No. 46/GT/2015 on the ground that the same are in the nature of revenue expenditure and such expenditure already form part of the normative O&M expenses allowed to the generating station for the period 2014-19. as quoted under para 16 above. Accordingly, the	0.00

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
			expenditure on account of replacement of Gate valves, Cooler tube bundles and Runner cone under Regulation 9(2)(iv) of the 2014 Tariff Regulations considering the acidic nature of the water and the damage of underwater parts and the problem faced in keeping the plant in operation (Sl. No. 3,4 and 5 of 2012-13).	claims of the Petitioner are **not allowed.**	
Claims containing no provisions of the Regulation					
15.	Helicon Progressive cavity Grout Pump	6.72	In Justification the Petitioner has submitted that due to the acidic reservoir water, the turbine components get corroded leading to leakage inside the powerhouse. The pumps were used for grouting the civilities to arrest the leakage and flooding of the powerhouse. The Commission vide its Order dated 13.1.2016 in Petition No. 46/GT/2015 has allowed similar expenditure for Diesel pump and Submersible pump. The reason for allowing the said expenditure is as shown "Need based expenditure is allowed under Regulation 14(3)(viii) of 2014 Tariff Regulations, as the asset will facilitate successful and efficient operation of the plant." (Sl. no.17 and 18 of 2014-15). In line with it, the cost of Helicon Progressive cavity Grout Pump for grouting of voids in underwater parts which was necessitated to arrest the leakage caused due to acidic water may please be allowed.	The additional capital expenditure claimed is in the nature of O&M expenses, and hence, the claim is **not allowed.**	0.00

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
16.	Alfa Laval make oil purifier	8.64	Puncture of bearing cooler tubes due to acidic water led to mixing of water and oil in the bearing houses. The oil purifier was used for filtration of the water from the oil for avoid seizure of the bearing pads thereby leading to outage of the units. The Commission vide its order dated 13.1.2016 in Petition No. 46/GT/2015 has allowed similar expenditure for turbine oil filtration unit from M/s Alfa level (India) Ltd pump under (b) Assets allowed towards replacement, repairs and new assets other than due to acidic nature of water 2009-10. As the instant cost is of similar nature for turbine oil filtration unit from M/s Alfa level (India) Ltd pump, the same may please be allowed.	Considering the nature and requirement of asset and since the said asset will facilitate the efficient and successful operation of the generating station, the expenditure claimed is **allowed**.	8.64
17.	Capitalisation of Renovation & Modernisation of Kopili unit # I & II, Phase -1, under project code 0700 & Trial Balance of provisional project code-0703, 2014-15	4023.96	Although the works are part of R&M but to keep the machine in working condition because of acidic damage the Petitioner has requested the Commission to allow as additional capitalization and will be not include in the petition for R&M of the generating station. The Respondent APDCL submitted that any correspondence regarding the work carried out with CEA are to be submitted by the Petitioner. In response the Petitioner has submitted that the Replacement / erection & Commissioning of material on account of acidification of reservoir water and technical obsolescence. These works have been in	It was observed that the said expenditure form part of the R&M expenses for which the Petitioner has filed a separate Petition i.e., Petition No. 189/MP/ 2022 before this Commission, for approval. Accordingly, the Petitioner was directed vide letter dated 31.1.2023, to submit a certificate to the effect that the expenditure claimed do not form part of the claims in Petition No. 189/MP/2022. In response, the Petitioner, has furnished the Auditor's Certificate in support of the same. Based on the submissions of the Petitioner and	4023.96
18.	R&M works of Kopili Unit-1 & 2. (Pole keys, socket head cap screw, timer, stopper plant & link pin)	5.27			5.27

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
			principle approved by CEA.	considering the nature of the expenditure on the assets / works, which will facilitate the successful and efficient operation of plant, the claim of the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding decapitalization is also considered under 'Assumed Deletions'. However, the Petitioner shall ensure that the additional capital expenditure claimed and allowed, shall not form part of its claim in Petition No. 189/MP/2022, filed by the Petitioner and pending consideration of the Commission.	
	Total amount claimed	**4665.91**			
	Total amount allowed				**4330.86**

20. Based on the above, the total additional expenditure of Rs. 4330.86 lakh is allowed in 2014-15.

2015-16

21. The details of the actual additional capital expenditure claimed by the Petitioner in 2015-16 under the various provisions of Regulation 14(3) of the 2014 Tariff Regulations are examined below:

Sl. No.	Regulation		Amount (Rs in lakh)
(a)	14(3)(viii)	Additional works/expenditure which has become necessary for efficient and successful operation of plant	385.63
(b)	Claims containing no		1257.70

Sl. No.	Regulation	Amount (Rs in lakh)
	provisions of the Regulation	
	Total additional capital expenditure claimed	**1643.33**

(a) Claims under Regulation 14(3)(viii) of the 2014 Tariff Regulations

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
Items allowed in order dated 13.1.2016 in Petition No. 46/GT/2015					
1	Supply, installation, testing & commissioning of CGL make complete GT winding along with transformer accessories of Kopili P.S., KHEP, NEEPCO Ltd. (Unit 3 & 4)	77.19	The Petitioner submitted that this item was not claimed in the original Tariff petitions for the year 2014-15. However, Rs. 91.59 lakhs were allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations, in Tariff order against petition number 46/GT/2015 dated 13.1.2016 as the asset will facilitate successful and efficient operation of the plant (Sl. No. 14 0f 2014-15). The failure of the transformer was due corrosion of the cooler tubes by acidic water. Similar expenditure has been allowed by CERC in 2014-15. Since the cause and cost are similar in nature, this expenditure may please be allowed.	It is observed from the submissions of the Petitioner that the Commission vide its order dated 13.1.2016 in Petition No. 46/GT/2015 had approved the works of supply including installation, testing and commissioning of 2 No. of spare winding limbs comprising of HV, LV & Tap Coil for 20 MVA, 11/220 kV EMCO make generator Transformer including installation, testing and Commissioning. However, the asset referred by the Commission is different from the current asset. However, considering the nature and requirement of asset, which is to facilitate the efficient and successful operation of the generating station, the claim of the Petitioner, is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old replaced asset/work has been considered under 'De-capitalization' in 2015-16.	77.19
2.	Installation & Commissioning of New Governing system suitable	273.33	These assets/works claimed were admitted vide Tariff order dated 13.1.2016 in Petition No.	The additional capital expenditure claimed under these heads were allowed on projected	273.33

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
	for implementing FGMO/RGMO in BHEL make hydro Turbine Generator Unit 3& 4 of Kopili PS.		46/GT/2015 (projected item No. 13 of 2014-15).	basis for Rs. 283.94 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the claim is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old replaced asset/work has been considered under 'De-capitalization' in 2015- 16.	
	Oil cooler Tubes of 70:30CU:NI	35.11	In justification, the Petitioner submitted that considering the very unique operating condition of Acidic reservoir water, Commission and CEA has allowed the cost of changing coolers periodically, in several instances in the past, as there is no standard solution available to the problem. The Petitioner on the same principle, has requested to allow the expenditure on account of Transformer oil cooler tubes. It is further submitted that the Commission vide its Order dated 7.10.2015 in Petition No. 456/GT/2014 has allowed the expenditure on account of replacement of Gate valves, Cooler tube bundles and Runner cone under Regulation 9(2)(iv) of the 2014 Tariff Regulations considering the acidic nature of the water and the damage of underwater parts and the problem faced in keeping	The Petitioner has submitted that the Commission had allowed the said items for the period 2009-14. It is however noticed that Commission had not allowed the said expenditure vide its order dated 13.1.2016 in Petition No. 46/GT/2015 on the ground that the same are in the nature of revenue expenditure and such expenditure already form part of the normative O&M expenses allowed to the generating station for the period 2014-19. as quoted under para 16 above. Accordingly, the claims of the Petitioner are **not allowed.**	0.00

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
			the plant in operation (Sl. No. 3,4 and 5 of 2012-13).		
Claims containing no provisions of the Regulation					
4	OFAF Cooler Assembly with blower unit	28.87	The Petition in justification has submitted that this modification is required due to acidification of reservoir water such that a permanent solution can be made to arrest the damage of transformer winding and implication of transformer oil. The Commission has allowed Rs. 80 Lakh (Sl. No. 11 of 2015-16), Rs 40 Lakh (Sl. No. 2 of 2016-17 and Rs 40 lakh (Sl. No. 1 of 2017-18)) under regulation 14(3)(viii) of the 2014 Tariff Regulations, as the asset will facilitate successful and efficient operation of the plant.	The additional capital expenditure claimed under these head was allowed on projected basis for Rs. 160.00 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	28.87
5.	Ultrasonic thickness gauge	0.14	The Petitioner in Justification has submitted that this item was not claimed in the original Tariff petitions for the year 2015-16. The ultrasonic thickness gauge was procured to monitor the thickness the of the underwater corroded parts caused by the acidic water for safe operation of the plant. It is further submitted that the Commission vide its Order dated 13.1.2016 in Petition No. 46/GT/2015 has allowed similar expenditure for Diesel pump and Submersible pump. The reason for allowing the said expenditure is as shown "Need based expenditure is allowed under Regulation 14(3)(viii) of 2014 Tariff Regulations, as	The additional capital expenditure claimed is minor in nature and hence **not allowed**, in terms of the first proviso to Regulation 14(3) of the 2014 Tariff Regulations.	0.00

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
			the asset will facilitate successful and efficient operation of the plant." (Sl. no.17 and 18 of 2014-15). In line with it, the cost of the ultrasonic gauge measurement may please be allowed.		
6.	Supply & delivery 101 pH meters	0.54	The Petitioner in Justification has submitted that this item was not claimed in the original Tariff petitions for the year 2015-16. The pH meter was procured to monitor the pH value of the acidic water of the reservoir so that precautionary measures could be taken to avoid corrosion of underwater parts of the unit and the penstock. It is further submitted that the Commission vide its Order dated 13.1.2016 in Petition No. 46/GT/2015 has allowed similar expenditure for Diesel pump and Submersible pump. The reason for allowing the said expenditure is as shown "Need based expenditure is allowed under Regulation 14(3)(viii) of 2014 Tariff Regulations, as the asset will facilitate successful and efficient operation of the plant." (Sl. no.17 and 18 of 2014-15). In line with it, the cost of the pH meter may please be allowed.	The additional capital expenditure claimed is minor in nature and hence **not allowed** in terms of the first proviso to Regulation 14(3) of the 2014 Tariff Regulations.	0.00
7.	Open well submersible water pump	0.11	The Petitioner in justification submitted that this item was not claimed in the original Tariff petitions for the year 2015-16. It is further submitted that the Commission vide its Order dated 13.1.2016 in Petition No. 46/GT/2015	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 4.00 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that	0.11
8.	Kirloskar make 5HP at 1500 RPH water cooled diesel engine with base frame	0.64			0.64

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
9.	KSB make wk 65-multistage ,25 HP,2900 RPM pump motor set	1.68	has allowed similar expenditure for Diesel pump and Submersible pump. The reason for allowing the said expenditure is as shown "Need based expenditure is allowed under Regulation 14(3)(viii) of 2014 Tariff Regulations, as the asset will facilitate successful and efficient operation of the plant." (Sl. no.17 and 18 of 2014-15).	the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The decapitalization value of old and replaced assets/works has been considered under 'Assumed Deletions'.	1.68
10.	Plant & machinery In Generating Station (Kop)	6.53	The Petitioner in justification submitted that due to water leakage from turbine parts, the Powerhouse valve gallery floor gets flooded, and the Oil leakage unit tank gets submerged. This oil and water mixture along with sludge get pump to the Oil Pressure unit thereby mixing water and sludge with the oil in the OPU. This mixture of oil, water and sludge which is also used for governor functioning leads to malfunction of the governor. To filtrate the water from the mixture in the OPU tank, the oil filter machine was procured. The Commission vide Order dated 13.1.2016 in Petition No. 46/GT/2015 has allowed similar expenditure for turbine oil filtration unit from M/s Alfa level (India) Ltd pump under (b) Assets allowed towards replacement, repairs and new assets other than due to acidic nature of water 2009-10. As the instant cost is of similar nature for turbine oil filtration, the same may please be allowed.	As the expenditure claimed is in the nature of O&M expenses, the same is not allowed. The corresponding decapitalization on account of the same is also **not allowed**.	0.00
11.	Supply of turbine oil filter machine	28.44			0.00
12.	Freight charges for turbine oil filter	0.58			0.00

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
13.	Supply, installation, testing & commissioning of 2 nos. of Ingersoll Rand make HP Air Compressor (1 no. unit1&2 side and other Unit-3&4 side)	5.86	The Petitioner in justification submitted that this item was not claimed in the original Tariff petitions for the year 2015-16. However, in the Petition No. 46/GT/2015 dated 13.1.2016, the Commission has allowed expenditure of Rs. 6.00 Lakh under Regulation 14(3)(viii) of the 2014 Tariff Regulations, as the asset will facilitate successful and efficient operation of the plant. (Sl. No. 19 of 2014-15)	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 6.00 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old replaced asset/work has been considered under 'De-capitalization' in 2015- 16.	5.86
14.	Cooler tubes	3.51	In justification, the Petitioner submitted that considering the very unique operating condition of Acidic reservoir water, Commission and CEA has allowed the cost of changing coolers periodically, in several instances in the past, as there is no standard solution available to the problem. The Petitioner on the same principle, has requested to allow the expenditure on account of Transformer oil cooler tubes. It is further submitted that the Commission vide its Order dated 7.10.2015 in Petition No. 456/GT/2014 has allowed the expenditure on account of replacement of Gate valves, Cooler tube bundles and Runner cone under Regulation 9(2)(iv) of the 2014 Tariff Regulations considering	The Petitioner has submitted that the Commission had allowed the said items for the period 2009-14. It is however noticed that Commission had not allowed the said expenditure vide its order dated 13.1.2016 in Petition No. 46/GT/2015 on the ground that the same are in the nature of revenue expenditure and such expenditure already form part of the normative O&M expenses allowed to the generating station for the period 2014-19. as quoted under para 16 above. Accordingly, the claims of the Petitioner are **not allowed.**	0.00
15.	UGB oil coolers & TGB coolers for Unit 3 & 4.	13.10			0.00

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
			the acidic nature of the water and the damage of underwater parts and the problem faced in keeping the plant in operation (Sl. No. 3,4 and 5 of 2012-13).		
16.	Piston Ring & bush for GV	5.22	The Petitioner in justification has submitted that the Kopili Power Station was commissioned in two phases: First two units in 1988, and next two units in 1997. Some components of the first two units i.e., Kopili Unit 1 & 2 were becoming obsolete in phases, and it was becoming increasingly difficult to get spares & services. Moreover, new regulations like ABT, RGMO etc. came up, for which the old control and monitoring system were not suitable. During 2006 it was also discovered that the reservoir water is becoming acidic leading to frequent failures of underwater parts. Therefore, it was essential to carry out R&M of Kopili Unit 1&2 to keep up reliability of generation. The matter was taken up with CEA and an expert team of CEA visited site July 2006 as per request of the Petitioner's Company for finalization of scope of work of proposed R&M of Kopili. CEA through their letter dated 25.7.2008 has technically cleared the scheme and intimated that CEA concurrence is not required as the estimated cost is lower than 500 crores. The issue was raised in 7th NER Power Committee meeting held on 23rd and 24th February, 2009, and	It was observed that the said expenditure form part of the R&M expenses for which the Petitioner has filed a separate Petition i.e., Petition No. 189/MP/ 2022 before this Commission, for approval. Accordingly, the Petitioner was directed vide letter dated 31.1.2023, to submit a certificate to the effect that the expenditure claimed do not form part of the claims in Petition No. 189/MP/2022. In response, the Petitioner, has furnished the Auditor's Certificate in support of the same. Based on the submissions of the Petitioner and considering the nature of the expenditure on the assets / works, which will facilitate the successful and efficient operation of plant, the claim of the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old replaced asset/work has been considered under 'De-capitalization' in 2015-16. However, the Petitioner shall ensure that the additional capital expenditure claimed and allowed, do not form part of the claim in Petition No.	5.22
17.	Gate valve 250 NB & top cover drain system	14.78			14.78
18.	R& M of Kopili Unit I & II	108.04			108.04
19.	Stator winding & insulation materials and temperature measuring devices	404.80			404.80

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
			deliberated in presence of the beneficiaries. NERPC meeting – constituents agreed. The matter was taken up with OEM of the plant, that is M/s BHEL. After series of discussion and communications, a meeting was held with M/s BHEL experts in Shelling on 5.11.2008 to finalize the scope of work of R&M of these units. In the 149th Meeting of Board of Directors of NEEPCO approved the proposal of R&M of Kopili at an estimated cost Rs. 2877.73 Lakhs directly through OEM. i.e., M/s BHEL as the first phase, which was later revised to Rs. 3521.30 lakhs. Another 15.01 Crores was approved by the BOD as the second phase of the R&M works. Letter of Intent was placed to BHEL on 19.2.2011 after a series of discussions and negotiations with BHEL. All relevant documents have been enclosed herewith. From the above it can be seen that the expenditure against R&M of Kopili Unit 1&2 are technically justified and carried out observing all formalities, and therefore requested to be admitted as additional capital expenditure. The same amount shall not be claimed under R&M works.	189/MP/2022, which is pending consideration of the Commission.	
20	Spares for governor	14.76	Due to acidification of reservoir water, underwater parts of Turbine get corroded	The additional capital expenditure under this head are in the nature of spares and is claimed	0.00

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
21	Turbine spares (self-lubricating lower bushes)	7.17	frequently which needs to be replaced/ repaired for smooth functioning of the units. Also, the puncture of cooler tubes of bearing houses leads to failure of the bearings which also necessitates replacement of the bearings. Considering the very unique operating condition of Acidic reservoir water, The Commission has allowed the cost of changing such items periodically in the past, as there is no standard solution available to the problem. In the same principle, the instant cost may please be allowed.	after the cut-off date. Hence, the, capitalization of the amounts are **not allowed,** after the cut-off date. However, the spares are allowed as additional O&M expenses on actual consumption. The corresponding decapitalization on account of the same is also **not allowed.**	0.00
22	Turbine spares such as Top cover SS, Pivot Ring, Guide vanes for Unit 3 & 4 - mismatch of top cover	172.91			0.00
23	Freight Charges against transportation of above materials	2.15			0.00
24.	Turbine and generator spares such as Valve assembly SS, Rotary com switch for Unit 3 & 4.	27.06			0.00
25.	Thrust bearing pads	43.35			0.00
26.	Turbine spares	63.03			0.00
27.	Turbine spares	27.70			0.00
28.	Cartridge for OPU Pump, Eye end valves & bolts	19.05			0.00
29.	safety release valves, non-return valves, fixed ring lower	24.03			0.00
30.	Turbine spares	13.38			0.00
31.	Rotor lead assembly, piston ring etc	37.18			0.00
32.	Spares for guide vanes	84.86			0.00
33.	Major overhauling works of Kopili Unit -IV	89.60	The Petitioner has submitted that due to wear and tear of the turbine parts generation output was reduced. So, replacement of the parts was utmost necessary for smooth efficient operation of the unit and to get maximum output.	It is observed that the Commission in its order dated 13.1.2016 in Petition No. 46/GT/2015 had not allowed the capitalisation of this asset/work, on the ground that the same is in the nature of revenue expenditure and such expenditure for	0.00

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
			It is further stated that the Commission vide its Order dated 30.9.2011 in Petition No. 294/2009 has allowed similar expenditure on repairs of eroded under water parts under (a) Assets allowed towards replacement, repairs and new assets on account of acidic nature of water for 2009-10, 2010-11,2011-12 and 2012-13. Considering the very unique operating condition of Acidic reservoir water, and in the same principle the cost of overhauling of Unit III underwater parts may please be allowed.	replacement of corroded components on account of acidification of reservoir water already form part of the normative O&M expenses allowed to the generating station for the period 2014-19. Accordingly, the claim of the Petitioner is **not allowed.**	
34.	Special Tools & Plant	8.63	The Petitioner in justification has submitted that this item was not claimed in the original Tariff petitions for the year 2015-16. The pump was procured to drain out the leakage water in the Umrong Dam Pump House. It is further submitted that the Commission vide its Order dated 13.1.2016 in Petition No. 46/GT/2015 has allowed similar expenditure for Diesel pump and Submersible pump. The reason for allowing the said expenditure is as shown "Need based expenditure is allowed under Regulation 14(3)(viii) of 2014 Tariff Regulations, as the asset will facilitate successful and efficient operation of the plant." (Sl. no.17 and 18 of 2014-15). In line with it, the cost of the pump may please be allowed.	The additional capital expenditure claimed is in the nature of tool and tackle and hence **not allowed** in terms of the first proviso to Regulation 14(3) of the 2014 Tariff Regulations. The corresponding decapitalization on account of the same is also **not allowed**.	0.00
	Total amount claimed	**1643.33**			

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
	Total amount allowed				**920.53**

22. Based on the above, the total additional expenditure of Rs. 920.53 lakh is allowed in 2015-16.

2016-17

23. The details of the actual additional capital expenditure claimed by the Petitioner in 2016-17 under the various provisions of Regulation 14(3) of the 2014 Tariff Regulations are examined below:

Sl. No.	Regulation		Amount (Rs in lakh)
(a)	14(3)(viii)	Additional works/expenditure which has become necessary for efficient and successful operation of plant	1456.44
(b)	Claims containing no provisions of the Regulation		1810.93
	Total additional capital expenditure claimed		**3267.37**

(a) Claims under Regulation 14(3)(viii) of the 2014 Tariff Regulations

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
Items allowed in order dated 13.1.2016 in Petition No. 46/GT/2015					
1	UMRONG DYKE Raising of Umrong dyke from EL 608.30 M to EL 612.60 M	4.64	These assets/works claimed were admitted vide Tariff order dated 13.1.2016 in Petition No. 46/GT/2015. It is further submitted that the Raising of Umrong Dyke Height Form EL 608.30M TO EL 612.60M. Increased storage capacity will increase generation capacity of Kopili and to support the 1st stage ext. and stage-II.	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 4.64 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	4.64

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
2.	TUNNEL: Supply, Fabrication and Erection of Stainless Steel liner over the existing steel liner of Umrong Tunnel at the tunnel outlet near Kopili Valve House, KHEP, Umrong, Assam	492.75	These assets/works claimed were admitted vide Tariff order dated 13.1.2016 in Petition No. 46/GT/2015. Due to severe acidity problem in the reservoir water it was necessary to replace all the items with stainless steel.	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 163.68 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that the additional capital expenditure incurred will facilitate efficient and successful operation of the generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The old and replaced assets/works has been considered under 'Assumed Deletions'.	492.75
3.	Jyoti make HS pump to Kopili PS unit 3 & 4 Supply, installation, testing & commissioning of 3 Nos of Cooling Water Pump for Unit-3 & 4 side.	7.74	These assets/works claimed were admitted vide Tariff order dated 13.1.2016 in Petition No. 46/GT/2015. Old pump sets are commissioned in the year 1996 and now these pump sets are giving frequent trouble which sometimes leads to forced outage of the unit.	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 60.00 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The old and replaced assets/works has been considered under 'Assumed Deletions'.	7.74
4.	Supply & Commissioning of Numerical Protection system for Unit-3 & 4 (Generator and Unit Control Panel) including LBB protection	118.36	These assets/works claimed were admitted vide order dated 13.1.2016 in Petition No. 46/GT/2015.	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 150.00 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that	118.36

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
				the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The old and replaced assets/works has been considered under 'Assumed deletions.	
New Items					
5	Leasehold Land - Township	1614.91	The Petitioner in justification of the same has not furnished any justification / documents for claiming the same and the Petitioner has not even stated the Regulation under which the same is claimed.	It is noticed that the Petitioner, in justification of the claim has not furnished any justification / documents. It has also not indicated the provision of the relevant regulation, under which the amounts are claimed, despite specific directions. Accordingly, the Petitioner was directed, vide letter dated 31.1.2023, to submit justification for the said claim. In response, the Petitioner has submitted that on adoption of Ind-AS by the Petitioner's Company during 2016-17, the said value of Rs. 1614.91 lakh was reclassified under the heads "non-current assets" and "Current assets" as "Prepayments (Leasehold land)" in books of Accounts, which was earlier classified under the head "Fixed Assets" under I-GAAP. The Commission has considered the submission of the Petitioner and is of the	0.00

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
				view that in the accounts of the Petitioner's Company, the entry of Rs. 1614.91 lakh was reclassified under the head non-current and current assets as prepayment (Leasehold Land) which was earlier classified under the Fixed Asset I-GAAP. Considering the fact that the said amount is due to reclassification of the asset from one head to another head, and since the Petitioner has claimed the expenditure on the approved asset, the claim of the Petitioner is **not allowed**.	
6	Transformer having a rating of 100 kV and above Supply including installation, testing & commissioning of 2(two) No. of Spare Winding Limbs comprising of HV. LV & Tap Coil for 20 MVA, 11/220 KV EMCO make Generator Transformer including installation, testing & Commissioning of Kopili P.S., KHEP. (Unit-1 & 2)	126.40	The Petitioner in justification has submitted that due to acidification of reservoir water, cooler tubes are getting punctured, and water is getting mixed up with transformer oil. As a result, existing transformer winding got damaged and hence replacement is required. The Petitioner further submitted that this item was not claimed in the original Tariff petitions for the year 2015-16. However, Rs. 234.81 lakhs was allowed under regulation 14(3)(viii) of the 2014 Tariff Regulations in Tariff order against petition No. 46/GT/2015 dated 13.1.2016 as the asset will facilitate successful and efficient operation of the plant (Sl. No. 14 0f 2014-15). The failure of the transformer was due corrosion of the cooler tubes by acidic water. Similar expenditure has	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 234.81 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old replaced asset/work has been considered under 'De-capitalization' in 2016- 17.	126.40

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
			been allowed by the Commission in 2014-15. Since the cause and cost are similar in nature, this expenditure may please be allowed.		
7	Implementation of RGMO/FGMO enable governing system unit-1&2	123.23	The Petitioner has submitted that the item is required under Regulation 5.2(f) of the CERC (Indian Electricity Grid Code) Regulations,2010. It is further submitted that the Commission vide its Order dated 13.1.2016 in Petition No. 46/GT/2015 has allowed Rs. 283.94 lakh under Regulation 14(3)(viii) of the 2014 Tariff Regulations, as the asset will facilitate successful and efficient operation of the plant. (Sl. No.2 of 2015-16) for 3 & 4.	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 283.94 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	123.23
8	Capitalised spares in the form of PPE	103.32	The Petitioner has submitted that the Petitioner has capitalized the spares as per the decision of the Competent Authority in the Form of PPE	The Petitioner has not furnished any information/details regarding the competent authority, based on whose' direction, the spares are capitalised. Since capitalisation of spares after the cut-off date is not permissible under the 2014 Tariff Regulations, the claim is **not allowed.**	0.00
9	Supply & manufacturing of twin tube type oil forced heat exchanger for Transformer for Unit 1 & 2	233.99	The Petition in justification has submitted that this modification is required due to acidification of reservoir water such that a permanent solution can be made to arrest the damage of transformer winding and implication of transformer oil. The Commission has allowed Rs. 80 Lakh (Sl. No. 11 of 2015-16), Rs 40 Lakh (Sl. No. 2 of 2016-17 and Rs 40 lakh (Sl. No. 1 of 2017-18)) under regulation 14(3)(viii) of the 2014 Tariff	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 160.00 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed** under Regulation	233.99

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
			Regulations, as the asset will facilitate successful and efficient operation of the plant.	14(3)(viii) of the 2014 Tariff Regulations.	
10	Procurement of Field coils for replacement	53.76	As the Khandong hydro units were commissioned in 1984 the field coils of the units have already completed the normal service period. Conditions of four numbers of coils are found to be deteriorating during testing which needs replacement.	It is observed that the Petitioner in justification of its claim has submitted/admitted that these assets are related to the Khandong Power station (another project of the Petitioner). In view of this, the claim is **not allowed**/considered for this generating station.	0.00
11	Re-active of assets for which decapitalization was done in the year 2014-15 & 2015-16	192.24	The Petitioner has furnished that the same is decided by the Competent Authority.	Since the additional capital expenditure claimed under this head, is in the nature of capital spares, and is claimed after the cut-off date, the same is **not allowed**. The corresponding decapitalization on account of the same is also **not allowed**.	0.00
Claims containing no provisions of the Regulation					
12	Surveillance equipment	2.26	Surveillance equipment enabling to predict sudden downstream impact due to increased water level. The expenditure was related to dam monitoring instruments in order to monitor the movement of Dam Blocks. Expenditure was essential for safety of the Dam.	Since the expenditure is for the safety and security of the generating station the same is **allowed** under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	2.26
13	Spare of Governor & Stator Coil	193.77	Being the capitalisation entry as decided by the competent authority	Since the additional capital expenditure claimed under this head is in the nature of capital spares, and is claimed after the cut-off date, the same is **not allowed**. The corresponding decapitalization on account of the same is also **not allowed**.	0.00
	Total amount claimed	**3267.37**			
	Total amount allowed				**1109.38**

24. Based on the above, the total additional expenditure of Rs. 1109.38 lakh in 2016-17 is allowed.

2017-18

25. The details of the actual additional capital expenditure claimed by the Petitioner in 2017-18 under the various provisions of Regulation 14(3) of the 2014 Tariff Regulations are examined below:

Sl. No.	Regulation		Amount *(Rs in lakh)*
(a)	14(3)(viii)	Additional works/expenditure which has become necessary for efficient and successful operation of plant	73.52
(b)	New Items		**125.05**
	Total additional capital expenditure claimed		**198.57**

(a) Claims under Regulation 14(3)(viii) of the 2014 Tariff Regulations

Sl. No	Details of the claim	Amount claimed *(Rs. in lakh)*	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed *(Rs. in lakh)*
Items allowed in order dated 13.1.2016 in Petition No. 46/GT/2015					
1.	Testing & Commissioning of 24V,150AH PLANTE TYPE LEAD ACID battery bank with stand at Kopili Power Station.	2.91	These assets/works claimed were admitted vide Tariff order dated 13.1.2016 in Petition No. 46/GT/2015. As the useful life of the existing 220 V Battery bank and 24 V battery bank was over, the same was replaced with a new set.	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 7.5 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The old and replaced assets/works has been considered under 'Assumed Deletions'.	2.91
2.	220V,425AH Battery consisting of 11 ono cells Incl. Supply, Testing & Commissioning.	49.79	These assets/works claimed were admitted vide Tariff order dated 13.1.2016 in Petition No. 46/GT/2015.		49.79
3.	Supply, installation, testing & commissioning of New Battery Charger	10.44	These assets/works claimed were admitted vide Tariff order dated 13.1.2016 in Petition No. 46/GT/2015.	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 10.00 lakh vide order dated	10.44

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
				13.1.2016 in Petition No. 46/GT/2015. Considering the fact that the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The old and replaced assets/works has been considered under 'Assumed Deletions'.	
4.	Supply, installation, testing & commissioning of New DC Distribution Board due to technical obsolescence	10.38	These assets/works claimed were admitted vide Tariff order dated 13.1.2016 in Petition No. 46/GT/2015.	The additional capital expenditure claimed under these heads were allowed on projected basis for Rs. 10.00 lakh vide order dated 13.1.2016 in Petition No. 46/GT/2015. Considering the fact that the additional capital expenditure incurred will facilitate the efficient and successful operation of the generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The old and replaced assets/works has been considered under 'Assumed deletions.	10.38
New Items					
5.	Supply, installation testing and commissioning of dissolved gas analyser	**34.03**	The Petitioner has submitted that the Dissolve Gas Analyser was procured as new asset for condition monitoring of the transformers.	The additional capital expenditure claimed is in the nature of tool and tackle and hence **not allowed** in terms of the first proviso to Regulation 14(3) of the 2014 Tariff Regulations. The corresponding decapitalization on account of the same is also **not allowed**.	0.00

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
6.	High value spares (components) for KHEP: MDL DC - DC PWRSUP220V DC.O/P 5V TO 24V ENQLT: UNO664AV.	**6.07**	All there are high value, long lead time, irregular and vital spares, failure of which can lead to outage of generation. These items were procured and capitalized as Insurance Spare as per provisions of AS2 Valuation of Inventories and AS10 - Accounting of fixed assets, issued by Ministry of Corporate Affairs - Govt. of India.	The additional capital expenditure claimed under this head are in the nature of capital spares and is claimed after the cut-off date. Hence, the claims are **not allowed**. The corresponding decapitalization on account of the same is also **not allowed**.	0.00
7.	High value spares (components) for KHEP: RELAY NUMERIC ROTOR E/F (STAGE1 & 2)	**6.12**			0.00
8.	MDL69203LMUAA, LOAD MONITORING UNIT.	**31.39**			0.00
9.	Cartridges for Toshiko make pump, model no.7352/54ANTS XPS2RNBALX.	**5.27**			0.00
10.	MDL692031A2AA (DVAR)3-PHASE FILTER MDL DINRAIL MOUNTED	**5.41**			0.00
11.	Interior Communication Equipment-Plant/Office	**3.30**	The intercommunication system was procured for better communication between the different divisions as no reliable wired or mobile network is available in the project. The cost may be considered as need based requirement	The additional capital expenditure claimed are minor in nature and hence **not allowed** in terms of the first proviso to Regulation 14(3) of the 2014 Tariff Regulations. The corresponding decapitalization on account of the same is also **not allowed**.	0.00
12.	Water supply & drains - plant	1.37	The expenditure was essential to provide safe drinking water to the operation team of the Plant & efficient draining off of storm water around the Plant area. The old water treatment plant and storm water drainage system were badly damaged beyond repair due to ageing and corrosion. These items may please		0.00

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
			be allowed on ground of obsolescence.		
13.	Switchgear including cable connection (Khandong)	31.49	To establish successful real time data telemetry with NERLDC, Shillong as per requirement of IEGC 2010 and statutory norms the RTU panels were procured and installed.	It is observed that the Petitioner in justification of its claim has submitted/admitted that these assets are related to the Khandong Power station (another project of the Petitioner). In view of this, the claim is **not allowed**/considered for this generating station.	0.00
14.	Inverter-based Welding Rectifier	0.60	Due to acidic water, the underwater parts get corroded frequently. To repair by weld build-up of the corroded parts the welding rectifier machine was procured. As need based requirement the cost may kindly be considered.	The expenditure claimed is in the nature of O&M expenses, and hence, the claim is **not allowed.**	0.00
	Total amount claimed	**198.57**			
	Total amount allowed				**73.52**

26. Based on the above, the total additional expenditure of Rs. 73.52 lakh in 2017-18 is allowed.

2018-19

27. The details of the actual additional capital expenditure claimed by the Petitioner are examined below:

(Rs. In lakh)

Sl. No.	Regulation	2018-19
(a)	Claims containing no provisions of the Regulation	3314.72
	Total additional capital expenditure claimed	**3314.72**

(a) *Claims containing no provisions of the Regulation*

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
New Items					
1	Design, Fabrication, Supply Erection and Commissioning of spillway gates operation	2965.66	Installation of gates over spillway of Khandong Dam, increased the Live Storage of the reservoir from 100.061 MCM (FRL at EL719.33m-without gates) to 179.600 MCM (FRL at EL725m-with gates).	It is observed that the assets/works was claimed in Petition No. 42/GT/2015 (for determination of tariff of Khandong HEP of the Petitioner for the period 2014-19) and the Commission vide its order dated 13.1.2016 had allowed the capitalisation of Rs. 3040.95 lakh. It is however noticed that the above assets/works have not been claimed in Petition No. 371/GT/2019 (truing up of tariff or Khangdong HEP for the period 2014-19). However, the Petitioner has claimed the said asset in the present Petition. The Petitioner was directed vide letter dated 31.1.2023 to justify the reasons for claiming the above assets/works in the present Petition and not in Petition No. 371/GT/2019. In response, the Petitioner has submitted that Kopili Hydro Electric Plant (4 X 50 MW), Khandong Hydroelectric Plant (2 X 25 MW) and Kopili-II Hydro Power plant (1x25 MW) comes under one complex, i.e., Kopili Hydroelectric Project. It has also submitted Khandong powerhouse feeds the reservoir for Kopili Power house and the reservoir created by Khandong dam runs the Khandong power station	2965.66
2.	Supply, Fabrication, cutting, removal and replacement of old and damaged steel plates of both the penstock of khandong water conductor system with new BQ plates	313.04	Steel Liner of the penstock of Khandong Hydro Power Station (2 x 25MW) was badly corroded due to highly acidic nature of reservoir water. Replacement of damaged steel plates with new BQ Plates was essential to enhance the service life of the water conductor system of the Plant.		313.04

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
				and then released to Umrong reservoir which runs Kopili power station. The Petitioner has stated that since Kopili machines are of high head, the discharge of two 25 MW units of Khandong Power station can run 4 numbers of 50 MW units of Kopili Power station. It has further submitted that the prime source of water for Kopili Power Station is discharge of Khandong only, as the catchment area for the reservoir for Kopili is very small. The Petitioner has added that considering the above-mentioned reasons and since the impact on commissioning of the spillway gates, ultimately benefits the operation of Kopili Power station, in addition to the Khandong Power Station, the expenditure incurred for the said asset was recognized in the books of Kopili Hydro Electric Plant. It is noticed that the expenditure claimed had been allowed earlier. In view of the above submissions of the Petitioner and since Khandong and Kopili Hydro projects of the Petitioner, do have a common complex and the water from Khandong Dam/Kopili Reservoir is used for generating power from both the stations, and	

Sl. No	Details of the claim	Amount claimed (Rs. in lakh)	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed (Rs. in lakh)
				since the expenditure claimed is for items already allowed, the claim of the Petitioner, is **allowed**. The corresponding decapitalization of old replaced item (no. 2) on account of the same is also **allowed**.	
3.	Refrigeration, air coolers etc. For cooling system in the powerhouse	36.02	The old electro-mechanical control and relay panels, Governor panel and DVR panel were replaced in phased manner by Numerical relay. For smooth functioning of the relays and cards installed in these panel AC cubicles were provided in all the panels. At high ambient temperature there was malfunction and failure of cards. The cost may be included as new asset on need-based requirement.	The expenditure claimed by the Petitioner is minor in nature and the same can be met from the O&M expenses allowed to the Petitioner. Hence, the claim of the Petitioner is **not allowed**. The corresponding decapitalization on account of the same is also **not allowed**.	0.00
	Total amount claimed	**3314.72**			
	Total amount allowed				**3278.70**

28. Based on the above, additional capital expenditure of Rs. 3278.70 lakh is allowed in 2018-19.

Discharge of liabilities

29. No discharge of liabilities has been claimed by the Petitioner for the generating station.

De-capitalization

30. The Petitioner has claimed the de-capitalization of amounts (as per Form 9Bi) during the period 2014-19 as under:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
880.34	322.04	18.58	0.00	86.67

31. The de-capitalization claimed by the Petitioner has been dealt with in the relevant paragraphs relating to the additional capital expenditure claims, which have been considered and allowed for the respective years of the period 2014-19, in terms of the provisions of Regulation 14(3) of the 2014 Tariff Regulations. Further, the decapitalization of assets against which additional capitalization has not been allowed, have not been considered. Accordingly, the de-capitalization, in case of assets like spares during the period 2014-19, which has not been considered for the purpose of tariff are as under:

(Rs. In lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
De-capitalization claimed by the Petitioner	880.34	322.04	18.58	0.00	86.67
De-capitalization allowed	21.13	166.51	18.58	0.00	86.67

Assumed Deletions

32. As per consistent methodology adopted by the Commission, the expenditure on replacement of assets, if found justified, is allowed for the purpose of tariff, provided that the capitalization of the said asset is followed by de-capitalization of the original value of the old asset. However, in certain cases where de-capitalization is affected in books during the following years, to the year of capitalization of new asset, the de-capitalization of the old asset for the purpose of tariff is shifted to the very same year in which the capitalization of the new asset is allowed. Such decapitalization which is not a book entry in the year of capitalization is termed as "Assumed deletion". Further, in the absence of the gross value of the asset being de-capitalized, the same is calculated by de-escalating the gross value of new asset @ 5% per annum till the year of capitalization of the old asset.

33. It is observed that the Petitioner has claimed the asset/work such as Spares, Transformer rating, etc., on replacement basis. However, the Petitioner, in this petition

has provided the de-capitalization value of the old asset/works, which have been replaced, which appear to be on lower side, for some assets. If the assumed deletion amount calculated by methodology adopted by the Commission, is more than the claim of the Petitioner, the amount calculated by the Commission (being on higher side) is considered for the purpose of the tariff. Accordingly, based on the above methodology, the assumed deletion considered for these assets/works is as under:

(Rs. in lakh)

Sl No.	Details	Additions claimed for new asset on replacement	De-capitalization value of old asset claimed	Assumed Deletions for old asset allowed
2014-15				
1	Supply and Delivery of cables to Kopili Hydro Electric Plant. (Unit-1 & 2)	25.48	0.00	11.12
2	Tools and plants (ordinary). BCH Make citation submersible pump starter with auto unit/ Crompton make & other submersible pumps.	1.18	0.00	0.51
3	Capitalisation of Renovation & Modernisation of Kopili unit # I & II, Phase # 1, under project code 0700 & Trial Balance of provisional project code # 0703, KHEP, 2014-15	4023.96	0.00	1755.64
4	R&M works of Kopili Unit-1 & 2.(Pole keys, socket head cap screw, timer, stopper plant & link pin)	5.27	0.00	2.30
	Total	**4055.88**	**0.00**	**1769.57**
2015-16				
1	KSB make wk 65- multistage, 25 HP,2900 RPM pump motor set	2.43	0.00	1.01
	Total	**2.43**	**0.00**	**1.01**
2016-17				
1	TUNNEL: Supply, Fabrication and Erection of Stainless-Steel liner over the existing steel liner of Umrong Tunnel at the tunnel outlet near Kopili Valve House, KHEP, Umrong, Assam.	492.75	0.00	195.00
2	Jyoti make HS pump to Kopili PS unit 3 & 4 Supply, installation, testing & commissioning of 3 Nos of	7.74	0.00	3.06

Sl No.	Details	Additions claimed for new asset on replacement	De-capitalization value of old asset claimed	Assumed Deletions for old asset allowed
	Cooling Water Pump for Unit-3 & 4 side.			
3	Supply & Commissioning of Numerical Protection system for Unit-3 & 4 (Generator and Unit Control Panel) including LBB protection	118.36	0.00	46.84
	Total	**618.86**	**0.00**	**244.90**
2017-18				
1	Testing & Commissioning of 24V,150AH PLANTE TYPE LEAD ACID battery bank with stand at Kopili Power Station.	2.91	0.00	1.10
2	220V,425AH Battery consisting of 11 nos cells INCL. Supply, Testing & Commissioning.	49.79	0.00	18.76
3	Supply, installation, testing & commissioning of New Battery Charger	10.44	0.00	3.93
4	Supply, installation, testing & commissioning of New DC Distribution Board due to technical obsolescence	10.38	0.00	3.91
	Total	**73.51**	**0.00**	**27.71**
2018-19				
1	Supply, Fabrication, cutting, removal and replacement of old and damaged steel plates of both the penstock of khandong water conductor system with new BQ plates	313.04	0.00	112.36
		313.04	**0.00**	**112.36**

Exclusions *[capitalized in books but not to be claimed for purpose of tariff]*

34. The following are the year-wise expenditure incurred by the Petitioner towards the replacement of minor assets, purchase of capital spares, residential building, plant & machinery, electrical & auxiliaries, ancillary services, purchase of miscellaneous assets etc:

(Rs in Lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
62.31	177.38	137.45	72.79	158.94

35. The above expenditure incurred towards the procurement/replacement of minor assets and capital spares are not allowed for the purpose of tariff, after the cut-off date, in terms of the provisions of the 2014 Tariff Regulations. Accordingly, the Petitioner has put these additions under exclusion category. The aforesaid exclusion of positive entries, as effected by the Petitioner, are allowed for the purpose of tariff.

Net additional capital expenditure allowed

36. In view of above, the net additional capital expenditure allowed for the generating station for the period 2014-19 is summarized below:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Additions allowed during the year (a)	4330.86	920.53	1109.38	73.52	3278.70
Discharge of liabilities (b)	0.00	0.00	0.00	0.00	0.00
Deletions considered during the year ie.De-capitalisation plus assumed deletions (c)	1790.70	167.52	263.48	27.71	199.03
Exclusions in Deletions not allowed (to be considered in deletion)	0.00	0.00	0.00	0.00	0.00
Net additional capital expenditure allowed (c)=(a)+(b)-(c)-(d)	**2540.16**	**753.01**	**845.90**	**45.82**	**3079.67**

Capital cost

37. Accordingly, the capital cost allowed for the purpose of tariff for the generating station, is as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	27835.74	30375.90	31128.91	3,974.81	32020.63
Net additional capital expenditure allowed	2540.16	753.01	845.90	45.82	3079.67
Closing Capital Cost	**30375.90**	**31128.91**	**31974.81**	**32020.63**	**35100.29**
Average Capital Cost	29105.82	30752.41	31551.86	31997.72	33560.46

Debt-Equity Ratio

38. Regulation 19 of the 2014 Tariff Regulations provides as under:

"19. Debt-Equity Ratio: (1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. If the

equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that:
i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:

ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:

iii. any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt : equity ratio.

Explanation.-The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2)The generating company or the transmission licensee shall submit the resolution of the Board of the company or approval from Cabinet Committee on Economic Affairs(CCEA) regarding infusion of fund from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.

(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.

(4) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014, the Commission shall approve the debt: equity ratio based on actual information provided by the generating company or the transmission licensee as the case may be.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernization expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation."

39. Gross normative loan and equity amounting to Rs.14346.04 lakh and Rs.13489.70 lakh, respectively, as on 31.3.2014 as considered in order dated 13.1.2016 in Petition No. 46/GT/2015 has been considered as normative loan and equity as on 1.4.2014. The normative debt equity ratio of 70:30 has been considered for the admitted additional capital expenditure and de-capitalization has been considered in the debt equity ratio of 50:50. The opening and closing debt and equity is as under:

Asset	As on 1.4.2014		Net Additional Capitalization during 2014-19				As on 31.3.2019	
			Additional Capital Expenditure		De-capitalization			
	Amount	%	Amount	%	Amount	%	Amount	%
Debt	14,346.04	51.54	6,799.09	70.00	1224.22	50.00	19,920.91	56.75
Equity	13,489.70	48.46	2,913.90	30.00	1224.22	50.00	15,179.38	43.25
Total	**27,835.74**	**100.00**	**9,712.99**	**100.00**	**2448.44**	**100.00**	**35,100.29**	**100.00**

Return on Equity

40. Regulation 24 of the 2014 Tariff Regulations provides as under:

"24. Return on Equity: (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:

Provided that:

i. in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:

ii. the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

iii. additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:

iv. the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:

v. as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:

vi. additional RoE shall not be admissible for transmission line having length of less than 50 kilometers."

41. Regulation 25 of the 2014 Tariff Regulations provides as under:

"Tax on Return on Equity: (1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income

stream (i.e., income of non-generation or non-transmission business, as the case may be) shall not be considered for the calculation of "effective tax rate"

(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)

Where "t" is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), "t" shall be considered as MAT rate including surcharge and cess

(3) The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2014-15 to 2018-19 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee as the case may be. Any under- recovery or over recovery of grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long term transmission customers/DICs as the case may be on year to year basis."

42. In term of Regulation 25(3) of the 2014 Tariff Regulations, the generating company or the transmission licensee as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon duly adjusted for any refund of tax, including interest received from the income tax authorities, pertaining to the period from 2014-15 to 2018-19, on actual gross income of any financial year. The base rate of return on equity is to be grossed up with the effective tax rate of the respective financial years.

43. The Commission in its order dated 7.6.2021 in Petition No. 273/GT/2019 (truing-up of tariff of Ranagandi HEP for the period 2014-19), had considered the tax rates for the generating station of the Petitioner as under:

Year	Effective Tax Rate (%)
2014-15	20.2521
2015-16	25.9099

Year	Effective Tax Rate (%)
2016-17	34.6080
2017-18	27.3764
2018-19	21.5488

44. Since the effective tax rate is considered on the basis of actual tax paid in the respect of the financial year, in line with the provisions of the relevant Finance Acts, by the concerned generating company, the tax rate as worked out and allowed in the said order dated 7.6.2021, has been considered for the computation of ROE for this generating station, as below:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity (a)	13489.70	13893.61	14086.01	14287.08	14295.28
Addition due to Capitalization (b)	403.91	192.40	201.07	8.20	884.09
Closing Equity (c)=(a)+(b)	13893.61	14086.01	14287.08	1295.28	15179.38
Average Equity (d)=(a+c)/2	13691.65	13989.81	1186.54	14291.18	14737.33
Base Rate (%) (e)	16.500%	16.500%	16.500%	16.500%	16.500%
Effective Tax Rate (%) (f)	20.252%	25.910%	34.608%	27.376%	21.549%
Effective ROE Rate (%) (g)	20.690%	22.270%	25.232%	22.720%	21.032%
Return on Equity (h)=(g)*(d)	**2832.80**	**3115.53**	**3579.55**	**3246.96**	**3099.56**

Interest on Loan

45. Regulation 26 of the 2014 Tariff Regulations provides as under:

> *"26. Interest on loan capital: (1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.*
>
> *(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.*
>
> *(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of Decapitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered up to the date of de-capitalization of such asset*
>
> *(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.*
>
> *(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment*

for interest capitalized Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered: Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such refinancing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.

(8) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.

(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute: Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan."

46. Accordingly, the repayment for the 2014-19 tariff period has been considered equal to the depreciation allowed for the respective years and Interest on loan has been calculated on the normative average loan of the year by applying the last available weighted average rate of interest as the loans are already repaid. Accordingly, Interest on loan is worked out as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan (A)	14,346.04	16,482.29	17,042.91	17,687.73	17,725.34
Cumulative repayment of loan up to previous year (B)	14,346.04	14,018.24	14,634.90	15,252.86	16,026.55
Net Loan Opening (C)=(A)-(B)	-	2,464.05	2,408.00	2,434.86	1,698.79
Net Addition due to additional capital expenditure (D)	2,136.25	560.61	644.82	37.61	2,195.57
Repayment of loan during the period (E)	565.42	702.87	752.36	787.41	886.86
Cumulative repayment adjustment on a/c of de-capitalization (F)	893.22	86.21	134.40	13.73	133.65
Net Repayment of loan during the period(G) = (E)-	(327.80)	616.66	617.96	773.68	753.22

	2014-15	2015-16	2016-17	2017-18	2018-19
(F)					
Net Loan Closing (H)= (C+D-G)	2,464.05	2,408.00	2,434.86	1,698.79	3,141.15
Average Loan(I)=(C+H)/2	1,232.02	2,436.03	2,421.43	2,066.83	2,419.97
Weighted Average Rate of Interest of loan (J)	7.94%	7.94%	7.94%	7.94%	7.94%
Interest on Loan (K=I*J)	**97.82**	**193.42**	**192.26**	**164.11**	**192.15**

Depreciation

47. Regulation 27 of the 2014 Tariff Regulations provides as under:

"27. Depreciation: (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.

Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset: Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff: Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.

(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-II to these regulations for the assets of the generating station and transmission system:

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets.

(7) The generating company or the transmission license, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project (five years before the useful life) alongwith justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the decapitalized asset during its useful services."

48. The COD of the generating station is 12.7.1997. Since the project has completed 12 years of commercial operation as on 13.7.2009, the remaining depreciable value has been spread over the balance useful life of the project in 2014-19 tariff period. Accordingly, depreciation has been worked out as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost (a)	27,835.74	30,375.90	31,128.91	31,974.81	32,020.63
Closing Capital Cost(b)	30,375.90	31,128.91	31,974.81	32,020.63	35,100.29
Average Capital Cost (c)=(a+b)/2	29,105.82	30,752.41	31,551.86	31,997.72	33,560.46
Land Value (d)	1,440.07	1,440.07	1,440.07	1,440.07	1,440.07
Depreciable value(e)=(c-d)*0.9	24,899.17	26,381.10	27,100.61	27,501.88	28,908.35
Balance life(f)	18.28	17.28	16.28	15.28	14.28
Remaining Depreciable Value(g)	10,336.24	12,145.97	12,248.82	12,032.13	12,664.91
Depreciation during the period(h)=(g)/(f)	**565.42**	**702.87**	**752.36**	**787.41**	**886.86**
Cumulative depreciation at the end of the year (before adjustment for de-capitalization) (I) = (H) + (Cumulative Depreciation (shown at K), at the end of the previous year) *	15,128.35	14,938.00	15,604.15	16,257.17	17,130.30
Less: Adjustment on account of de-capitalisation (j)	893.22	86.21	134.40	13.73	133.65
Net Cumulative Depreciation (k)=(i)-(j)	**14,235.13**	**14,851.79**	**15,469.76**	**16,243.44**	**16,996.66**

**Cumulative Depreciation as on 31.3.2014 is Rs. 14562.93 lakh*

Operation & Maintenance Expenses

49. Regulation 29 (3) (a) of the 2014 Tariff Regulations, provides as under:

"29(3)(a) Following operations and maintenance expense norms shall be applicable for hydro generating stations which have been operational for three or more years as on 1.4.2014:

(Rs. in Lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Kopili	6132.72	6540.18	6974.71	7438.11	7932.30

50. The Petitioner, in Petition No. 46/GT/2015, had claimed O&M expenses for the period 2014-19 in terms of Regulation 29(3)(a) of the 2014 Tariff Regulations and the same was allowed vide order dated 13.1.2016. In the present petition, the Petitioner has claimed O&M expenses in terms of the above Regulation. In addition, the Petitioner has also claimed the impact of wage revision. Considering the fact that the generating station is in operation for three or more years as on 1.4.2014, the normative O&M expenses as allowed by the Commission vide order dated 13.1.2016 in Petition No. 46/GT/2015, in terms of the above regulation, has been allowed. As regard the impact of wage revision, the same is examined below:

Additional O&M Expenditure on account of impact of Pay revision

51. The Petitioner has claimed total expenditure of Rs.1231.08 lakhs as additional O&M expenses, on account of impact of wage revision of its employees and for Meghalaya Home Guards for the period from 1.1.2017 to 31.3.2019. The Petitioner has prayed that the additional O&M expenses may be allowed to be recovered from the Respondents, as a one-time payment in exercise of the powers under Regulation 54 (Powers to Relax) and Regulation 55 (Powers to Remove Difficulties) of the 2014 Tariff Regulations. The Petitioner has also submitted audited statements showing the details of the impact of wage revision. The audited statements, showing the details of the impact of wage revision as submitted by the Petitioner, are as under:

(Rs in lakh)

	2016-17			2017-18			2018-19		
	Pre-Revised	Post Revised	Wage Revision Impact	Pre-Revised	Post Revised	Wage Revision Impact	Pre-Revised	Post Revised	Wage Revision Impact
1.1 Basic Pay	198.59	317.59	119.00	742.51	1020.58	278.07	732.47	1062.05	329.58

	2016-17			2017-18			2018-19		
	Pre-Revised	Post Revised	Wage Revision Impact	Pre-Revised	Post Revised	Wage Revision Impact	Pre-Revised	Post Revised	Wage Revision Impact
1.2 Dearness Allowance	238.49	253.47	14.98	905.99	959.44	53.45	841.72	573.02	(-)268.70
1.3 HRA	1.13	1.19	0.06	39.29	41.25	1.96	78.10	100.03	21.93
1.4 Allowances Perquisites	129.06	137.16	8.10	498.39	527.79	29.40	472.26	565.68	93.41
1.5 PRP/Ex Gratia	19.16	20.36	1.20	128.95	136.43	7.48	0.00	0.00	0.00
2.1 Super Annulation benefits	52.76	60.63	7.87	283.57	320.28	36.81	188.43	196.67	8.24
2.2 Gratuity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.3 Leave Encashment	19.54	66.55	47.01	742.48	944.44	201.96	209.80	432.86	233.06
Total	**658.72**	**856.95**	**198.23**	**3341.19**	**3950.31**	**609.12**	**2522.78**	**2930.30**	**407.53**
Net Employee Cost	658.72	856.95	198.23	3341.19	3950.31	609.12	2522.78	2930.30	407.53
Meghalaya Home Guard Employees	15.31	18.07	2.76	61.97	75.41	13.44	87.25	87.25	0.00
Total Claim	**674.04**	**875.02**	**200.98**	**3403.15**	**4025.72**	**622.57**	**2610.03**	**3017.56**	**407.53**

52. The Respondent, APDCL has submitted that the claim of the Petitioner for reimbursement of wage revision of employees and for Home Guards under Regulations 54 and 55 of the 2014 Tariff Regulations cannot be allowed and the Petitioner should file a separate petition with legal grounds to claim the same. The Petitioner in its rejoinder has clarified that the amount claimed is in accordance with the Commission's order dated 13.1.2016 in Petition No. 46/GT/2015.

53. As regards the claim of the Petitioner for additional O&M expenses of Rs.1231.08 lakhs on account of impact of wage revision from 1.1.2017 to 31.3.2019, the Commission vide ROP of the hearing dated 25.1.2022, directed the Petitioner to submit the following details:

> *"(i) PRP/Incentive included in the wage revision impact claimed (year wise details duly certified by the Auditor);*
>
> *(ii) Comparative statement of the normative O&M expenses allowed to the station versus the actual audited O&M expenses for the period from 2014-15 to 2018-19;"*

54. In response, the Petitioner vide affidavit dated 14.8.2020, has submitted the details of actual O&M expenses as shown under:

(Rs. in lakh)

	Normative O&M expenses	Actual audited O&M expenses including Corporate Expenses
2014-15	6132.72	8609.04
2015-16	6540.18	9528.82
2016-17	6974.71	9254.98
2017-18	7438.11	12099.13
2018-19	7932.30	10405.31

55. Further, it is observed that in addition to ex-gratia charges and Performance Related Pay (PRP), filing fee, community development expense and RLDC Fees and Charges have also been included under O&M expenses for the 2014-19 tariff period as tabulated below:

(Rs in lakh)

Heads	2014-15	2015-16	2016-17	2017-18	2018-19
Ex-gratia	0.00	0.00	0.00	0.00	0.00
Performance Related Pay (PRP)/Performance Linked Incentive	188.00	179.00	77.00	115.00	12.00
Filing Fees	9.00	11.00	11.00	9.00	9.00
Community Development Expense	90.00	17.00	43.00	32.00	68.00
RLDC Fees and Charges	309.00	96.00	135.00	76.00	85.00
Interest on Income Tax of Earlier year	0.00	0.00	0.00	0.00	54.71
Total	**596.00**	**303.00**	**266.00**	**232.00**	**228.71**

56. As regards recovery of the impact of wage revision, the Statement of Objects and Reasons (SOR) to the 2014 Tariff Regulations provides as under:

> *"29.26 Some of the generating stations have suggested that the impact of pay revision should be allowed on the basis of actual share of pay revision instead of normative 40% and one generating company suggested that the same should be considered as 60%. In the draft Regulations, the Commission had provided for a normative percentage of employee cost to total O&M expenses for different type of generating stations with an intention to provide a ceiling limit so that it does not lead to any exorbitant increase in the O&M expenses resulting in spike in tariff. The Commission would however, like to review the same considering the macroeconomics involved as these norms are also applicable for private generating stations. In order to ensure that such increase in employee expenses on account of pay revision in case of central generating stations and private generating stations are considered appropriately, the Commission is of the view that it shall be examined on case-to-case basis, balancing the interest of generating stations and consumers.*

33.2 The draft Regulations provided for a normative percentage of employee cost to total O&M expenses for generating stations and transmission system with an intention to provide a ceiling limit so that the same should not lead to any exorbitant increase in the O&M expenses resulting in spike in tariff. The Commission shall examine the increase in employee expenses on case-to-case basis and shall consider the same if found appropriate, to ensure that overall impact at the macro level is sustainable and thoroughly justified. Accordingly, clause 29(4) proposed in the draft Regulations has been deleted. The impact of wage revision shall only be given after seeing impact of one full year and if it is found that O&M norms provided under Regulations are inadequate/insufficient to cover all justifiable O&M expenses for the particular year including employee expenses, then balance amount may be considered for reimbursement."

57. It is observed that the above methodology as indicated in the SOR suggests a comparison of the normative O&M expenses with the actual O&M expenditure on year-to-year basis. In this respect, the following facts need consideration:

a. The norms are framed based on the averaging of the actual O&M expenses of past five years to capture the year-on-year variations in sub-heads of O&M;

b. Certain cyclic expenditure may occur with a gap of one year or two years and as such adopting a longer duration i.e., five years for framing of norms also captures such expenditure which is not incurred on year to year basis;

c. Generators when they find that their actual expenditure has gone beyond the normative O&M in a particular year put departmental restrictions and try to bring the expenditure for the next year below the norms.

58. First step is to compare the normative O&M expenses with the actual O&M expenses for the period from 2014-15 to 2018-19, commensurate to the period for which pay revision impact has been claimed. For like to like comparison, the components of O&M expenses like Productivity linked incentive, Performance Related Payment (PRP), Ex-gratia, Community development expenses, Filing Fees (separately recoverable) etc. which were not considered while framing the O&M expenses norms for the 2014-19 tariff period, have been excluded from the yearly actual audited O&M expenses. Having brought the normative O&M expenses and actual O&M expenses at same level, if normative O&M expenses for the period 2014-19 are higher than actual O&M expenses (normalized) for the same period, the impact due to pay revision (excluding PRP and ex-gratia) as claimed for the period is not admissible/ allowed as

the impact due to enhanced pay revision gets accommodated within the normative O&M expenses. However, if the normative O&M expenses for the period 2014-19 are less than the actual O&M expenses (normalized) for the same period, the pay revision impact (excluding PRP and ex-gratia) to the extent of under recovery or the pay revision impact (excluding PRP and ex-gratia), whichever is lower, is required to be allowed.

59. As stated, for a like to like comparison of the actual O&M expenses and normative O&M expenses, the expenditure against O&M expenses sub-heads as discussed above, has been excluded from the actual O&M expenses to arrive at the actual O&M expenses (normalized) for which the pay revision impact has been claimed in this petition.

60. The following tables portray the comparison of normative O&M expenses vis a vis the actual O&M expenses (normalized) for the tariff period 2014-19 (on combined basis) commensurate with the impact of pay revision:-

(Rs.in lakh)

Year	Normative O&M expenses as per Regulation (A)	Audited actual O&M Expenses (B)	Exclusions (C)	Normalized Actual O&M Expenses (D) = (B)-(C)	Difference (E) = (D)- (A)
2014-15	6132.72	8609.04	596.00	8013.04	1880.32
2015-16	6540.18	9528.82	303.00	9225.82	2685.64
2016-17	6974.71	9254.98	266.00	8988.98	2014.27
2017-18	7438.11	12099.13	232.00	11867.13	4429.02
2018-19	7932.30	10405.31	228.71	10176.6	2244.30
Total	**35018.02**	**49897.28**	**1625.71**	**48271.57**	**13253.55**

61. From the above table, it is clear that the total normalized actual O&M expenses incurred by the Petitioner are more than the normative O&M expenses allowed for the period 2014-19. Further, from paragraph 54 above, it is observed that the Petitioner, has also claimed Performance Related Pay (PRP)/Ex-gratia, in its computation of

impact of wage revision. As per consistent stand adopted by the Commission, while working out and allowing the impact of pay revision, PRP/Ex-gratia is not to be considered. Therefore, the total amount of Rs.1.20 lakh in 2016-17 and Rs.7.48 lakh in 2017-18 has not been considered and the impact of wage revision of Rs.1222.40 lakhs (Rs.1231.08 lakh – Rs.1.20 lakh – Rs.7.48 lakh) has only been considered.

62. From the submission of the Petitioner, it is observed that the actual normalized O&M expenses, which also includes wage revision impact of Rs. 1222.40 lakh, is more than the normative O&M expenses allowed during the period 2014-19. Accordingly, considering the fact that the normative O&M expenses allowed to the generating station in terms of the 2014 Tariff Regulations for the period 2014-19, is lesser than the actual normalized O&M expenses, the impact of the wage revision amounting to Rs. 1222.40 lakh, as claimed by the Petitioner, excluding PRP, is allowed.

63. Accordingly, we, in exercise of the Power under Regulation 54 of the 2014 Tariff Regulations, Power to relax, allow the reimbursement of the impact of wage revision amounting to Rs. 1222.40 lakh, as additional O&M expenses, for the period 2016-19. The arrear payments on account of the wage revision impact is payable by the beneficiaries in twelve equal monthly installments, starting from the next bill, after issue of this order. Keeping in view the consumer interest, we as a special case, direct that no interest shall be charged by the Petitioner on the arrear payments on the wage revision impact allowed in this order. This arrangement, in our view, will balance the interest of both the Petitioner and the Respondents. Also, considering the fact that the impact of wage revision is being allowed in exercise of the power to relax, the expenses allowed are not made part of the O&M expenses and the consequent annual fixed charges determined in this order.

Interest on Working Capital

64. Regulation 28(1)(c) of the 2014 Tariff Regulations provides as under:

> *28. Interest on Working Capital:*
> *(1) The working capital shall cover*
> *(c) Hydro generating station including pumped storage hydroelectric generating station and transmission system including communication system:*
> *(i) Receivables equivalent to two months of fixed cost;*
> *(ii) Maintenance spares @ 15% of operation and maintenance expense specified in regulation 29; and*
> *(iii) Operation and maintenance expenses for one month."*

Working Capital for Receivables

65. Working Capital for Receivables equivalent to two months of capacity charges has been worked as under:

(Rs.in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
1,674.67	1,834.27	1,998.05	2,024.02	2,107.54

Working Capital for Maintenance Spares

66. Working capital for Maintenance spares @ 15% of O&M expenses are worked out and allowed as under:

(Rs.in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
919.91	981.03	1,046.21	1,115.72	1,189.85

Working Capital for O&M Expenses

67. Working capital for O&M expenses for 1 month for the purpose of working capital are as under:

(Rs.in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
511.06	545.02	581.23	619.84	661.03

68. Clause (3) of Regulation 28 of the 2014 Tariff Regulations provides as under:

> *"(3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later."*

Rate of Interest on Working Capital

69. Interest on Working Capital has been calculated in terms of the above regulations. Also, in terms of Regulation 28(3) of the 2014 Tariff Regulations, the Bank Rate of 13.50% (Base Rate + 350 Basis Points) as on 1.4.2014 as claimed by the Petitioner, has been considered in calculation of tariff. Accordingly, Interest on Working Capital is worked out and allowed as under:

(Rs.in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Working Capital for O&M expenses (One month of O&M expenses)	511.06	545.02	581.23	619.84	661.03
Working Capital for Maintenance Spares (15% of O&M Expenses)	919.91	981.03	1,046.21	1,115.72	1,189.85
Working Capital for Receivables (2 months of annual fixed cost)	1,674.67	1,834.27	1,998.05	2,024.02	2,107.54
Total Working Capital	**3,105.64**	**3,360.32**	**3,625.49**	**3,759.58**	**3,958.41**
Rate of interest on working capital (%)	13.500%	13.500%	13.500%	13.500%	13.500%
Interest on Working Capital	**419.26**	**453.64**	**489.44**	**507.54**	**534.39**

Annual Fixed Charges

70. Based on the above, the annual fixed charges allowed for the generating station for the period 2014-19 is summarized as under:

(Rs.in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	565.42	702.87	752.36	787.41	886.86
Interest on Loan	97.82	193.42	192.26	164.11	192.15
Return on Equity	2,832.80	3,115.53	3,579.55	3,246.96	3,099.56
Interest on Working Capital	419.26	453.64	489.44	507.54	534.39
O&M Expenses	6,132.72	6,540.18	6,974.71	7,438.11	7,932.30
Total	**10,048.03**	**11,005.64**	**11,988.32**	**12,144.13**	**12,645.25**

Note: (1) All figures are on annualized basis. (2) All figures under each head have been rounded. The figure in total column in each year is also rounded. As such the sum of individual items may not be equal to the arithmetic total of the column, in the order.

Normative Annual Plant Availability Factor (NAPAF)

71. Clause (4) of Regulation 37 of the 2014 Tariff Regulations provides for the Normative Annual Plant Availability Factor (NAPAF) for hydro generating stations

already in operation. Accordingly, the NAPAF of 79% has been considered for this generating station for the period 2014-19.

Design Energy

72. The Commission in its order dated 13.1.2016 in Petition No. 46/GT/2015 had considered the annual Design Energy (DE) of 1186.14 million units for this generating station. This DE has been considered for this generating station for the period 2014-19 as per month-wise details below:

Months	Design Energy (MU)
April	58.03
May	148.80
June	144.00
July	148.80
August	148.80
September	144.00
October	118.30
November	54.72
December	56.54
January	56.54
February	51.07
March	56.54
Total	**1186.14**

73. The difference between the annual fixed charges determined by this order and the annual fixed charges recovered by the Petitioner in terms of the Commission's order dated 13.1.2013 in Petition No. 46/GT/2015, shall be adjusted in terms of Regulation 8 (13) of the 2014 Tariff Regulations.

Summary

74. The summary of the annual fixed charges and the impact of wage revision allowed after truing up of tariff for the period 2014-19 is as under:

(Rs.in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Annual Fixed Charges	10048.03	11005.64	11988.32	12144.13	12645.25
Impact of Wage Revision			199.78	615.09	407.53

75. Petition No. 370/GT/2020 is disposed in terms of the above.

Sd/- **(Pravas Kumar Singh)** **Member**	*Sd/-* **(Arun Goyal)** **Member**	*Sd/-* **(I.S. Jha)** **Member**

ANNEXURE – V

CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 398/GT/2020

Coram:

Shri I.S. Jha, Member
Shri Arun Goyal, Member
Shri Pravas Kumar Singh, Member

Date of Order: 31st March, 2023

IN THE MATTER OF

Petition for approval of tariff of Kopili Hydroelectric Project (200 MW) for the period 2019-24.

AND

IN THE MATTER OF

North Eastern Electric Power Corporation Limited
Corporate Office, Brookland Compound
Lower New Colony,
Shillong-793003 **.... Petitioner**

Vs

1. Assam Power Distribution Company Limited,
   "Bijulee Bhawan" Paltanbazar
   Guwahati-781 001, Assam

2. Meghalaya Power Distribution Corporation Limited,
   Lumjinshai, Short Round Road
   Shillong-799 001, Meghalaya

3. Tripura State Electricity Corporation Limited,
   Bidyut Bhavan, North Banamalipur
   Agartala-799 001, Tripura

4. Power & Electricity Department,
   Government of Mizoram, New Secretariat Complex
   Kawlpetha, Aizwal-796001

5. Manipur State Power Distribution Company Limited
   3rd Floor, New Directorate Building, Near 2nd M.R. Gate
   Imphal-Dimapur Road, Imphal-795 001, Manipur

6. Department of Power,
Government of Arunachal Pradesh,
Vidyut Bhawan, Itanagar-791 111

7. Department of Power,
Government of Nagaland,
Electricity House, AG Colony
Kohima-797 001

8. North Eastern Regional Power Committee,
NERPC Complex, Dong Parmaw,
Lapalang, Shillong-793 006

9. North Eastern Regional Load Despatch Centre,
Dongtieh, Lower Nongrah
Lapalang, Shillong-793 006 .... **Respondents**

Parties Present:

Shri Devapriya Choudhury, NEEPCO
Shri Sushanta Deka, NEEPCO
Shri Munin Choudhary, NEEPCO
Shri Ripunjoy Bhuyan, NEEPCO
Ms. Bornali Deori, NEEPCO
Ms. Elizabeth Pyrbot, NEEPCO

ORDER

This petition has been filed by the Petitioner, North Eastern Electric Power Corporation Limited, for approval of tariff of Kopili Hydroelectric Project (4 x 50 MW) (in short 'the generating station') for the period 2019-24, in terms of the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (in short 'the 2019 Tariff Regulations'). The generating station comprises of four units of 50 MW and the date of commercial operation (COD) of the units of the generating station are as under:

Units	COD
Unit-I	5.7.1988
Unit-II	22.6.1988
Unit-III	1.5.1997
Unit-IV /Generating station	12.7.1997

2. Petition No. 46/GT/2015 was filed by the Petitioner for approval of tariff of the generating station for the period 2014-19 and the Commission vide its order dated 13.1.2016 approved the capital cost and the annual fixed charges. Subsequently, the Petitioner filed Petition No. 370/GT/2019, for truing up of tariff for the period 2014-19, and the Commission vide its order dated 31.3.2023 in Petition No. 370/GT/2019, had approved the capital cost and the annual fixed charges of the generating station as under:

Capital Cost allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	27835.74	30375.90	31128.91	31974.81	32020.63
Net additional capital expenditure allowed	2540.16	753.01	845.90	45.82	3079.67
Closing Capital Cost	**30375.90**	**31128.91**	**31974.81**	**32020.63**	**35100.29**
Average Capital Cost	29105.82	30752.41	31551.86	31997.72	33560.46

Annual Fixed Charges allowed

(Rs.in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	565.42	702.87	752.36	787.41	886.86
Interest on Loan	97.82	193.42	192.26	164.11	192.15
Return on Equity	2832.80	3115.53	3579.55	3246.96	3099.56
Interest on Working Capital	419.26	453.64	489.44	507.54	534.39
O&M Expenses	6132.72	6540.18	6974.71	7438.11	7932.30
Total	**10048.03**	**11005.64**	**11988.32**	**12144.13**	**12645.25**

Present Petition

3. The Petitioner has filed the present petition for approval of tariff of the generating station for the period 2019-24, in terms of the provisions of the 2019 Tariff Regulations. Accordingly, the capital cost and annual fixed cost claimed by the Petitioner are as under:

Capital Cost claimed

(Rs.in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	39618.01	39618.01	39618.01	39618.01	39618.01
Add: Addition during the year/period	0.00	0.00	0.00	0.00	0.00
Less: De-capitalization	0.00	0.00	0.00	0.00	0.00

during the year/ period					
Less: Reversal during the year/ period	0.00	0.00	0.00	0.00	0.00
Add: Discharges during the year/ period	0.00	0.00	0.00	0.00	0.00
Closing Capital Cost	39618.01	39618.01	39618.01	39618.01	39618.01
Average Capital Cost	39618.01	39618.01	39618.01	39618.01	39618.01

Annual Fixed Charges claimed

(Rs.in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	920.76	920.76	920.76	920.76	920.76
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	3403.69	3403.69	3403.69	3403.69	3403.69
Interest on Working Capital	462.64	459.24	478.12	497.91	518.63
O&M Expenses	9044.47	9475.58	9927.24	10400.43	10896.17
Total	**13831.56**	**14259.27**	**14729.81**	**15222.79**	**15739.25**

4. The Commission vide Record of the Proceedings (ROP) of the hearing dated 25.1.2022, directed the Petitioner to submit certain additional information and reserved order in the petition. In response, the Petitioner on 28.2.2022 has filed the additional information after serving copies to the Respondents. None of the Respondents have filed replies in the matter. Taking into consideration the submissions of the parties and the documents available on record, we proceed for determining the tariff of the generating station for the period 2019-24, after prudence check, as stated in the subsequent paragraphs.

Capital Cost

5. Regulation 19(3) of the 2019 Tariff Regulations provides as under:

"(3) The Capital cost of an existing project shall include the following:

(a) Capital cost admitted by the Commission prior to 1.4.2019 duly trued up by excluding liability, if any, as on 1.4.2019;

(b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;

(c) Capital expenditure on account of renovation and modernisation as admitted by this Commission in accordance with these regulations;

(d) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;

(e) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of generating station but does not

include the transportation cost and any other appurtenant cost paid to the railway; and

(l) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries."

6. The Petitioner has claimed the annual fixed charges, based on the opening capital cost of Rs. 39618.01 lakh as on 1.4.2019. However, the Commission vide its order dated 31.3.2023 in Petition No. 370/GT/2019, had approved the closing capital cost of Rs. 35100.29 lakh, as on 31.3.2019. Accordingly, in terms of Regulation 19(3) of the 2019 Tariff Regulations, the closing capital cost of Rs.35100.29 lakh, has been considered as the opening capital cost, as on 1.4.2019.

Additional Capital Expenditure

7. During the hearing of this petition on 25.1.2022, the representative of the Petitioner, clarified that no additional capital expenditure has been claimed during the period 2019-24, as the Petitioner is to undertake Renovation and Modernization (R&M), as the entire plant had submerged. It was also submitted that the Petitioner will file a fresh petition for approval of R&M as and when the final approval of CEA on the DPR is received. It is noticed that the Petitioner has filed Petition No. 189/MP/2022, before this Commission, on 24.6.2022, seeking approval of R&M, for life extension beyond the normal useful life of the generating station. The said petition was heard on 22.2.2023 and is pending consideration of the Commission. Since the Petitioner has not claimed any additional capital expenditure, including de-capitalization for the period 2019-24, in this petition, no additional capital expenditure has been considered.

Capital Cost

8. Accordingly, the capital cost allowed for the purpose of tariff for the period 2019-24 is as under:

(Rs.in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	35100.29	35100.29	35100.29	35100.29	35100.29
Add: Projected additional capital expenditure allowed	0.00	0.00	0.00	0.00	0.00
Closing Capital Cost	**35100.29**	**35100.29**	**35100.29**	**35100.29**	**35100.29**
Average Capital Cost	35100.29	35100.29	35100.29	35100.29	35100.29

Debt Equity Ratio

9. Regulation 18 of the 2019 Tariff Regulations provides as under:

"(1) For new projects, the debt-equity ratio of 70:30 as on date of commercial operation shall be considered. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that:

i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:

ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:

iii. any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt: equity ratio.

Explanation- The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2) The generating company or the transmission licensee, as the case may be, shall submit the resolution of the Board of the company or approval of the competent authority in other cases regarding infusion of funds from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.

(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, debt: equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2019 shall be considered:

Provided that in case of a generating station or a transmission system including communication, system which has completed its useful life as on or after 1.4.2019, if the equity actually deployed as on 1.4.2019 is more than 30% of the capital cost, equity in excess of 30% shall not be taken into account for tariff computation;

Provided further that in case of projects owned by Damodar Valley Corporation, the debt: equity ratio shall be governed as per sub-clause (ii) of clause (2) of Regulation 72 of these regulations;

(4) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2019, the Commission shall approve the debt: equity ratio in accordance with clause (1) of this Regulation.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2019 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this Regulation."

10. The closing debt-equity ratio of 56.75:43.25, as on 31.3.2019, has been considered as the opening debt-equity ratio as on 1.4.2019. No additional capital expenditure and de-capitalization has been claimed by the Petitioner. Accordingly, the details of debt-equity ratio in respect of generating station, as on 1.4.2019, and 31.3.2024 are as under:

(Rs. in lakh)

Asset	As on 1.4.2019		Additional Capital Expenditure during 2019-24		As on 31.3.2024	
	Amount	%	Amount	%	Amount	%
Debt	19,920.91	56.75	0.00	70.00	19,920.91	56.75
Equity	15,179.38	43.25	0.00	30.00	15,179.38	43.25
Total	**35,100.29**	**100.00**	**0.00**	**100.00**	**35,100.29**	**100.00**

Return on Equity

11. Regulation 30 of the 2019 Tariff Regulations provides as under:

"(1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with Regulation 18 of these regulations.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:

Provided that return on equity in respect of additional capitalization after cut-off date beyond the original scope excluding additional capitalization due to Change in Law, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system;

Provided further that:

i. In case of a new project, the rate of return on equity shall be reduced by 1.00% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO) or Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system based on the report submitted by the respective RLDC;

ii. in case of existing generating station, as and when any of the requirements under (i) above of this Regulation are found lacking based on the report submitted by the concerned RLDC, rate of return on equity shall be reduced by 1.00% for the period for which the deficiency continues;

iii. in case of a thermal generating station, with effect from 1.4.2020:

a) rate of return on equity shall be reduced by 0.25% in case of failure to achieve the ramp rate of 1% per minute;

b) an additional rate of return on equity of 0.25% shall be allowed for every incremental ramp rate of 1% per minute achieved over and above the ramp rate of 1% per minute, subject to ceiling of additional rate of return on equity of 1.00%:

Provided that the detailed guidelines in this regard shall be issued by National Load Dispatch Centre by 30.6.2019"

12. Regulation 31 of the 2019 Tariff Regulations provides as under:

"31. Tax on Return on Equity:

(1) The base rate of return on equity as allowed by the Commission under Regulation 30 of these regulations shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax paid on income from other businesses including deferred tax liability (i.e. income from business other than business of generation or transmission, as the case may be) shall be excluded for the calculation of effective tax rate.

(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)

Where "t" is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), "t" shall be considered as MAT rate including surcharge and cess.

Illustration-

(i) *In case of the generating company or the transmission licensee paying Minimum Alternate Tax (MAT) @ 21.55% including surcharge and cess:*

Rate of return on equity = 15.50/(1-0.2155) = 19.758%

(ii) In case of a generating company or the transmission licensee paying normal corporate tax including surcharge and cess:

(a) Estimated Gross Income from generation or transmission business for FY 2019-20 is Rs 1,000 crore;

(b) Estimated Advance Tax for the year on above is Rs 240 crore;

(c) Effective Tax Rate for the year 2019-20 = Rs 240 Crore/Rs 1000 Crore = 24%;

(d) Rate of return on equity = 15.50/ (1-0.24) = 20.395%.

(3) The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2019-24 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee as the case may be. Any under-recovery or over-recovery of

grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long-term transmission customers, as the case may be, on year to year basis."

13. For grossing up of Return on Equity (ROE) for the period 2019-24, the Petitioner has applied the MAT rate of 17.472% and the same is allowed. This is, however, subject to revision, if any, at the time of truing up of tariff. Accordingly, ROE has been worked out and allowed as under:

(Rs.in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Normative Equity- Opening (a)	15179.38	15179.38	15179.38	15179.38	15179.38
Addition of Equity due to additional capital expenditure (b)	0.00	0.00	0.00	0.00	0.00
Normative Equity- Closing (c)=(a)+(b)	15179.38	15179.38	15179.38	15179.38	15179.38
Average Normative Equity (d)=(a+c)/2	15179.38	15179.38	15179.38	15179.38	15179.38
Return on Equity (Base Rate) (e)	16.500%	16.500%	16.500%	16.500%	16.500%
Effective Tax Rate (f)	17.472%	17.472%	17.472%	17.472%	17.472%
Rate of Return on Equity (Pre-tax) (g)	19.993%	19.993%	19.993%	19.993%	19.993%
Return on Equity (Pre-tax) – (annualized) (h)=(d)*(g)	**3034.81**	**3034.81**	**3034.81**	**3034.81**	**3034.81**

Interest on loan

14. Regulation 32 of the 2019 Tariff Regulations provides as under:

"32. Interest on loan capital:

(1) The loans arrived at in the manner indicated in Regulation 18 of these regulations shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2019 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2019 from the gross normative loan.

(3) The repayment for each of the year of the tariff period 2019-24 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalisation of such asset.

(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:

Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

(7) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing."

15. Accordingly, the repayment for the period 2019-24, has been considered equal to the depreciation allowed for the respective years, and Interest on loan has been calculated on the normative average loan of the year, by applying the last available weighted average rate of interest, as the actual loans have already been repaid. Accordingly, Interest on loan is worked out as under:

(Rs.in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan (A)	19,920.91	19,920.91	19,920.91	19,920.91	19,920.91
Cumulative repayment of loan up to previous year (B)	16,779.77	17,507.18	18,234.60	18,962.01	19,689.42
Net Loan Opening (C)=(A)-(B)	3,141.15	2,413.73	1,686.32	958.90	231.49
Net Addition due to additional capital expenditure (D)	0.00	0.00	0.00	0.00	0.00
Repayment of loan during the period (E)	727.41	727.41	727.41	727.41	231.49
Cumulative repayment adjustment on a/c of de-capitalization (F)	0.00	0.00	0.00	0.00	0.00
Net Repayment of loan during the period(G) = (E)-(F)	727.41	727.41	727.41	727.41	231.49
Net Loan Closing (H)= (C+D-G)	2,413.73	1,686.32	958.90	231.49	-
Average Loan(I)=(C+H)/2	2,777.44	2,050.02	1,322.61	595.20	115.74
Weighted Average Rate of Interest of loan (J)	7.94%	7.94%	7.94%	7.94%	7.94%
Interest on Loan (K=I*J)	**220.53**	**162.77**	**105.02**	**47.26**	**9.19**

Depreciation

16. Regulation 33 of the 2019 Tariff Regulations provides as under:

"33. Depreciation:

(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system or element thereof including communication system. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units:

Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of a transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset: Provided that the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable;

Provided further that in case of hydro generating stations, the salvage value shall be as provided in the agreement, if any, signed by the developers with the State Government for development of the generating station:

Provided also that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:

Provided also that any depreciation disallowed on account of lower availability of the generating station or unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life or the extended life.

(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in ***Appendix-I*** *to these regulations for the assets of the generating station and transmission system:*

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

(6) In case of the existing projects, the balance depreciable value as on 1.4.2019 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2019 from the gross depreciable value of the assets.

(7) The generating company or the transmission licensee, as the case may be, shall submit the details of proposed capital expenditure five years before the completion of useful life of the project along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services.

17. The COD of the generating station is 12.7.1997. Since the project has completed 12 years of commercial operation as on 13.7.2009, the remaining depreciable value has been spread over the balance useful life of the project during the period 2019-24. Accordingly, depreciation has been worked out as under:

(Rs.in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost (a)	35100.29	35100.29	35100.29	35100.29	35100.29
Closing Capital Cost (b)	35100.29	35100.29	35100.29	35100.29	35100.29
Average Capital Cost (c)=(a)+(b)/2	35100.29	35100.29	35100.29	35100.29	35100.29
Freehold land value (d)	1440.07	1440.07	1440.07	1440.07	1440.07
Depreciable Value (e)=90%*(c-d)	30294.20	30294.20	30294.20	30294.20	30294.20
Balance life (f)	18.28	17.28	16.28	15.28	14.28
Remaining Depreciable Value (g)	13297.54	12570.12	11842.71	11115.30	10387.88
Depreciation during the period (h)=(g)/(f)	**727.41**	**727.41**	**727.41**	**727.41**	**727.41**
Cumulative depreciation at the end of the year (before adjustment for de-capitalization) (I) = (H) + (Cumulative Depreciation (shown at K), at the end of the previous year) *	17724.07	18451.49	19178.90	19906.32	20633.73
Less: Adjustment on account of de-capitalisation (j)	0.00	0.00	0.00	0.00	0.00
Net Cumulative Depreciation (k)	**17724.07**	**18451.49**	**19178.90**	**19906.32**	**20633.73**

**Cumulative Depreciation as on 31.3.2019 is Rs. 16996.66 lakh*

Operation & Maintenance Expenses

18. Regulation 35(2)(a) of the 2019 Tariff Regulations provides the O&M expense norms for hydro generating stations, which have been operational for three or more years as on 1.4.2019, as under:

(Rs.in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
9044.47	9475.58	9927.24	10400.43	10896.17

19. As the Petitioner has claimed normative O&M expenses in terms of the said regulations, the same is allowed.

Security Expenses and Capital Spares

20. As regards Security expenses and capital spares, the Petitioner has submitted that the same will be claimed at the time of truing up of tariff. Accordingly, the security

expenses and capital spares, shall be considered, based on the actual expenses incurred, at the time of truing-up of tariff of the generating station.

Interest on Working Capital

21. Regulation 34(1)(c) of the 2019 Tariff Regulation provides as under:

> *"34. Interest on Working Capital:*
>
> *(1) The working capital shall cover:*
>
> *(c) For Hydro Generating Station (including Pumped Storage Hydro Generating Station) and Transmission System:*
>
> *(i) Receivables equivalent to 45 days of annual fixed cost;*
>
> *(ii) Maintenance spares @ 15% of operation and maintenance expenses including security expenses; and*
>
> *(iii) Operation and maintenance expenses, including security expenses for one month.*

22. Regulation 34(3) and 34(4) of the 2019 Tariff Regulation provide as under:

> *(3) Rate of interest on working capital shall be on normative basis and shall be considered as bank rate as on 1.4.2019 or as on 1st April of the year during the tariff period 2019-24 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later:*
>
> *Provided that in case of truing-up, the rate of interest on working capital shall be considered as bank rate as on 1st April of each of the financial year during the tariff period 2019-24.*
>
> *(4) Interest on working capital shall be payable on normative basis notwithstanding that the generating company or the transmission licensee has not taken loan for working capital from any outside agency."*

Receivables

23. Receivables equivalent to 45 days of annual fixed cost are worked out and allowed as under:

(Rs.in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1657.53	1706.46	1753.37	1806.71	1860.23

Maintenance Spares

24. Maintenance spares @ 15% of O&M expenses is worked out and allowed as under:

(Rs.in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1356.67	1421.34	1489.09	1560.06	1634.43

O&M expenses

25. O&M expenses for one month are allowed as under:

(Rs.in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
753.71	789.63	827.27	866.70	908.01

Rate of Interest on working capital

26. In terms of Regulation 34(3) of the 2019 Tariff Regulations, the rate of interest on working capital shall be considered as 12.05% (i.e. one-year SBI MCLR of 8.55% as on 1.4.2019 plus 350 bps) for the period 2019-24. Further, the aforesaid rate of interest is subject to truing-up, based on one-year SBI MCLR as on 1st April of the respective years of the period 2019-24. The tariff of the generating station is being determined in the year 2022-23 and one-year SBI MCLR as on 1.4.2020 (i.e. 7.75%),1.4.2021 (i.e. 7%) and 1.4.2022 (i.e.7%) is available. Hence, in order to safeguard against additional interest burden due to excess/ under recovery of tariff, we deem it prudent to consider the rate of interest on working capital for the year 2019-20 as 12.05%, for 2020-21 as 11.25% (i.e. one year SBI MCLR of 7.75% as on 1.4.2020 plus 350 bps) for 2021-22 as 10.50% (i.e. one year SBI MCLR of 7.00% as on 1.4.2021 plus 350 bps) and for the period 2022-24 as 10.50% (i.e. one year SBI MCLR of 7% as on 1.4.2022 plus 350 bps). Accordingly, interest on working capital is computed as under:

(Rs.in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Working Capital for Receivables (45 days)	1657.53	1706.46	1753.37	1806.71	1860.23
Working Capital for Maintenance spares (15% of O&M Expenses)	1356.67	1421.34	1489.09	1560.06	1634.43
Working Capital for O&M expenses	753.71	789.63	827.27	866.70	908.01
Total Working Capital	**3767.91**	**3917.43**	**4069.73**	**4233.48**	**4402.67**
Rate of interest on working capital (%)	12.050%	11.250%	10.500%	10.500%	10.500%
Interest on Working Capital	**454.03**	**440.71**	**427.32**	**444.52**	**462.28**

Annual Fixed Charges for the period 2019-24

27. Accordingly, the annual fixed charges approved for the generating station for the period 2019-24 is summarized below:

(Rs.in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	727.41	727.41	727.41	727.41	727.41
Interest on Loan	220.53	162.77	105.02	47.26	9.19
Return on Equity	3034.81	3034.81	3034.81	3034.81	3034.81
Interest on Working Capital	454.03	440.71	427.32	444.52	462.28
O&M Expenses	9044.47	9475.58	9927.24	10400.43	10896.17
Total	**13481.26**	**13841.29**	**14221.80**	**14654.43**	**15129.87**

basis. (2) All figures under each head have been rounded. The figure in total column in each year is also rounded. As such the sum of individual items may not be equal to the arithmetic total of the column, in the order.

28. The annual fixed charges approved as above are subject to truing up, in terms of Regulation 13 of the 2019 Tariff Regulations.

Normative Annual Plant Availability Factor (NAPAF)

29. Regulation 50(A)(4) of the 2019 Tariff Regulations provides for the Normative Annual Plant Availability Factor (NAPAF) for hydro generating stations already in operation. Accordingly, in terms of the said regulation, NAPAF of 69% has been considered for this generating station.

Design Energy

30. The Commission in its order dated 31.3.2023 in Petition No. 370/GT/2019, had considered the annual Design Energy (DE) of 1186.14 million units for this generating station. This DE has been considered for this generating station for the period 2019-24 as per month-wise details as under:

Months	Design Energy (MU)
April	58.03
May	148.80
June	144.00
July	148.80
August	148.80

Months	Design Energy (MU)
September	144.00
October	118.30
November	54.72
December	56.54
January	56.54
February	51.07
March	56.54
Total	**1186.14**

Application filing fee and publication expenses

31. The Petitioner has sought the reimbursement of fees paid by it for filing the petition and for publication expenses and has submitted that the reimbursement of the same are in accordance in terms of the Regulation 70(1) of the 2019 Tariff Regulations. In view of the above, the Petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the filing of this petition, directly from the beneficiaries, on pro-rata basis, in accordance with Regulation 70(1) of the 2019 Tariff Regulations.

32. Similarly, RLDC Fees & charges paid by the Petitioner in terms of the Central Electricity Regulatory Commission (Fees and Charges of Regional Load Dispatch Centre and other related matters) Regulations, 2015, shall be recovered from the beneficiaries. In addition, the Petitioner is entitled recovery of statutory taxes, levies, duties, cess etc. levied by the statutory authorities in accordance with the 2019 Tariff Regulations.

Summary

33. The annual fixed charges claimed and allowed for the period 2019-24 is summarized below:

(Rs.in lakh)

Annual Fixed Charges	2019-20	2020-21	2021-22	2022-23	2023-24
Claimed	13831.56	14259.27	14729.81	15222.79	15739.25
Allowed	**13481.26**	**13841.29**	**14221.80**	**14654.43**	**15129.87**

34. Petition No. 398/GT/2020 is disposed in terms of the above.

Sd/-	*Sd/-*	*Sd/-*
(Pravas Kumar Singh)	**(Arun Goyal)**	**(I.S. Jha)**
Member	**Member**	**Member**

ANNEXURE - VI

R. Pal & Co.
Chartered Accountants
Membership No - 54234
Firm Registration No: 322343E
G.P.I Office Campus, Quinton Road, Shillong, Pin- 793001 Office: (☎) 0364-2234371, E-mail: - ranadharpal@gmail.com

To,

The Chief General Manager(E/M) /HOP
NEEPCO LTD,
KOPILI HYDRO POWER STATION
Umrangso - 788 931
Dima Hasao,Assam

Independent Practitioners Certificate

We certify that North Eastern Electric Power Corporation Limited of Kopili Hydro Power Station had incurred Rs.459.54 Lacs for the period 01.04.2019 to 07.10.2019 towards Security Expenses and Rs.197.41 Lacs towards Additional Capitalisation for the period 2019-20 as per Form 9A.

Restriction on use : This Report is addressed to and provided to the Company solely for the purpose of filing Tariff Petition and should not be used by any other person or for any other purpose.

For R.Pal & Co.
Chartered Accountants
FRN : 322343E

Ranadhir Pal
Proprietor
M No. 54234

Place : Shillong
Dated : 28.08.2024

R. PAL & CO. SHILLONG CHARTERED ACCOUNTANTS

PART-II
FORM- 9A

Year wise Statement of Additional Capitalisation after COD
2019-24

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : Kopili Hydro Electric Power Plant (4 X50 MW)

COD
For Financial Year 2019-20 to 2023-2024

Sl. No.	Head of Work/Equipment	ACE Claimed (Actual/Projected)			IDC included in col.3	Regulation under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis (Rs in lakh)	Un-discharged Liability included in col.3 (Rs in lakh)	Cash basis				
1	2	3	4	(5=3-4)	6	7	8	9
	FY 2019-2020							
1	Reservoir & Dam : Installation, testing Commissioning of Dam Safety Monitoring System	17364381 2537000 0.00	0.00	1,72,24,381.00 25,37,000.00 0.00	0.00 0.00	25 (1)(d)	Dam failure can cause catastrophic damage to life and property. A good instrumentation program makes use of the data to evaluate the safety of the structure by collecting data and detecting any issues at a preventable stage. Thus, for monitoring and control of item criticality to ensure its safety, stability, and performance etc., the Petitioner has awarded the work contract to the Contractor M/s Elcome Technologies Pvt Ltd., Mumbai, vide W.O. No. NEEPCO/GP/C&P/FE/e-tender Dam/2021/Vol-III/1553 Dated 24.01.2018 for supply, installation & commissioning of Dam Safety Monitoring System of the Dam. The work has been done in accordance with the Guidelines for safety inspection of Dam issued by CWC on January 2018.	
	Total		0.00	1,97,41,381.00				

197.41 Lakh

~ 213 ~

SHILLONG CHARTERED ACCOUNTS

Dy. Mng (F)

North Eastern Electric Power Corporation Ltd.

ANNEXURE- VII

File No.CEA-HY-12-33/2/2020-HPA Division

भारतसरकार
Govt. of India
विद्युतमंत्रालय
Ministry of Power
केंद्रीयविद्युतप्राधिकरण
Central Electricity Authority
जलविद्युतपरियोजनामूल्यांकनप्रभाग
Hydro Project Appraisal Division

विषय: Examination of Detailed Project Report (DPR) for Renovation &Modernisation of 200 (4x50) MW Kopili Power Station, Umrongso, Assam of NEEPCO – Vetting of Cost estimates of E&M works at Jan'21 PL – reg.

Reference is invited to HER&M Division, CEA letter dated 19.02.2021 forwarding there with revised E&M Cost estimates as Rs. 406.14 Crores at Jan'21 PL submitted by NEEPCO Ltd. vide letter dated 18.02.2021 in respect of the proposed Renovation and Modernization of Kopili Power Station (4x50=200 MW) in Umrongso, Assam for examination and vetting of CEA.

The proposal of cost estimates of E&M works at Jan'2021 Price level submitted by NEEPCO has been examined and is vetted for an amount of **Rs. 391.11 Croresat Jan'2021 PL**. Abstract of vetted E&M cost of the project is given below:

(in Rs Crores)

Sl. No	Item	Cost vetted by CEA at Jan 2021 PL
1	**E&M works**	380.34
2	**Dismantling Charges**	10.77
	Total	**391.11**

Details of E&M Cost abstract and dismantling cost vetted by CEA are enclosed at **Annexure-I & II** respectively.

Also, it is worth mentioning that NEEPCO vide letter dated 18.12.2020 (copy enclosed) submitted that the process of valuation and disposal of damaged & dismantled EM items has not been completed and upon completion of same, the arrived amount shall be adjusted from the final value for determination of tariff. Therefore, NEEPCO is advised to deduct/adjust the amount accordingly from vetted E&M cost.

This issues with approval of Competent Authority.

संलग्न: उपरोक्त

Signature Not Verified
Digitally signed by ASHISH KUMAR LOHIYA
Date: 2021.03.22 11:11:36 IST

(आशीष कुमार लोहिया)
उप निदेशक (एचपीए)

मुख्य अभियंता (HER&M), के.वि.प्रा.

प्रतिलिपि:-: श्री एच के डेका , निदेशक (तकनीकी), नीपको, ब्रुकलैंड कम्पाउंड, लोअर न्यू कॉलोनी, शिलांग-793003

सेवाभवन, आर. के. पुरम-I, नईदिल्ली-110066 टेलीफोन: 011-26190731 ईमेल: hpaone-cea@gov.in वेबसाइट: www.cea.nic.in
SewaBhawan, R.K Puram-I, New Delhi-110066 Telephone: 011-26190731 Email: hpaone-cea@gov.inWebsite: www.cea.nic.in

Reconstruction, Renovation & Modernization of Kopili Power Station (4X50 MW)
(Abstract of Cost Estimates of Electro Mechanical Works)

Price Level: January'2021

Sl. No	Item	Cost vetted by CEA (in Rs Lakhs)
1	**Preliminary - Annex-S(1)**	282.23
	GST as applicable on 1	50.80
	Sub-Total (Preliminary)	333.03
2	**Generating Plant and Auxiliaries**	
	a) Generating Units and Associated Accessories - **Annex - S(2)**	20,318.41
	b) Auxiliary electrical equipment for power station -**Annex-S(3)**	3,791.67
	c) Auxiliary Mechanical equipment and services for power station - **Annex-S(4)**	1,600.81
	GST as applicable on 2(a), 2(b) & 2(c)	4,628.97
	d) Transportation, handling and Insurance charges	808.21
	GST as applicable on 2(d)	145.48
	e) Erection and commissioning charges (excluding spares)	1,997.26
	GST as applicable on 2(e)	359.51
	Sub-Total (Generating Plant and Auxiliaries)	33,650.31
3	**Switchyard and Pothead Yard Equipment & Services**	
	a) Substation equipment, auxiliary equipment and service of Switchyard - **Annex-S(5)**	1,012.07
	GST as applicable on 3(a)	182.17
	b) Transportation, handling and insurance charges	60.72
	GST as applicable on 3(b)	10.93
	c) Erection & Commissioning Charges (excluding spares)	61.70
	GST as applicable on 3(c)	11.11
	Sub-Total (Switchyard and Pothead Yard Equipment & Services)	1,338.71
4	Contingencies @ 1% of items 2 & 3	349.89
5	Tools & Plants @ 0.5% of items 2 &3	174.95
6	**Sub-Total (Item 1 to 5)**	35,846.89
7	Establishment (as per CEA Guidelines)	2,099.34
8	**Sub Total (Item 6 & 7)**	37,946.24
9	Audit and account Charges (as per CEA Guidelines)	88.31
10	**Subtotal (8+9)**	**38034.55**
11	**Dismantling**	
	Dismantling Charges	912.41
	GST as applicable on Dismantling charges	164.23
	Sub-total (Dismantling charges)	1,076.65
12	**GRAND TOTAL (10+11)**	**39,111.19**

Annex-S(1)

Reconstruction, Renovation & Modernization of Kopili Power Station (4X50 MW)
Cost Estimates of Electro Mechanical Works
(Preliminary)

Price Level: January'2021

Sl. No	Item Particulars	Quantity	Cost vetted by CEA (in Rs Lakhs)
1	2	3	4
1	Design & Consultancy Charges	-	267.23
2	Model Testing for Turbine	-	-
3	Transient Analysis Report	LS	15.00
	Total		**282.23**

Annex-S(2)

Reconstruction, Renovation & Modernization of Kopili Power Station (4X50 MW)
Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

Price Level: January'2021

Sl. No	Item Particulars	Quantity	Rate (Rs.)	Cost vetted by CEA (in Rs Lakhs)
1	2	3	4	5
1	a) Turbine Generator Units 50 MW, 600 RPM, 326.5 M head, 0.9 pf, 11 kV complete with allied equipment such as MIV, Governor, AVR, Excitation System etc.			
	a.1) 56.6 MW (Max. at design head), 600 RPM Turbine Assembly			
	a.1.01) SS Pressure Relief valve (Nos.)	4	79.58	318.32
	a.1.02) Turbine Guide Bearing Pads (1 set consists of 6 nos. of pads) (Sets)	4	18.31	73.24
	a.1.03) Shaft Sealing Arrangement (SS) (Sets)	4	16.48	65.92
	a.1.04) Turbine Shaft (Nos.)	4	86.68	346.72
	a.1.05) SS Cladding Turbine Shaft (Nos.)	4	14.40	57.60
	a.1.06) Ejector (SS) (Nos.)	4	2.44	9.76
	a.1.07) Turbine shaft Blanking Flange (SS) (Nos.)	4	0.23	0.92
	a.1.08) Turbine top cover	4	191.48	765.92
	a.1.09) Upper Labyrinth(Fixed ring) with transport fixture	4	32.84	131.36
	a.1.10) Pivot Ring(Lower ring)	4	101.90	407.60
	a.1.11) Guide vanes along with lever, strap,cover plate , dowels(key set) and joining hardware as applicable	4	70.51	282.04
	a.1.12) Self-lubricated bushes	4	7.25	29.00
	a.1.13) Upper Cone Unit-I & II	2	42.31	84.62
	a.1.14) Upper Cone Unit-III& IV	2	50.99	101.98
	a.1.15) Lower labyrinth(Fixed ring) with transport fixture	4	32.84	131.36
	a.1.16) Lower Cone for Unit-I & II	2	41.28	82.56
	a.1.17) Lower Cone for Unit-III &IV	2	35.74	71.48
	a.1.18) Adjusting Ring for for Unit- I & II	2	18.07	36.14
	a.1.19) Adjusting Ring for for Unit- III & IV	2	16.18	32.36
	a.1.20) Runner Cone	4	10.42	41.68
	a.1.21) Runner	4	473.42	1,893.68
	a.1.22) Labyrinth(Upper and lower moving ring)	8	32.23	257.84
	a.1.23) Cup Rubber Seal, Shear Pin, "O" seal (for Unit#1 & Unit#2)	2	1.54	3.08

	a.1.24) Cup Rubber Seal, Shear Pin, 'O' Seal (for Unit#3 & Unit#4)	2	1.54	3.08
	a.1.25) Hermetically Sealed Limit Switch	4	0.55	2.20
	a.2) 50MW, 11KV 600RPM, 0.9p.f. 50Hz, 3 Phase ertical Shaft A.C Generator			
	a.2.01) Generator complete Assemby (Nos.)	4	1,409.33	5,637.32
	a.2.02) Tools and tackles for generator (Sets)	2	66.89	133.78
	a.2.03) Station Auxiliaries for generators Fire Fighting System 2 Sets for 4 units Motorised Power Pack 4 Sets for 4 units	1	126.57	126.57
	a.2.04) Special Instruments for generator			
	Continuous Online Partial Discharge Analyzer, Moisture Detector, Continuous Online Vibration Monitor and Shaft Current Monitor (Sets)	4	103.32	413.28
	a.2.05) Generator Coolers (Sets)	4	188.13	752.52
	a.2.06) Condition monitoring Items for generator			
	Continuous Online Air Gap Monitoring System, Online Magnetic Flux Monitoring System, Online End Winding Vibration Monitoring System (Sets)	4	251.84	1,007.36
	a.3) 1400 mm dia Spherical Valve (MIV)			
	a.3.01) New SS Spherical Valve (MIV) (Nos.)	3	339.45	1,018.35
	a.3.01.01) Associated components	3	160.90	482.71
	a.3.01.02) Tools & Tightening Devices	1	11.86	11.86
	a.3.02) Refurbishment of Damaged Spherical Valve (Sets)	1	82.45	82.45
	a.3.03) Optional items in case found defective during refurbishment		26.86	26.86
	a.3.04) Associated components for refurbishment of Spherical Valve (Sets)		160.90	160.90
	a.4) Governing System			
	a.4.01) Governor System (Sets)	4	64.87	259.48
	a.4.02) Oil Pressure System for Governor & MIV (Sets)	4	38.75	155.00
	a.4.03) Instruments for Turbine, CWS, DDS, HP & LP, CAS, HR/TR for four units (Lot)	1	221.88	221.88
	a.4.04) Oil Leakage Unit (Sets)	4	3.23	12.92
	a.4.05) Lubrication Oil Filtration System (Sets)	1	28.41	28.41
	a.5) Static Excitation Sytem			
	a.5.1) 400KVA, 11KV/0.200KV Dry Type Excitation Transformer without enclosure (Nos.)	4	15.89	63.56
	a.5.2) Static Excitation System and Power Cables for Excitation System (Sets)	4	100.00	400.00
	b) Unit Control Boards (Included in SCADA)			
	c) Cooling Water System comprising pump sets, valves, piping etc.			
	c.1) Cooling water pump set for Unit 1 and 2	3	17.75	53.25
	c.2) Cooling water pump set for Unit 3 and 4	3	17.75	53.25
	c.3) Supply of Electrical Starter Cum Control Panel	2	19.77	39.54
	c.4) Supply of all Instruments with Instrument Valves & Boss for Flow, Pressure, Temperature etc for Main Header	2	3.64	7.27

	c.5) Supply of Cables, Junction Boxes, Supports, Gaskets	2	2.94	5.89
	c.6) Supply of Main Header Assembly Material (Pipe, Pipe Fittings, Flanges etc)	2	64.14	128.28
	c.7) Fasteners, Hardwares, Gaskets Etc for main header	2	14.54	29.07
	c.8) Supply of all type of valves for Main Header (Gate, Butter Fly, Niddle, Check etc.) including motorised	2	59.25	118.51
	c.9) Supply of Filters (Y-strainer & Cyclone Seperator)	2	62.76	125.53
	c.10) Supply of Unit Cooling Water Lines Material (Pipe, Pipe Fittings, Flanges, Fasteners etc)	4	29.16	116.63
	c.11) Fasteners, Hardwares, Gaskets Etc for Unit header & Lines	4	9.63	38.53
	c.12) Supply of all type of valves for Unit Cooling Water Lines (Gate, Butter Fly, Niddle, Check etc.) including motorised	4	21.95	87.79
	c.13) Supply of all Instruments with Instrument Valves & Boss for Flow, Pressure, Temperature etc for Unit Header & Lines	4	9.11	36.45
	c.14) Supply of Cables, Junction Boxes, Supports, Gaskets	4	1.47	5.89
	d) Drainage & Dewatering System			
	d.1) Power House Drainage & Dewatering System (Sets)	2	87.70	175.41
	d.2) MIV Hall Dry Pit Pump for flood handling (Sets)	1	95.14	95.14
	d.3) PH Rain Water D&D System (Sets)	1	150.30	150.30
	d.4) Switchyard drainage system including pumps, starter panel,valve,gates, header pipes, gauges etc. (Sets)	1	34.13	34.13
	e) LP Compressed Air System including pipes and valves			
	e.1) LP Compressors skid with seal control panels (Set of 4 nos.)	1	14.66	14.66
	e.2) LP Air Pipe line & Fittings (Sets)	1	11.48	11.48
	f) Spares @5% on item 1(a) to 1(e)			
	Spares for Item 1.a - Turbine @ 5% (Sets)	1	68.96	68.96
	Spares for Item 1.a.2 - Generator (Sets)	1	206.28	206.28
	Spares for item 1.a.2 - Generator Coolers (Sets)	1	23.02	23.02
	Spares for item 1.a.3 - Main Inlet Valve (Sets)	1	26.68	26.68
	Spares for item 1.a.4 - Governing System (Sets)	1	56.02	56.02
	Spares for item 1.a.5 - Static Excitation System (Sets)	1	15.00	15.00
	Spare- for cooling water system	1	56.08	56.08
	Spares for item 1.d.1) - PH Drainage & Dewatering System (sets)	1	29.65	29.65
	Spares for item 1.d.2) - MIV Hall Dry Pit pump (Sets)	1	8.40	8.40
	Spares for item 1.d.3) - Rain Water dewatering system (Front & Back Side of PH) (Sets)	1	7.39	7.39

	Spares for item 1.e - Lifting Devices (Sets)			1.53
2	11 kV 4000 Amps Isolated Phase Bus Duct for Generator - Transformer Connection, including LAVT, NGT and ICT, Surge Protection and Neutral Earthing System (Sets)	4	67.13	268.52
3	Supervisory Control And Data Acquisition System (SCADA)			
	3.1) Valmet DNA based UCBs, LCB for common Auxiliaries Controls, LCB for Electrical Power Supply Services, LCB for Switchyard Controls, RI/O panels for Switchyard controls, RI/O panel at Dam & BFV House, HMI, Furnitures, GPS based time synchronization system, and UPS for HMI for 4 Units (Sets)	1	600.00	600.00
4	Unit Control & Protection Panels			
	a) Unit Auxiliary Board (Sets)	4	13.22	52.88
	b) Generator protection panel (Nos.)	4	45.00	180.00
5	.....kV ..... Amps SF6 Generator Circuit Breaker (If provided) (Not provided)	Not applicable		
6	Lubricating Oil and Governor Oil for first filling			
	First filling of Oil of Governor System (Lots)	4	4.65	18.60
7	Pressure Shaft Valve (2800 mm Dia)			
	Lattice door type SS BF Valve and acessories (Nos.)	2	419.04	838.07
	Oil Pressure System (Sets)	2	59.81	119.62
	Control System & Instruments for BFV (Sets)	2	48.71	97.42
	First Filling oil for Pressure Shaft Valve sytem (Lots)	2	1.29	2.58
8	Spares for Items 2 to 7			-
	8.1) Spares for IPBD incl. LAVT etc. @ 3%		2.01	2.01
	8.2) Mandatory spares for Valmet DNA Control System as indicated in technical offer	1	20.00	20.00
	8.3) Spares for Unit Control & Protection Panels @ 3%		1.75	1.75
	8.4) Spares for Pressure Shaft Valve	1	65.26	65.26
	Total			**20,318.41**

Annex-S(3)

Reconstruction, Renovation & Modernization of Kopili Power Station (4X50 MW)
Cost Estimates of Electro Mechanical Works
(Auxiliary Electrical Equipment For Power Station)

Price Level: January'2021

Sl. No	Item Particulars	Quantity	Rate (Rs.)	Cost vetted by CEA (in Rs Lakhs)
1	2	3	4	5
1	a.1) Generator Step Up Transformer (rating 11/220 kV, 65 MVA, Three Phase, OFAF Type) (nos.)	5	399.16	1,995.80
	a.2) Tests on Generator Transformers	1	18.69	18.69
	b) Generator transformer online DGA monitoring (Nos.)	1	47.75	47.75
2	Unit Auxiliary Transformer (Rating 11/0.433 kV, 0.5 MVA, 3 pahse Cast resin dry Type) (Nos.)	4	11.84	47.34
3	a) Station Service Transformer (Rating 132/33 kV, 5MVA, 3 Phase, ONAN Type) (nos.)	1	81.70	81.70
	b) Station Service Transformer (Rating 33/0.415 kV, 1.6 MVA, 3 Phase Oil fill Type) (Nos.)	2	35.15	70.29
4	HT / LT Switchgear for Power Supply to PH complex, Pothead Yard, BFV and Dam Site		-	-
	a.1) 33 KV Vacuum Circuit Breaker (Sets)	2	4.85	9.70
	a.2) 33 kV 400 amps Triple Pole Double Break Isolator without E/s (Sets)	2	2.57	5.14
	a.3) 33 kV 400 amps Triple Pole Double Break Isolator with 1 E/s (Sets)	1	2.95	2.95
	a.4) 33 kV CT, 100-50/1	6	0.99	5.91
	a.5) 33 kV PT (Sets)	3	0.94	2.82
	a.6) 33 kV Lightning Arrestor (Sets)	3	0.79	2.37
	a.7) ACSR Dog Conductor (km)	1	1.15	1.15
	a.8) Terminal Connectors for 33 kV VCBs, Isolators, CTs, PTs & Las (Lot)	1	2.65	2.65

	a.9) 33 kV Bay (Equipped with Lattice Structure (Sets)	2	0.60	1.19
	b.1) 33 kV CT, 100-50/1	3	0.96	2.87
	b.2) 33 kV Bus Support Insulator along with terminal connector	3	0.56	1.67
	c.1) 33/415 V Transformer Control and protection panel (nos.)	2	8.00	16.00
	c.2) 33 kV Incomer Control and protection panel (Nos.)	1	8.00	8.00
	d.1) Station Service Board for Unit #1 & #2	1	66.11	66.11
	d.2) Station Service Board for Unit #3 & #4	1	62.42	62.42
	e.1) Switchyard AC distribution board (Set)	1	4.26	4.26
	e.2) BF Valve AC Distribution board cum starter panel (Set)	1	5.09	5.09
5	DC Batteries, Battery Charging Equipment, DC Distribution Board with DC Switchgear (Rating ... V, ... AH, & ...V, ... AH)			
	a.1) 10 kVA Inverter	1	4.56	4.56
	a.2) 220 V DC 100 Amps Thyristor Controlled Charger Panel	1	10.18	10.18
	a.3) 220V 550 AH OPzS TBS Lead Acid Battery Bank	1	31.80	31.80
	a.4) 220 V, 425 AH PLANTE consisting of 110 nos. cell along with acid, stand and accessories (Sets)	1	48.25	48.25
	a.5) Automatic Float 120 Amps and Float cum Boost 120 Amp battery charger equipment (Sets)	1	12.11	12.11
	a.6) 220 V DC distribution board (Sets)	1	8.85	8.85
	b) 48 V/300 AH battery and Charger	0	-	-
	b.1) Automatic Dual Float cum Boost (50 Amps) Battery Charging Equipment suitable for 48 Volts 300AH VRLA battery (Sets)	2	4.17	8.33
	b.2) Valve regulated SMF lead acid 48 Volts (24 cells) 300AH battery complete with inter cell, inter row connectors, standard accessories and MS rack (Sets)	2	1.96	3.92
	c) 24 V/200 AH Battery and Charger	0	-	-
	c.1) Automatic Dual Float cum Boost (100 Amps) Battery Charging Equipment suitable for 24 Volts 200AH PLANTE battery (Sets)	2	5.19	10.39
	c.2) Lead acid 24 Volts 200AH battery (consisting of 12 cells for each battery) (Sets)	2	3.09	6.17

6	Diesel Generating Sets (Emerg. 0.440 kV, 750 kVA) (In addition to Construction Power) (Nos.)	2	46.07	92.14
7	Control & Power Cables			
	a) Power Cables (Lot)	1	223.07	223.07
	b) Control Cables (Lot)	1	364.25	364.25
8	Refurbishment of Cable Racks, Trays, Supporting Structure and Accessories (Lot) Cost included in PES Erection Offer	1	-	-
9	CCTV, Surveillance System & Telecommunication System at KHEP &UmrongNallah with OFC conectivity and P2P connectivity as back up (Set)	1	24.64	24.64
10	a) Ground Mat &Earthing for Switchyard (MT)	10	1.06	10.56
	b) Earthing Flats (km)	2	10.34	20.68
	c) Earth wire for SY (km)	1	1.08	1.08
11	Illumination of PH Complex and Switchyard (Lot)	1	203.34	203.34
12	Electrical Workshop (included in S-4)		-	-
13	Electrical Test Lab & Testing Equipments (Lot)	1	135.06	135.06
14	Sub-Total (Items 1 to 13)			3,681.24
15	Spares @ 3% on item 14			110.44
	Total			**3,791.67**

Annex-S(4)

Reconstruction, Renovation & Modernization of Kopili Power Station (4X50 MW)

Cost Estimates of Electro Mechanical Works

(Auxiliary Mechanical Equipment and Services For Power Station)

Price Level: January'2021

Sl. No	Item Particulars	Quantity	Rate (Rs.)	Cost vetted by CEA (in Rs Lakhs)
1	2	3	4	5
1	Overhauling of Electrical Overhead Travelling Crane for PH (Capacity 150 T) (Lot)	1	42.02	42.02
2	Electrical Overhead Travelling Crane for GIS (Capacity ..... T) (Lot)	Not required		
3	Overhauling of Electrical Overhead Travelling Crane for BFV House (Capacity 40 T) (Lot)	1	11.20	11.20
4	Electric Lifts/ Elevators	1	44.80	44.80
5	Fire protection, fire detection & alarm system and gas suppression system			
	Fire Water Pumping System (Lot)	1	357.12	357.12
	Fire Hydrant System (Lot)	1	290.69	290.69
	MVW Spray System (Lot)	1	76.65	76.65
	HVW Spray System (Lot)	1	150.52	150.52
	IG 541 Fire Suppression System (Lot)	1	72.83	72.83
	Aspirating Type Smoke Detection System (Lot)	1	60.00	60.00
	Passive Fire Protection System (Lot)	1	36.00	36.00
	Nitrogen Injection System for Generator Transformers (Lot)	1	102.79	102.79
	Fire Detection and Alarm System (Lot)	1	30.38	30.38

	Fire Extinguishers (Set)	1	2.98	2.98
6	Heating, Ventilation and Air-conditioning (Set)			
	Fresh Air, Ventilation exhaust ventilation system	1	49.01	49.01
	Variable Refrigerant AC system	1	63.18	63.18
7	Potable Water Supply for PH Complex and Pothead Yard (Set)	Not required		
8	Oil Handling Equipment with Pipes, valves, tanks, purifiers (Set)			
	a) 6000 LPH Transformer oil filter machine (Set)	1	18.00	18.00
	b) Industrial oil purification system (1000 LPH) along with spares and tool kit	2	16.73	33.46
9	Workshop Machines and equipment (Set)	1	112.55	112.55
10	**Sub-Total (Items 1 to 9)**			1,554.18
11	Spares @ 3% on item 10			46.63
	Total			**1,600.81**

Annex-S(5)

Reconstruction, Renovation & Modernization of Kopili Power Station (4X50 MW)
Cost Estimates of Electro Mechanical Works
(Substation equipment, auxiliary equipment and service of Switchyard)

Price Level: January'2021

Sl. No	Item Particulars	Quantity	Rate (Rs.)	Cost vetted by CEA (in Rs Lakhs)
1	2	3	4	5
1	220 kV Switchyard Equipments including Coupling Capacitors, wave traps, LAs etc.			
a)	220 kV, 3150 A SF6 Circuit Breaker (Nos.)	8	16.81	134.48
b)	Isolator / Pantograph with / without earthing blade (Rating ... kV)			
	b1) 3-Phase, 245 KV/1250A Centre Break Isolator complete with insulator, base frame and without mechanism box (Mechanically Ganged but without Earth Switch) (Sets)	2	5.23	10.45
	b.2) 3-Phase, 245 KV/1250A Centre Break Isolator complete with insulator, base frame and mechanism box (Mechanically Ganged but without Earth Switch) (Sets)	2	6.36	12.71
	b.3) Mechanism Box Motor operated (MOM Box) for Main 220KV make existing Centre Break Isolator (suitable for both channel & tubular design), type: RC 300 (Sets)	17	1.18	20.11
	b.4) Other Items such as contactor, OLR, Aux switches, motor required for repairing of damaged isolator MOM boxes (Lot)	1	2.64	2.64

	b.5) Repairing of 245 kV Isolators (Lot)	1	34.01	34.01
c)	Current Transformers (Rating 220 kV) (Nos.)			
	c1) Current Transformers without Support Structure	6	4.63	27.80
	c2) Current Transformers with Support Structure	18	4.87	87.62
d)	Potential Transformers / CVT (Rating 220 kV) (Nos.)			
	d1) 220 kV Potential Transformer with Juncion Box	6	7.08	42.46
	d2) 220 kV CVT with Junction Box	9	4.22	37.95
e)	Lightning Arrestors (Rating 216 kV) (Nos.)	21	0.80	16.80
f)	f1) Post Insulator	12	0.20	2.38
	f2) Post insulator structure and terminal connectors	6	0.51	3.03
g)	220 kV Wave Traps	6	6.40	38.38
2	..... kV GIS Bays (Not provided)			-
3	XLPE Cables (Included in S3)			-
4	Shunt Reactor (Not envisaged)			-
5	Bus Conductors, Hardwares and Insulators			-
	a) Zebra Conductor for Bus and for GT to SY (km)	12	8.06	96.70
	b) Hardware Fittings and Insulators (Set)	24	4.22	101.20
6	Protection Panels for Bus, Line & Reactor			
	a) Control, Protection & Relay Panels (Lot)	1	169.60	169.60
7	DC Battery, Charger and associated equipment (included in S3)			-
8	Fire Protection System (included in S4)			-
9	PLCC Panels	3	39.60	118.80
10	Gantry, Foundation for Structures & miscellaneous civil works for other equipment like shield wire, insulators, lightning masts			-

	a) 220 kV Tower between GT Yard and SY (nos.)	1	25.47	25.47
11	Fencing & Security (included in Civil works Estimate)			-
12	**Sub-Total (1 to 11)**			**982.60**
13	Spares @ 3% on Item 12			29.48
14	**Total**			**1,012.07**

Reconstruction, Renovation & Modernization of Kopili Power Station (4X50 MW)

DISMANTLING OF ELECTRO-MECHANICAL COMPONENTS

Sl. No	Item Description	Cost vetted by CEA (in Rs Lakhs)
1	Dismantling of Miscellaneous Equipments including cleaning, and shifting and running and maintenance of pumps, cranes etc.	208.35
2	Dismantling of Electro-Mechanical Equipment's of Kopili Power House, including Transportation and Stacking in designated area	398.94
3	Dismantling of Turbines & Auxiliaries, MIVs, Penstock BF Valves and Switchyard Equipments, including Transportation and Stacking in designated area	185.12
4	Support Services in carrying out day to day miscellaneous works related to restoration works	120.00
	Total Dismantling	**912.41**

ANNEXURE - VIII

C - WORKS			
Cost provisions for Rehabilitation of HM equipments of Umrong Dam (Gates) :			
Sl.No.	Item	Unit	Quantity
1	Umrong Dam Spillway Radial Gate		
1.1	Refurbishment of 3 nos. of Spillway Radial Gate of size 9.15 m x 7.6 m, Replacement of Rubber Seals alongwith SS hardwares and Providing maintenance platform shall be included complete	LS	-
1.2	Sand/Grit Blasting and Painting of Gate assembly	LS	-
1.3	Modification of Rope drum hoist including replacement of wire rope, motor, brake, bearings, LCPs, Pulleys etc. complete with approach ladder handrails etc.	LS	-
1.4	Painting of RDH and hoist bridge	LS	-
1.5	Installation of Radar Type Water level sensors	LS	-
1.6	Installation of ARMAC System	LS	-
2	Under Sluice Gates		
2.1	Supply, fabrication and installation of 2 sets side guide, sill beam and track assembly made up of Stainless steel complete	LS	-
2.2	Refurbishment of 2 sets of Gate Leaf including, replacement of Rubber Seals alongwith SS hardwares complete	LS	-
2.3	Sand/Grit Blasting and Painting of2 Gates assembly	LS	-
2.4	Overhaulic of Screw Hoist	LS	-
3	Under Sluice Stoplog Gates		
3.1	Supply, fabrication and installation of 2 sets side guide, sill beam and track assembly made up of Stainless steel complete	LS	-
3.2	Refurbishment of 2 sets of Gate Leaf including, replacement of Rubber Seals alongwith SS hardwares complete	LS	-
3.3	Sand/Grit Blasting and Painting of2 Gates assembly	LS	-
3.4	Overhaulic of Screw Hoist	LS	-
4	Adit Gate	LS	-
4.1	Supply, fabrication and installation of Adit Gate of Size 2 m X 2.0 m complete	LS	-
5	Civil work	LS	-

Bill of Quantities for Penstock and Steel In Liner Umrong System of Kopili PS

Item No.	Description of Item	Unit	Qnty.
1	**(A) PENSTOCK (D/S OF AB-1 TO U/S OF AB-8 INCLUDING REDUCER BEYOND D-LINE)**		
1.1	Design, Fabrication, painting (exterior surface) supply, transportation, handling, site storage, erection and commissioning (including provision for all labour, tools and tackles) of Penstock including bend and stiffeners between d/s OF AB-1 to u/s AB-8 including reducer beyond D-Line on the concrete saddle supports including supply, fabrication and fixing of saddle plates, bearing plates and necessary embedment complete in all respect as per design, drawing and technical specification.	MT	3060
1.2	Design, Fabrication, painting (Exterior Surface), supply, transportation, handling, site storage, erection and commissioning (including provision for all labour, tools and tackles) of **Expansion Joints and Manholes** including supply, fabrication and fixing of flanges, seals, ladders to approach Manhole, nut & Bolts and others complete in all respect as per design, drawing and technical specification.	MT	100
1.3	Radiographic testing for welded joint as per specification and as directed complete.	RM	1672
1.4	Ultrasonic testing for all field welded joints as per specification and as directed complete.	RM	5670
1.5	Magnetic Particle Test of all field Joints as per specification and as directed complete.	RM	5670
1.6	Hydro Test of each penstock ferrules, bends and reducer after fabrication as per approved details. Supply, fabrication, transportation, handling, fixing, dismantling, sealing etc. of test jig, flanges, bulkhead, pipes, valves and other necessary arrangement required for satisfactory performance of the test as per design, drawing and specification shall be also be included.	MT	3060
2	**(B) STEEL IN-LINER (IN HRT AND BETWEEN U/S OF AB-8 TO D-LINE)**		
2.1	Design, fabrication, supply, transportation, handling, site storage & erection (including provision for all labour, tools and tackles) of in-liners in the existing steel/concrete sections of HRT and Penstocks including provision of grout holes & plugging, Anti percolation rings and back strip for field welding complete as per design, drawing and technical specification.	MT	2100
2.2	Ultrasonic testing for all field welded joints as per specification and as directed complete.	RM	4940
2.3	Magnetic Particle Test of all field Joints as per specification and as directed complete.	RM	4940

Bill of Quantities (BOQ) for the work of "Civil Works pertaining to restoration of Kopili Hydro Electric Plant, Umrongso, Assa			
Sl. No.	Description of Items	Qnty.	Unit
1	Dewatering		
1.1	Dewatering of Surface/ Underground Construction Sites including all construction works, labour plant and materials necessary to keep the construction sites including all construction works, labour, plant and materials necessary for dewatering. Complete in all respect as per technical specification, drawings and as directed by the Engineer-in-Charge		
1.1.1	Dewatering of Surface Construction Sites including all labour, plant, materials, installation, operation, power supply, maintenance and removal of pumping equipments from site	5000.00	kWHr
1.1.2	Dewatering of Underground Construction Sites including all labour, plant, materials, installation, operation, power supply, maintenance and removal of pumping equipments from site	5000.00	kWHr
2	Dismantling		
2.1	Dismantling of Designated Portion of existing Anchor Blocks with Core Cutting including dismantling of RCC alongwith cutting of Reinforcement & dismantling of PCC covering all labour, materials, equipments and services for successful completion of the works as shown in the construction drawings, as per the technical specification or as directed by the Engineer-in-Charge	4650.00	sqm
2.2	Dismantling of Structures (excluding Dismantling of designated portions of Anchor Blocks with Core Cutting): Dismantling & Demolishing of existing structures including stacking of steel re-bars and disposal of unserviceable materials within 50m lead as per the direction of the Engineer-in-Charge By Manual Means/ Mechanical Means		
2.2.1	Demolishing Brick Work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable materials within 50m lead as per direction of Engineer-in-Charge In Cement Mortar	50.00	cum
2.2.2	Reinforced Cement Concrete	1700.00	cum
2.2.3	Dismantling Tile Works on Floors & walls laid in cement Mortar including stacking material within 50m lead as per the director of the Engineer-in-Charge		
2.2.3.1	For Thickness of Tiles 10mm to 25mm	600.00	sqm
2.2.3.2	For Thickness of Tiles above 25mm and upto 40mm	1600.00	sqm
2.3	Cost of haulage excluding loading & unloading for removal of dismantled concrete pieces: Kaccha Track beyond the initial lead of 50m (Lead = 2.0 km)	3250.00	cum/km
2.4	Chipping of concrete: Chipping of concrete and removal of all loose and friable materials followed by proper cleaning and removal of foreign materials, complete in all respect with all materials, labours, tools & plants, etc as per the technical specification or as directed by the Engineer-in-Charge	8000.00	sqm

Bill of Quantities (BOQ) for the work of "Civil Works pertaining to restoration of Kopili Hydro Electric Plant, Umrongso, Assam			
Sl. No.	Description of Items	Qnty.	Unit
3	Clearing of Debris		
3.1	Clearing of Debris along the Penstock Alignment: Clearing of Debris including Loading and unloading by mechanical means, transportation & disposal upto the initial lead of 1.0km	7500.00	cum
3.2	Cost of haulage excluding loading & unloading for removal of debris along penstock alignment: Katcha Track beyond the initial lead of 1.0km (Lead = 2.0 km)	7500.00	cum/km
3.3	Clearing of Debris in HRT: Clearing of Debris including Loading and unloading by mechanical means, transportation & disposal upto the initial lead of 1.0km	500.00	cum
3.4	Cost of haulage excluding loading & unloading for removal of debris in HRT: Katcha Track beyond the initial lead of 1.0km (Lead = 2.0 km)	500.00	cum/km
3.5	Clearing of Debris in Power House: Clearing of Debris including loading & unloading by mechanical means, transportation & disposal upto initial lead of 1.0km	200.00	cum
3.6	Cost of haulage excluding loading & unloading for removal of debris along penstock alignment.Katcha Track beyond the initial lead of 1.0km (Lead = 2.0 km)	200.00	cum/km
4	Surface Excavation		
4.1	Excavation using manual means: Excavation using manual means including loading and carrying of excavated material to disposal areas with all lifts & leads upto 1000m	2500.00	cum
4.2	Excavation using mechanical means: Excavation using mechanical means including cutting, loading and carrying of excavated material to disposal areas with all lifts & leads upto 1000m	5500.00	cum
4.3	Cost of haulage excluding loading & unloading for removal of excavated muck: Katcha Track beyond the initial lead of 1.0km	16000.00	cum/km
4.4	Earth/ Sand Filling Earth/ sand Filling in Plinth in layers not more than 150mm thick including necessary carriage, watering, ramming, etc. complete as directed and specified including payment of land compensation, crest royalty, sales tax and other duties and taxes as may be necessary. With earth or silt or sand obtained by head load with lead upto 90m and lift upto 2m	150.00	cum
4.5	Random Backfilling: Backfilling behind complete as per drawings & technical Specification. Complete in all respect with all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	1500.00	cum

Bill of Quantities (BOQ) for the work of "Civil Works pertaining to restoration of Kopili Hydro Electric Plant, Umrongso, Assam			
Sl. No.	Description of Items	Qnty.	Unit
5	Concreting Works		
5.1	Plain Cement Concrete		
5.1.1	Plain Cement Concrete in Anchor Blocks: Plain Cement Concrete in open foundation complete as per drawings & Technical Specification including steel shuttering formwors Without Plasticiser PCC Grade M15	25.00	cum
5.1.2	Plain Cement Concrete along Penstock Alignment: Plain Cement Concrete in open foundation complete as per drawings & Technical Specification including steel shuttering formwors Without Plasticiser PCC Grade M15	28500.00	cum
5.1.3	Plain Cement Concrete in HRT: Plain Cement Concrete complete as per drawings & Technical Specification including steel shuttering formwors Without Plasticiser PCC Grade M20	1000.00	cum
5.1.4	Plain Cement Concrete in Power House		
5.1.4.1	Plain Cement Concrete: Plain Cement Concrete in open foundation complete as per drawings & Technical Specification including steel shuttering formwors Without Plasticiser PCC Grade M15	50.00	cum
5.1.4.2	Plain Cement Concrete: Plain Cement Concrete complete as per drawings & Technical Specification including steel shuttering formwors Without Plasticiser PCC Grade M20	125.00	cum
5.2	Reinforced Cement Concrete		
5.2.1	Reinfored Cement Concrete in Anchor Blocks: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork With Plasticiser RCC Grade M20 Using Concrete Mixer	4000.00	cum

Bill of Quantities (BOQ) for the work of "Civil Works pertaining to restoration of Kopili Hydro Electric Plant, Umrongso, Assam"			
Sl. No.	Description of Items	Qnty.	Unit
5.2.2	Reinforced Cement Concrete in Saddle Supports: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork With Plasticiser RCC Grade M20 Using Concrete Mixer	2100.00	cum
5.2.3	2nd Stage Reinforced Cement Concrete in Saddle Supports: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork With Plasticiser RCC Grade M25 Using Concrete Mixer	105.00	cum
5.2.4	Reinforced Cement Concrete in Power House		
5.2.4.1	Reinfored Cement Concrete in Substructure: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork With Plasticiser RCC Grade M20 Using Concrete Mixer	70.00	cum
5.2.4.2	Reinfored Cement Concrete in Superstructure: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork With Plasticiser RCC Grade M20 Using Concrete Mixer	200.00	cum
5.2.4.3	2nd Stage Reinforced Cement Concrete in Grooves/Block Outs: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork With Plasticiser RCC Grade M25 Using Concrete Mixer	100.00	cum
6	**Steel for Reinforcement**		
6.1	Reinforcement in Anchor Blocks: Supplying, fitting and placing TMT conforming to IS: 1786 Fe 500D reinforcement including splicing complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	180.00	MT

Sl. No.	Description of Items	Qnty.	Unit
6.2	Steel Re-bar as Dowels in Anchor Blocks: Supplying, fitting and placing TMT conforming to IS: 1786 Fe 500D reinforcement including solicing complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	95.00	MT
6.3	Reinforcement in Saddle Supports: Supplying, fitting and placing TMT conforming to IS: 1786 Fe 500D reinforcement including solicing complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	40.00	MT
6.4	Reinforcement in Power House: Supplying, fitting and placing TMT conforming to IS: 1786 Fe 500D reinforcement including solicing complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	40.00	MT
7	**Drilling & Grouting**		
7.1	Drilling: Percussion drilling at designated areas as shown in the construction drawings or as directed by the Engineer-in-Charge including casing, driving and permeability tests progressively complete in all respect with all labours, materials, plant, equipments, etc. as per technical specification given, drawing and as directed by the Engineer-in-Charge. Dilling of holes upto 48mm dia	6000.00	m
7.2	Cement Grouting: Cement Grouting including supply of all materials like cement, sand, admixture, etc.) which are not specifically mentioned but required to complete the job), water testing of holes including supply of all required apparatus complete, labours, plants and equipments, etc. in all respect as per technical specification and as directed by the Engineer-in-Charge	12000.00	per 50kg bags of cement
7.3	Sand required for Grouting	30.00	cum
8	**Drilling & Fixing of Steel Rebars as Dowels**		
8.1	Providing, Placing and fixing in position Chemical rebar fastners including drilling of holes of specified size and depths upto 250mm into the old concrete, cleaning holes, placing chemicals inside the holes and fixing reinforcement bars all complete as per specification or as directed by the Engineer-in-Charge in locations indicated in the Construction Drawings		
8.1.1	20mm dia re-bar fastners	30000.00	Nos
9	**Non- Shrink Grouting**		
9.1	Non- Shrink Grouting: Providing & injecting approved grout in proportion recommended by the manufacturer at location as directed by the Engineer-in-Charge by suitable gun/pump at required pressure including cutting of nipples after curing, etc. complete as per the technical specification or as directed by the Engineer-in-Charge		

Sl. No.	Description of Items	Qnty.	Unit
9.1.1	Stirred mixed non shrink cementitious grout of approved make	1700000.00	kg
10	Concrete Waterproofing		
10.1	Providing, applying "XYPEX" Concrete Water Proofing & Durability Enhancement by Crystallization to be supported by at least two International Test Reports showing clear Scanning Electron Microscopic (SEM) Photographs of desified and mature crystals forming to plug all the capilary tracks and pores of the concrete permanently and permeability test as per IS: 720 conducted by CSRI. The concrete should not absord water more than 0.5 grams and not more than 1mm from the concrete surface. The product to be listed in ICC-ES-EVALUATION REPORT INDEX January 2009. The treatment to be carried out on the concrete surfaces as per manufacturer's specification and as directed by the Engineer-in-Charge. The treatment to be carried out on the concrete surfaces including cleaning of all RCC surfaces as per manufacturer's specification/ datasheet. The application to be carried out in two coats with coverage rate of 0.8kg per coat	2000.00	sqm
11	Epoxy based Bonding Agent		
11.1	Supplying, mixing and applying a Epoxy resin based bonding agent of reputed make for proper bond of old to new concrete	3000.00	sqm
12	Masonry and Allied Works		
12.1	Stone Work Stone Masonry Works in Cement Mortar 1:3 complete in all respect as per construction drawings and technical specification		
12.1.1	Random Rubble Masonry	500.00	cum
12.2	Brick Work		
12.2.1	230mm thick Brick Wall in cement mortar with 1st class brick including racking out joints and curing complete as directed in structure		
12.2.1.1	In Substructure upto plinth level including dawatering , if necessary		
a)	In Proportion 1:4	200.00	sqm
12.2.2	1st Class Brick Nogged Wall in cement mortar including racking out joints and curing complete as per technical specification and as directed by the Engineer-in-Charge		
12.2.2.1	112mm Thick Brick Wall		
a)	In cement mortar in proportion 1:4 (1 cement: 4 sand)	600.00	sqm
12.3	Providing and laying 25mm thick Damp Proof Course with cement concrete in prop 1:1.5:3 with graded stone aggregate of 10mm down nominal size including providing approved damp proof admixture in proportion as recommended by the manufacturer including curing, etc. complete in all respect as per the technical specifiucation and as directed by the Engineer-in-Charge	75.00	sqm

Sl. No.	Description of Items	Qnty.	Unit
12.4	**Plinth Protection Works**		
12.4.1	Providing Plinth Protection with Bricks flat laid in cement mortar 1:4 and finished with 15mm thick cement plaster in prop. 1:2 with a floating coat of neat cement finish	150.00	sqm
12.4.2	Providing drain with Cement Concrete (1:3:6) 10cm thick sides 10cm thick bed over brick flat soling including 15mm thick cement plastering in prop 1:3 finished with a floating coat of cement slurry as directed with necessary shuttering for sides and earth work in excavation of foundation trenches and refilling sides after completion of work etc. as specified. 300mm wide and average 250mm deep with bed slope 1 in 150 with initial depth of 100mm	500.00	rm
13	**Plastering Works**		
13.1	Cement Plaster in Fine Sand: Cement Plaster in Single Coat including arises or rounded angles not exceeding 80mmgirth and finished even and smooth including curing complete as per technical specification and as directed by the Engineer-in-Charge		
13.1.1	12 mm Thick Cement Plaster of Mix 1:4 (1 Cement: 4 Fine Sand)	1600.00	sqm
13.1.2	15 mm Thick Cement plaster on the rough side of single or half brick wall of mix 1:4 (1 Cement: 4 Fine Sand)	350.00	sqm
13.1.3	6mm Thick Plaster of Mix 1:3 (1 Cement: 3 Fine Sand)	200.00	sqm
13.1.4	Cement Plaster with a Floating Coat of Neat Cement		
13.1.4.1	15 mm Thick Cement Plaster finished with a floating coat of neat cement of mix: 1:3 (1 Cement : 3 Fine Sand)	100.00	sqm
14	**Finishing Works**		
14.1	Brick Soling: Providing Soling in Foundation and under floor with stone/ best quality picked Jhama Brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete in all respect as per the technical specification and as directed by the Engineer-in-Charge. Brick on Flat Soling	200.00	sqm
14.2	Floor Finishing Works		
14.2.1	Vitrified Tiles		

Sl. No.	Description of Items	Qnty.	Unit
14.2.1.1	On Floor: Providing Vitrified Floor Tiles of approved quality of specified size, shape and thickness not less than 18mm on floors over 15mm thick base of cement mortar in prop 1:3 (1 cement: 2 coarse sand) including cutting where necessary finished with flush pointing with Fix-A-Tile/ White Cement Slurry mixed with approved pigment to match the shade of the tiles, complete at all levels as specified in the technical specification and as directed by the Engineer-in-Charge Deluxe Range: Of Size 1200mm x 1800mm and above	200.00	sqm
14.2.1.2	On Skirting: Providing Vitrified Floor Tiles of approved quality of specified size, shape and thickness not less than 18mm on skirting over 15mm thick base of cement mortar in prop 1:3 (1 cement: 2 coarse sand) including cutting where necessary finished with flush pointing with Fix-A-Tile/ White Cement Slurry mixed with approved pigment to match the shade of the tiles, complete at all levels as pscified in the technical specification and as directed by the Engineer-in-Charge Deluxe Range: Of Size 1200mm x 1800mm and above	100.00	sqm
14.2.2	Ceramic Tiles		
14.2.2.1	On Walls: Providing polished Ceramic Wall Tiles of approved quality, size, shape and thickness not less than 8mm on walls and skirtings over cement mortar bed 10mm thick in prop. 1:3 (1 cement: 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-a-Tile/ White Cement Slurry mixed with approved pigment to match the shade of tiles complete as all levels as specified in the technical specification and as directed by the Engineer-in-Charge Deluxe Range: Of Size 300mm x 450mm and above	660.62	sqm
14.2.3	Anti- Skid Tiles		
14.2.3.1	On Floor: Providing Anti Skid Tiles of approved quality size, shape and thickness not less than 8mm on floor over a cement mortar bed of 15mm thick in prop 1:3 (1 cement: 3 coarse sand) approved make fix with Fix-a_Tile/ White Cement complete at all level as specified in the technical specification and as directed by the Engineer-in-Charge Vitrified: Executive Range- 2 (Size 600mm x 600mm and above)	200.00	sqm

Sl. No.	Description of Items	Qnty.	Unit
14.2.3.2	On Skirting: Providing Anti Skid Tiles of approved quality size, shape and thickness not less than 8mm on floor over a cement mortar bed of 15mm thick in prop 1:3 (1 cement: 3 coarse sand) approved make fix with Fix-a_Tile/ White Cement complete at all level as specified in the technical specification and as directed by the Engineer-in-Charge Vitrified: Executive Range- 2 (Size 600mm x 600mm and above)	50.00	sqm
14.2.4	Granite Flooring		
14.2.4.1	Providing Polished Granite Tiles of approved quality, size shape and thickness not less than 18mm on floors, skirtings, risers and treads of steps over 18mm thick base of cement mortar in prop 1:3 (1 cement: 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-a-Tile/ White Cement Slurry mixed with approved pigment to match the shade of tiles complete at all levels as specified in teh technical specification and as directed by the Engineer-in-Charge		
a)	With Fix-a-Tile	250.00	sqm
b)	With White Cement	250.00	sqm
14.2.5	Metallic Hardner/ Ironite Flooring		
14.2.5.1	Providing & laying 65mm thick CC Floor with metallic concrete hardner topping under layer of 50mm thick cement concrete 1:2:4 (1 Cement: Coarse Sand: 4 Coarse Aggregate of 20mm & down) and top layer of 15mm thick of metallic cement hardner consisting of mix 1:2 (1 cement hardner mix: 2 stone aggregate 6mm and down) by volume with which metallic hardening compound of approved quality is mixed in the ratio of 4:1 (4 parts of cement: 1 part of metallic floor hardening compound of approved quality by weight) including finishing with curing complete as directed	400.00	sqm
14.2.6	Acid/ Alkali Resistant Tiles		
14.2.6.1	Providing and fixing 10mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resistant mortar bedding and joints filled with acid and/or alkali resistant cement as per IS: 4457, complete as per the direction of the Engineer-in-Charge		
a)	In flooring on a bed of 10mm thick mortar 1:4 (1 acid proof cement: 4 coarse sand) Acid and Alkali Resistant Tiles	300.00	sqm
b)	In dado/ Skirting on 12mm thick mortar 1:4 (1 acid proof cement: 4 coarse sand) Acid and Alkali Resistant Tiles	300.00	sqm
14.2.7	Epoxy Flooring		
14.2.7.1	Providing and applying normal setting, self levelling epoxy modified cementitious floor topping Sikafloor 81 EpoCem of Sika (India) Ltd. or equivalent using trowel followed by applying self smoothing epoxy floor coating Sikafloor 261(S) of Sika (India) Ltd./ Dr. Sealkit EPU Floor Self L (Asian Chemicals)/ MASTERTOP 542 ECC of BASF or equivalent using serrated trowel and rolled with a spiked nylon roller after proper surface preparation and application of a priming coat of Sikafloor 80 Primer or equivalent as specified and directed by the Engineer-in-Charge	1250.00	sqm

Sl. No.	Description of Items	Qnty.	Unit
14.3	Door, Windows & Ventilator		
14.3.1	Aluminium Doors		
14.3.1.1	Providing, fitting and fixing anodised aluminium framed glazed doors with anodised aluminium frame made of 100mm x 46mm x 2.5mm section of approved brand with door style of size 88mm x 45mm x 2.5mm, top rails 50mm x 45mm x 2mm, lock rails 100mm x 45mm x 2mm and bottom rails 100mm x 45mm x 2.5mm fitted with glazing clip, special type rubber gasket complete including hydraulic floor spring, pivot, tower bolt in each leaf, aluminium door handle, lock angles, cleat, etc. complete as specified and directed by the Engineer-in-Charge at all levels including cost of Glass & Glazing		
a)	6mm Clear Glass	50.00	sqm
b)	5mm Frosted Glass	50.00	sqm
14.3.1.2	Providing and fixing anodised aluminium frame double leaf doors of approved brand with styles size 45mm x 48mm x 3.2mm, top rails 50mm x 45mm x 2.5mm, lock rails 48mm x 45mm x 2.5mm, bottom rails 100mm x 45mm x 2.5mm fitted with tapper clips of size 20mm x 15mm x 1.2mm complete with automatic floor mounted door closure, butterfly type handles, special cylindrical lock, concealed type aluminium tower bolt, neoprene dryset rubber gasket, door felt gasket, etc. complete in all respect as directed by the Engineer-in-Charge at all levels including cost of Glass & Glazing		
a)	Double Leaf Doors		
i.	5mm thick plain forsted glass	100.00	sqm
ii.	6mm thick clear glass	100.00	sqm
14.3.1.3	Providing and fixing anodised aluminium framed single leaf door of approved brand with styles 45mm x 48mm x 3.2mm, top rails 50mm x 45mm x 2.5mm, lock rails 48mm x 45mm x 2.5mm, bottom rails 100mm x 45mm x 2.5mm fitted with tapper clips of size 20mm x 15mm x 1.2mm complete with automatic hydraulic mounted door closure, butterfly type handles, special cylindrical locks, concealed type tower bolt, neoprene dryset, rubber gasket, etc. complete as directed by the Engineer-in-Charge as all levels including cots of Glass & Glazing		
a)	6mm clear glass	100.00	sqm
b)	5mm plain frosted glass	100.00	sqm
14.3.2	Aluminium Windows & Ventilators		
14.3.2.1	Providing, fitting and fixing anodised aluminium windows and ventilators of standard sections of approved brand without horizontal glazing bars joints mitred and welded (manufactured to relevant IS specifications) fitted with 8mm x 3.15mm lugs 100mm long embedded in CC Blocks 150mm x 100mm x 100mm in 1:3:6 mix including providing and fixing handles, friction stays, joining cleat, bolting device, locking arrangement, spring catch as required complete as specified and directed for all levels including cost of Glass & Glazing		
a)	Side Hung and Top Hung Windows and Ventilators		
i.	6mm clear glass	800.00	sqm

Sl. No.	Description of Items	Qnty.	Unit
ii.	5mm frostad glass	30.00	sqm
b)	Fixed windows and ventilators		
i.	6mm clear glass	35.00	sqm
ii.	5mm frosted Glass	25.00	sqm
14.3.3	Steel Doors		
14.3.3.1	Providing and fixing 1mm thick MS Sheet door with frame of 40x40x6mm angle iron and 3mm MS Gusset Plates at the junctions and corners, all necessary fittings complete including applying a priming coat of approved steel primer		
a)	Using MS Angles for 40x40x6mm for diagonal bracings	10.00	sqm
14.3.4	PVC, FRP Doors & Door Frames		
14.3.4.1	Providing, fitting and fixing Syntex PVC Door frame made out of extruded PVC section in an overall size of 50mm x 60mm having multi chamber cross section with maximum wall thickness of mm, +0.3mm with special polymeric reinforcement having an overall size of 30mm x 25mm width, 150mm length at hardware location. The corner joints shall be either mitre cut and welded or joined by means on concealed cleats with necessary screws fittings	20.00	rm
14.3.4.2	FRP Frame: Providing & Fixing of factory made FRP Door Frame having three legged of cross section 90mm x 45mm having single rebet of 32mm x 15mm to receive shutter of 30mm thickness. The laminate door frame moulded with fire retardant grade unsaturated polyster resin and chopped mat. Door Frame Laminate and shall be filled with suitable wooden block in all the three legs the frame shall be coverde with covered glass from all sides. MS Stay shall be provided at the bottom to steady the frame	40.00	rm
14.3.4.3	Providing, fitting and fixing PVC Door Shutters of 37mm (Single Panel Seamless Finish) of Syntex make, at all levels made o extruded sections in the configuration of "A". The overall dimension is 37mm x 90mm, with usual provess variation having a wall thickness of 2mm with a variation of +0.03mm provided with all plastic reinforcement to avoid rusting. The shutter frame is mitred and joined at the corners by means of stainless steel screws. The corners of the frame are being reinforced by polymeric reinforcement to the size 125mm x 250mm and the lock rail is reinforced by 45 x 18 x 255 size reinforcement	20.00	sqm
14.3.4.4	FRP Flush Door: Supplying & fixing of factory made 30mm thick FRP Panelled Door shutter of required colour made with fire retardant grade unsaturated polyster resin, moulded to 3mm thick FRP laminate for forming hollow rails and styles, with wooden frame & suitable blocks of seasoned wood inside at required places for fixing, cast monolithically with 5mm thick FRP laminates for panel and conforming to IS: 14856- 2000 including fixing to frames complete as per the direction of the Engineer-in-Charge	40.00	sqm
14.3.5	Door & Window Fittings		
14.3.5.1	Providing and fixing mild steel round holding down bolts with nuts and washer plates complete	100.00	kg

Sl. No.	Description of Items	Qnty.	Unit
14.3.5.2	Providing and fixing bolts including nuts & washers complete	200.00	kg
14.3.5.3	Providing and Fixing MS Rivets of sizes in position	200.00	kg
14.3.6	Electro Coloured Iron Fittings Supplying, itting, fixing electro coloured iron fittings of approved make, reasonably smooth, free from sharp edges and corners, flaws and other defects and with counter sunk holes including necessary screws etc. complete		
14.3.6.1	Sliding Door Bolts		
a)	300mm x 16mm	30.00	each
b)	250mm x 16mm	20.00	each
14.3.6.2	Tower Bolts		
a)	300mm x 10mm	15.00	each
b)	250mm x 10mm	10.00	each
14.3.6.3	MS Door handles		
a)	100mm	10.00	each
b)	150mm	10.00	each
14.3.6.4	MS Butt Hinge Heavy Type		
a)	50mm x 40mm x 2.5mm	20.00	Pair
b)	75mm x 60mm x 3.15mm	20.00	Pair
14.3.6.5	MS Double Acting Spring Hinge		
a)	125mm	10.00	Pair
b)	150mm	10.00	Pair
14.3.6.6	Mortice Lock Vertical Type Aldrop within Built Lock- 6 Lever	50.00	Set
14.3.6.7	Door Closure & Floor Spring Providing, fitting and fixing Door Closer of various type UL listed and fire rated good quality depending on the door specification and as directed by the Engineer-in-Charge		
a)	Heavy Duty Door Closer (Size 180mm x 65mm x 64mm)	20.00	each
b)	Concealed Door Closer (230mm x 76.5mm x 30.5mm)	20.00	each

Sl. No.	Description of Items	Qnty.	Unit
14.3.6.8	Providing, fitting and fixing Floor Spring of various weight & type UL listed and fire rated good quality depending on the floor specification and as directed by the Engineer-in-Charge		
a)	Heavy Duty Floor Spring D100 (Size 274mm x 97mm x 40mm)	10.00	each
b)	Fire rated Floor Spring B603/ B604 (Size 307mm x 109mm x 40mm/ 307mm x 109mm x 40mm)	20.00	each
14.3.7	Brass Fittings Supplying, liting, fixing brass iron fittings of approved make, reasonably smooth, free from sharp edges and corners, flaws and other defects and with counter sunk holes including necessary screws etc. complete		
14.3.7.1	Sliding Door Bolts		
a)	300mm x 16mm	30.00	each
b)	250mm x 16mm	20.00	each
14.3.7.2	Tower Bolts		
a)	300mm x 10mm	15.00	each
b)	250mm x 10mm	10.00	each
14.3.7.3	Door Handles		
a)	100mm	10.00	each
b)	150mm	10.00	each
14.3.7.4	Butt Hinge		
a)	125mm x 50mm x 4mm	20.00	Pair
b)	100mm x 50mm x 4mm	20.00	Pair
14.3.7.5	Spring Hinge		
a)	125mm	10.00	Pair
b)	150mm	10.00	Pair
14.3.7.6	Morticed Lock Vertical Type 75mm	30.00	each

Sl. No.	Description of Items	Qnty.	Unit
14.3.8	Rolling Shutter Supplying and fixing rolling shutters of approved make, made of required size MS Laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shafts with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454- Part 1 and MS Top Cover of required thickness for rolling shutters		
14.3.8.1	80 x 1.25mm MS Laths with 1.25mm thick top cover	100.00	sqm
14.3.8.2	Providing & Fixing Ball Bearing for Rolling Shutter	20.00	each
14.3.8.3	Extra for providing mechanical device chain and crank operation for operating rolling shutters Exceeding 10 Sqm in area	80.00	sqm
14.4	Painting Works		
14.4.1	Construction of chamber for 100mm sluices valve: Providing two coats of JK wall Putty (White Cement based putty for Concrete/ Mortar walls and ceiling both internal and external) after removing all loosely adhering material from the wall surface with the help of emery stone, putty blade or wire brush and moistening the wall with sufficient quantity of clean water as specified and directed by the Engineer-in-Charge (total thickness of two coats is maximum 1.5mm)	16500.00	sqm
14.4.2	Exterior Painting		
14.4.2.1	Finishing walls with water proofing Cement Paint of Required Shade: (two or more coats applied @ 3.84 kg/10 sqm)	3600.00	sqm
14.4.2.2	Finishing Walls with textured exterior paint of required shade: (two or more coats applied @ 3.28 ltr/10 sqm) over & including priming coat of exterior primer applier @ 2.2kg/10 sqm	2500.00	sqm
14.2.2.3	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade: (two or more coats applied @ 1.43 ltr/ 10 sqm over & including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	1600.00	sqm
14.4.3	Interior Painting		
14.4.3.1	Finishing with deluxe Multi Surface Paint System for interiors and exteriors using Primer as per Manufacturers Specifications and as directed by the Engineer-in-Charge		
a)	Two or more coats applied on walls @ 1.25 litres/ 10 sqm over and inclusing one coat of special primer applied @ 0.75 litre/ 10 sqm	4000.00	sqm
b)	Finishing with Epoxy Paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation on surface, etc. complete as per specification and as directed by the Engineer-in-Charge: On Concrete Works	5000.00	sqm

Sl. No.	Description of Items	Qnty.	Unit
14.4.4	Painting of Steel Works		
14.4.4.1	Finishing with deluxe Multi Surface Paint System for interiors and exteriors using Primer as per Manufacturers Specifications and as directed by the Engineer-in-Charge		
a)	Painting Steel Work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 litre/10 sqm over an under coat of primer applie @ 0.80 liter/ 10 sqm of approved brand and manufacturer	200.00	sqm
b)	Finishing with Epoxy Paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation on surface, etc. complete as per specification and as directed by the Engineer-in-Charge: On Steel Works	200.00	sqm
14.4.4.2	Painting (two or more coats) on rain water, soil waste and vent pipes and fittings with synthetic enamel paint of approved brand and manufacturer and required colour over a priming coat of approved steel primer on new work		
a)	100mm Diameter Pipes	100.00	rm
b)	150mm Diameter Pipes	200.00	rm
14.5	Spandrel Glass Panelling		
14.5.1	Providing, fabricating and supplying shadow box of required size and shape, for fixing in the spandrel portion of the structural glazing, in linear as well as curvilinear portions of the building by providing s emi-rigid, inorganic, non-combustible fibre glass wool insulation 50mm thick, conforming to IS: 8183 and BS: 3958 Part 5. The insulation layer shall have facing (factory bonded on surface # 1 of the fibre glass insulation layer), of black non-woven fibre glass tissue of nominal thickness 0.5mm and nominal mass not less than 60g/m/sqm, made of randomly oriented glass fibres distributed in a binder by a wet-lay process including 1.5mm thick solid aluminium sheet backing using 6mm thick cement board including SS rivets, nuts, bolts, washers, etc. complete.	1500.00	sqm
14.5.2	Providing and supplying Spandrel Glass panels comprising of 6mm thick heat strengthened monolithic float glass of approved colour and shade with reflective soft coating on surface# 2 of approved colour and shade so as to match the colour and shade so as to match the colour and shade of the IGUs in the vision panels etc. all complete for the required performances as specified, as per the Architectural Drawings, as per the approved shop drawings, as specified, and as directed by the Engineer-in-Charge	1500.00	sqm
14.6	False Ceiling & Partition Works		

Sl. No.	Description of Items	Qnty.	Unit
14.6.1	Ceiling with Exposed Metal (GI) Frame Work with E-Grid-2430: Providing & Fixing in position Suspended false Ceiling using E- Grid (Exposed Ceiling Suspension 2430 System) of grid size 600mm x 600mm/ 1200mm x 600mm with main runner 38mm x 24mm, Cross Tee 29mm x 24mm & wall angle 24mm x 24mm. Using 4mm/ 6mm thick High pressure Stam Cured Non Asbestos Fibre cement Board as per IS: 14862, to be placed in a grid of GI System duly suspended with 4mm/ 6mm dia GI/ MS bar hanger fixed with steel dash fasteners or iron purlin from the roof with adjustment clip providing positions for light fixtures, air conditioning diffusers and ducts, sprinklers, smoke detectors, etc. The main runners to be secured to structural soffit by hanger @ 1220mm maximum c/c. The last hanger at the end of each main runner should be placed at more than 450mm from the adjacent wall. Flush fitting 1220mm Cross Tee to be interlocked between main runners @ 610mm c/c so as to form 600mm x 600mm/ 1200mm x 600mm grid all complete as per the drawings/ specification and as directed by the Engineer-in-Charge		
14.6.1.1	Standard Ceiling as directed by the Engineer-in-Charge		
a)	Using 6mm thick FC Board	500.00	sqm
14.6.1.2	Designer Ceiling as directed by the Engineer-in-Charge		
a)	Using 6mm thick FC Board	1000.00	sqm
14.6.2	Pre- Laminated Particle Board		
14.6.2.1	Providing, fitting and fixing in position 52mm thick double skin partition with well seasoned Sal, Bonsum/ Sundi/ Hollock frame in size 75mm x 38mm and internal frame of 50mm x 38mm and fixing on both sides 8mm thick flat pressed melamine faced pre- laminated baggage board medium density fibre boards (MDF) bonded with phenol formaldehyde synthetic resin of approved shade as specified and directed at all levels. With bajaj- exterior grade (one side decorative) 8 mm thick	500.00	sqm
14.7	Water Proof Coatings		
14.7.1	Applying one coat of epoxy coating followed by two coats of Polyurethane Waterproofing coating at an interval of 12 hours each for waterproofing as specified & directed by the Engineer-in-Charge	1500.00	sqm
14.7.2	Applying 2 coats of 1mm thick acrylic polymer modified cementitious waterproofing coating of approved brand for waterproofing of structures structures as specified after proper surface preparation and soaking the surface with water prior to application complete in all respect as per technical specification and as directed by the Engineer-in-Charge	1500.00	sqm
15	Repairing of Existing Damaged Concrete		
15.1	Installation of injection system for epoxy grout/ non- shrink grout: Installation of non-returnable Packers fixed at required interval including drilling of holes upto a depth of approx. 1/3rd depth of the concrete thickness using a heavy duty drill machine, cleaning of holes, fixing of packers with structural mortar or epoxy mortar, etc. complete in all respect including all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	5500.00	Nos

Sl. No.	Description of Items	Qnty.	Unit
15.2	Cutting both sides of construction joints in V Groove of size as directed by the Engineer-in-Charge along the construction lift joints for application of high grade dual shrinkage compensated epoxy mortar complete in all respect including labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	1800.00	rm
15.3	Placing of high grade dual shrinkage compensated epoxy repair mortar for repair of designated locations as directed by the Engineer-in-Charge with high flow, single component, dual shrinkage compensated, cementious micor concrete that acheives a comprehensive strength of minimum 60 MPa in 3 days and 70MPa in 28 days, complete in all respect with all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	1200.00	kg
15.4	Application of Epoxy Grout: Application of low viscous, high swelling, thermosetting epoxy grout with hardner solution through already fixed non-returnable packers along the cracks/ construction joints using medium to high pressure special injection pumps. The mixing should be done as per the manufacturer's specification and using specialized applicator. The amount of hardner per litre depends on the required pot life at present ambient temperature, the epoxy hardner shall be mixed until the colour gets uniform and application shall be carried out within the pot life. Complete in all respect with all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	1300.00	kg
15.5	Restrengthening Works		
15.5.1	Restrengthening of RCC Members by the following processes as specified and directed by the Engineer-in-Charge complete at all levels		
15.5.1.1	Doing patch work in depression of concrete surface wherever necessary by laying epoxy putty, Concresive 2200 of BASF India Ltd. or equivalent as specified & directed by the Engineer-in-Charge complete after proper surface preparation and proper scrapping of concrete protrusion	1000.00	sqm
15.5.2	Application of MBRACE Fibre restrengthening System of BASF India Ltd. or equivalent including laminate and sheet products for increasing the strength of concrete structures.		
15.5.2.1	In Columns: Parchange supply and application of MBRACE CF 230- Unidirectional Carbon Fibre reinforcement System of BASF India Ltd. or equivalent having 400 gm/sqm weight and having modulus of elasticity of 240 kN/mm2 at the entire length of the beam with one layer after proper application of Concresive 2200 at the entire beam area at a thickness of 2mm, which will be followed by the application of MBRACE saturant at the green condition and after proper wrapping the second layer of MBRACE saturant to be applied. Sand to be broadcasted over the MBRACE saturant layer in green condition for application of ant top screed of plastering	400.00	sqm
15.5.2.2	In Slabs & Beams: Parchance supply and application of ready to use Carbon laminates (Fibre Reinforced Polymer) for the reinforcement of concrete elements with MBRACE FRP Laminates of 165/2500, 50mm wide & 1.4mm thick system or equivalent at the bottom portion of the beam, after application of MBRACE Laminate Adhesive or equivalent, which is having minimum 2.5 MPa adhesion strength	500.00	rm
15.5.3	Strengthening with Glass Fibre	1000.00	sqm

Sl. No.	Description of Items	Qnty.	Unit
15.6	Application of Micro- Concrete for Retrofitting / Restrengthening		
15.6.1	Chipping and breaking/ cutting of loose concrete, mortars, etc. using Electrical Chipping Hammers to the satisfaction of the Engineer-in-Charge for successful execution of the subsequent rehabilitation works at all heights with all leads, lifts, etc. complete with all tools and machineries required for the job, operator, applicator, labour, scaffolding for staging and supervision, etc.	500.00	sqm
15.6.2	Providing and applying two coats of Nitozinc Primer a tow component epoxy zinc rich primer/ Sika Top Armatec- 108 or equivalent product on the properly cleaned and prepared steel bars after the required chipping and cleaning of the concrete surface as per the manufacturer's specifications	500.00	sqm
15.6.3	Before laying of the Micro Concrete, the substrate shall be coated with a bonding agent, Nitobond EP Std./ Sikadur- 32 LP or equivalent product and the micro concrete shall be poured within 6 hrs/ 4hrs or as applicable of the application of the Bonding Agent	500.00	sqm
15.6.4	Providing and fixing shear connectors of 10mm dia at 400 c/c HYSD Steel with two components Styrene & cement free, epoxy acrylate fixing and anchoring compound supplied in self mixing Cylinder-in-Cartridge from that avoids site mixing using standard sealant applicator gun after drilling holes of 10mm diameter to a minimum depth of 90-100mm at required locations, inclusive of all materials, manpower. (Steel to be paid extra) (HILTI/ Fischer or equivalent)	2500.00	Nos
15.6.5	Providing and placing free flow micro concrete Renderoc RG/ Sika Micro- Concrete-2 or equivalent product of after fixing slurry tight shuttering. The micro concrete should be mixed mechanically with maintaining water, power ration of 0.16 strictly in accordance with the manufacturer's instructions and as per the direction of the Engineer-in-Charge. The micro concrete should develop a compressive strength of 10 N/mm2 within 1 day, 40 N/mm2 within 7 days and 50 N/mm2 within 28 days. The cost is inclusive of materials, transportations, labour, taxes, etc. all complete	100.00	cum
15.6.6	Plyboard Shuttering Providing formwork of 12mm thick Plywood Board so as to give a rough finish including centering, shuttering, strutting and propping, etc. height of propping and centering below supporting floor to ceiling not exceeding 4.0m and removal of the same for in situ reinforced concrete and plain concrete work in:		
15.6.6.1	Columns, Pillars, Posts & Strut of square/ rectangular/ polygonal in plan or any shape like TEE/ L etc. having plane vertical face	100.00	sqm
15.6.6.2	Flat Surfaces such as soffits of suspended floors, roofs, landings, cantilever slabs, chajjas, Balconies and the like:		
a)	Floors, etc. upto 200mm in thickness	300.00	sqm
b)	Floors, etc. above 200mm in thickness	200.00	sqm
16	Water Supply, Sewage and Sanitation		
16.1	**Sanitary Works**		

Sl. No.	Description of Items	Qnty.	Unit
16.1.1	Providing, fitting & fixing Vitreous China Dual Flush/ Floor Mounted Coupled/ Extended Water Closet (European type WC Pan 400mm high) with seat & lead, Flushing Cistern, CP Brass Hinges and rubber buffers, CI/ MS Brackets, 40mm dia flush band with fittings including painting of fittings and brackets, if required Hindware make White One Piece Water Closet		
16.1.1.1	Altor (Cat. No. 92052) (Inclusive of Seat Cover and fittings)	2.00	each
16.1.1.2	Coral (Cat. No. 92008) (Inclusive of Seat Cover and fittings)	2.00	each
16.1.1.3	Elisa (Cat. No. 92045)/ Rubbic (Cat. No. 92053) (Inclusive of seat cover and fittings)	2.00	each
16.1.1.4	Inox (Cat. No. 92043)/ Inox-100 (Cat. No. 92050) (Inclusive of seat cover & fittings)	2.00	each
16.1.2	Providing, fitting and fixing vitreous flat back type lipped front urinal basin of automatic flushing cistern with standard flush pipe and CP brass spreader and brass unions, etc. complete including painting of fittings and brackets, cutting and making good the walls & floors whereever required Hindware make White		
16.1.2.1	Aquafree Urinal (Cat. No. 60017)	4.00	each
16.1.2.2	Urinal Omega E-Sense (Cat. No. 96006)	4.00	each
16.1.3	Supplying, fitting and fixing Vitreous China Division Plate including fitting and fixing complete as directed and specified		
16.1.3.1	Hindware make White New Division Plate (Cat. No. 61005)	10.00	each
16.1.4	Providing Vitreous China wash basin with CI/ MS brackets, CP Brass Chain with Plug, PVC waste Pipe including painting of fittings and brackets, cutting and making good the walls whereever required Table Top Basin Jaquar make		
16.1.4.1	Kubix (Cat. No. KUB-WHT-0552)	2.00	each
16.1.4.2	JDBC (Cat. No. JDS-WHT-0550)	2.00	each
16.1.4.3	JDBC (Cat. No. JDS-WHT-0547)	2.00	each
16.1.5	Providing, fitting & fixing stainless steel kitchen sink of Parryware make with CI/ MS Brakets, CP Brass Chain with Rubber Plug, PVC Waste Pipe, etc. complete including painting the fittings, cutting & making good the walls wherever required		
16.1.5.1	Parryware makeSingle Bowl with veg bowl & Drain Board (400 x 200) Flat Edge- Glossy (Cat. No. C8545)	2.00	each

Sl. No.	Description of Items	Qnty.	Unit
16.1.6	Providing, fitting and fixing Decorative Mirror complete as directed and specified Parryware make Size 600mm x 450mm	10.00	each
16.1.7	Providing, fitting and fixing Glass Shelf complete as directed and specified Glass shelf with CP Guard Rail Jaquar make Kubix 600mm long (Cat. No. AKB- 35771)	10.00	each
16.1.8	Providing, fitting and fixing Glass Shelf complete as directed and specified Corner Glass Shelf with Brackets of Jaquar make Jaquar make Continental (Cat. No. ACN- 1173)	4.00	each
16.1.9	Providing, fitting and fixing CP Soap Tray/ Soap Dish complete as directed and specified Jaquar make		
16.1.9.1	Queen's (Cat. No. AQN- 7731)	3.00	each
16.1.9.2	Kubix (Cat. No. AKB- 35731)	3.00	each
16.1.10	Providing, fitting and fixing Liquid Soap Dispenser and liquid soap container complete as directed and specified Jaquar make		
16.1.10.1	Kubix make Glass Bottle (Cat. No. AKB- 35735)	8.00	each
16.1.11	Providing, fitting and fixing CP towel rail complete as directed and specified Jaquar make		
16.1.11.1	Queen's (600mm long) (Cat. No. AQN- 7711)	8.00	each
16.1.11.2	Queen's (450mm long) (Cat. No. AQN- 7711A)	8.00	each
16.1.12	Providing, fitting and fixing Chrome Plated Towel Ring complete as directed and specified Jaquar make Queen's (Cat. No. AQN- 7721)	5.00	each
16.1.13	Providing, fitting and fixing Chrome Plated Toilet paper Holder complete as directed and specified Jaquar make		
16.1.13.1	Continental Toilet Paper Holder with Flap (Cat. No. CAN- 1151N)	4.00	each
16.1.13.2	Queen's Toilet Paper Holder with Flap (Cat. No. AQN- 7753)	4.00	each
16.1.14	Providing, fitting and fixing Chrome Plated Waste Coupling complete as directed and specified		
16.1.14.1	Jaquar make 32mm (HT/FT) (Cat. No. ALD-705/ 709)	15.00	each

Sl. No.	Description of Items	Qnty.	Unit
16.1.14.2	Cera make Waste Coupling (Full Thread) 40mm (Cat. No. CA 103)	15.00	each
16.1.15	Providing, fitting and fixing Chrome Plated Bottle Trap complete as directed and specified Jaquar make		
16.1.15.1	Bottle Trap (with internal partition) 32mm size with 250mm long wall connection pipe (Cat. No. ALD- 769)	15.00	each
16.1.15.2	Bottle Trap (with internal partition) 32mm size with 300mm long wall connection pipe (Cat. No. ALD- 768B)	15.00	each
16.1.16	Providing, fitting and fixing Chrome Plated Grating complete as directed and specified		
16.1.16.1	160mm Dia	15.00	each
16.1.16.2	110mm Dia	10.00	each
16.1.17	Supplying, fitting and fixing approved uPVC Pipes of different sizes, with all necessary 'R' Brand or similar approved uPVC Fittings such as bend, Tee, Elbow, reducer, nipple, plug, tee, long screw fitting, clamps, etc. complete at all levels including below GL as directed and specified		
16.1.17.1	Exposed or in Trenches Supreme/ Prince/ SFMC Brand or other equivalent approved brand (High Pressure Pipe Sch-40)		
a)	50mm dia	300.00	rm
b)	40mm dia	300.00	rm
c)	32mm dia	300.00	rm
d)	25mm dia	200.00	rm
e)	20mm dia	50.00	rm
f)	15mm dia	50.00	rm
16.1.17.2	Concealed by Chiselling or breaking brick wall/ CC wall/ RC Wall and making good to the damaged structure Supreme/ Prince/ SFMC Brand or other equivalent approved brand (High Pressure Pipe Sch-40)		
a)	25mm dia	100.00	rm
b)	20mm dia	150.00	rm
c)	15mm dia	150.00	rm

~ 252 ~

Sl. No.	Description of Items	Qnty.	Unit
16.1.18	Providing and fixing Chlorinated Polyvinyle Chloride (CPVC) Pipes, having thermal stability for hot and cold water supply including all CPVC Plain and Brass threaded fittings i/c fixing the pipe with clamps at 1.00m spacing. This includes joining of pipe. Exposed or in trenches		
16.1.18.1	50mm dia	100.00	rm
16.1.18.2	40mm dia	100.00	rm
16.1.18.3	32mm dia	100.00	rm
16.1.18.4	25mm dia	100.00	rm
16.1.19	Spupplying, fitting and fixing CP Bib Cock 15mm dia of approved brand as directed and specified Jaquar make		
16.1.19.1	Bib Cock Long Thread	8.00	each
16.1.19.2	2- Way Bib Cock	6.00	each
16.1.20	Supplying, fitting and fixing Chrome Plated (CP) Stop Cock of approved brand and size as mentioned below as directed and specified Jaquar make		
16.1.20.1	15mm dia Angular Stop Cock	10.00	each
16.1.20.2	15mm dia Angular Stop Cock with long thread	10.00	each
16.1.20.3	15mm dia Concealed Stop Cock reduced body	10.00	each
16.1.21	Supplying, fitting and fixing CP Pillar Cock of 15mm dia of approved brand as specified and directed Jaquar make		
16.1.21.1	Continental	6.00	each
16.1.21.2	Long Neck with aerator	6.00	each
16.1.22	Supplying, fitting and fixing Chrome Plated Sink Cock of approved brand as directed and specified Jaquar make		
16.1.22.1	Continental/ Clarion Sink Cock with raised J shaped swinging spout	2.00	each
16.1.23	Supplying, fitting & fixing Chrome Plated Flush Cock of approved brand as directed and specified Jaquar make Continental/ Clarion		

Sl. No.	Description of Items	Qnty.	Unit
16.1.23.1	Flush Cock with wall flange 25mm with lavel knob	10.00	each
16.1.23.2	Flush Cock with wall flange 25mm with plain knob	10.00	each
16.1.24	Supplying, fitting & fixing Chrome Plated Shower 15mm dia of approved brand as directed and specified Jaquar make		
16.1.24.1	Continental Overhead Shower (ABS Chrome Plated) with rubit cleaning system	1.00	each
16.1.24.2	Queen's Collection Overhead Rose Shower with revolving joint & 150mm long swivel shower arm	2.00	each
16.1.25	Supplying, fitting and fixing Chrome Plated Wall Mixer complete as directed Jaquar make		
16.1.25.1	Continental/ Clarion Wall Mixer 3 in 1 system with provision for both telephonic shower and overhead shower complete with 115mm long bend pipe Cat. No. 1119	2.00	each
16.1.26	Supplying, itting & fixing Push Bib Cock 15mm dia complete as specified & directed by the Engineer-in-Charge		
16.1.26.1	CPCH Heavy Type	10.00	each
16.1.27	Supplying, fitting & fixing ball valve as specified and directed		
16.1.27.1	25mm dia	5.00	each
16.1.27.2	20mm dia	5.00	each
16.1.28	Supplying, fitting and fixing Check Valve including necessary threads to pipes		
16.1.28.1	50mm dia (Heavy Type)	10.00	each
16.1.28.2	40mm dia (Heavy Type)	10.00	each
16.1.29	Supplying, fitting and fixing GI Foot Valve with strainer including cutting necessary threads to pipes		
16.1.29.1	50mm dia (Heavy Type)	5.00	each
16.1.29.2	40mm dia (Heavy Type)	5.00	each
16.1.30	Supplying & placing Plastic Cylindrical Vertical Claused Top (PCVC) Tank make over stagging with manhole cover with locking and cleaning arrangement including providing pads of size as required for inlet & outlet pipes Sintex make		
16.1.30.1	2000 ltr Capacity	1.00	each

Sl. No.	Description of Items	Qnty.	Unit
16.1.30.2	1600 ltr Capacity	1.00	each
16.1.30.3	1000 ltr Capacity	1.00	each
16.1.31	Labour of erecting and placing PCVC Tank over the staging up to a height of 5.00m complete as directed		
16.1.31.1	2000 ltr Capacity	1.00	each
16.1.31.2	1500 ltr Capacity	1.00	each
16.1.31.3	1000 ltr Capacity	1.00	each
16.1.32	Rain Water Downcomer Supplying, fitting andfixing Pipes with all necessary fittings complete as directed by the Engineer-In-Charge GI Pipe with GI Fittings TATA/ SAIL (Medium)		
16.1.32.1	100mm Diameter	100.00	rm
16.1.32.2	150mm Diameter	200.00	rm
16.1.33	Supplying, fitting & fixing PVC Pipes of 6kg/cm2 including joining, fitting & fixing with clamps, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches		
16.1.33.1	160mm dia	50.00	rm
16.1.33.2	110mm dia	75.00	rm
16.1.34	Supplying, fitting & fixing 87.5 degree PVC bend withj door including joining, fitting & fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches		
16.1.34.1	160mm dia	10.00	each
16.1.34.2	110mm dia	10.00	each
16.1.35	Supplying, fitting & fixing 45 degree PVC bend including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed & specified In exposed surfaces or in trenches		
16.1.35.1	160mm dia	10.00	each
16.1.35.2	110mm dia	10.00	each

Sl. No.	Description of Items	Qnty.	Unit
16.1.36	Supplying, fitting and fixing PVC single TEE including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches		
16.1.36.1	160mm dia	10.00	each
16.1.36.2	110mm dia	10.00	each
16.1.37	Supplying, fitting and fixing PVC single Y with door including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm dia	5.00	each
16.1.38	Supplying, fitting and fixing PVC Double Y with door including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm dia	5.00	each
16.1.39	Supplying, fitting & fixing PVC Cross T with door including joining, fitting & fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm x 110mm	10.00	each
16.1.40	Supplying, fitting & fixing PVC Coupler including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm dia	10.00	each
16.1.41	Supplying, fitting and fixing PVC reducer including joining, fitting & fixing, etc. as necessary complete at all levels includign below GL as directed and specified In exposed surfaces or in trenches 160mm x 110mm	10.00	each
16.1.42	Supplying, fitting & fixing PVC reducing Tee with door including joining, fitting and fixing, etc. in exposed surfaces or trenches as necessary complete at all levels including below GL as directed and specified 160mm x 110mm	10.00	each
16.1.42.1	Supplying, fitting and fixing PVC Socket Plug including joining, fitting & fixing, etc. in exposed surfaces or in trenches as necessary complete at all levels including below GL as directed and specified 110mm	10.00	each
16.1.43	Supplying, fitting and fixing PVC cleaning pipe including joining, fitting and fixing, etc. in exposed surface or trenches as necessary complete at all levels including below GL as directed and specified		
16.1.43.1	160mm dia	10.00	each
16.1.43.2	110mm dia	10.00	each
16.1.44	Providing, fitting & fixing PVC Cowel of ISI make complete as directed and specified		

Sl. No.	Description of Items	Qnty.	Unit
16.1.44.1	160mm dia PVC Cowel of ISI make	10.00	each
16.1.44.2	110mm dia PVC Cowel of ISI make	10.00	each
16.1.45	Providing, fitting & fixing 450mm dia 90mm thick CI man hole cover & frame of 58kg weight complete as directed and specified	5.00	each
16.1.45.1	Clearance of service septic tank and removing the night soil and debris, etc. manually from the tank/ chamber to a distant place by bailing out the deposited night soil, burning the same in near by trenches/ pits which has been dug earlier and covering the same. The service septic tank is cleaned with clear water and completed as directed by the department For 100 users	2.00	each
17	**Removal of Damaged Steel Liner from HRT**		
17.1	Removal of Steel Liners in HRT including cutting, dismantling, loading, transportation, unloading & stacking in the Umrongso Store, complete in all respect including all tools & plants, labour, equipments, etc. as per the technical specification and as directed by the Engineer-in-Charge	200.00	MT
18	**Gabions**		
18.1	Boulder laid in wire crates: Providing and laying of boulders laid in wire crates made with 4mm dia GI wire conforming to IS: 280 & IS: 4826 in 100mm x 100mm mesh (weaved diagonally) including 10% extra for laps and joints laid with stone boulders	1000.00	cum
19	**Road Works**		
19.1	Preparation and consolidation of subgrade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations, etc. and re-rolling the sub-grade and disposal of surplus earth with lead upto 50m	3000.00	sqm
19.2	Supplying and stacking at site		
19.2.1	90mm to 45mm size stone aggregate	300.00	cum
19.2.2	63mm to 45mm size stone aggregate	300.00	cum
19.2.3	53mm to 22.4mm size stone aggregate	300.00	cum
19.2.4	Stone Screening 13.2mm nominal size (Type A)	200.00	cum
19.2.5	Stone Screening 11.2mm nominal size (Type B)	200.00	cum
19.3	Laying, spreading and compacting stone aggregate of specified sizes to WBM specifications in uniform thickness, hand picking, rolling with 3 wheeled road/ vibratory roller 8 to 10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening/ binding material to fill up interstices of coarse aggregate, watering and compacing to the required density	900.00	cum

Sl. No.	Description of Items	Qnty.	Unit
19.4	Supplying, stacking and spreading 6mm thick red bajri, watering and rolling complete including preparation of the surface and rolling With Road Roller/ Hand Roller	3000.00	sqm
19.5	Surface dressing one coat on new surface with bitumen of specified grade at a rate of 1.95 kg/sqm of surface area with 1.5 cum of stone chippings 13.2mm nominal size per 100 sqm of road surface. including consolidation with road roller of 6 to 8 tonne capacity, etc. complete: Using bitumen emulsion (minimum 50% bitumen content RS grade conforming to IS: 8887)	3000.00	sqm
19.6	Surface dressing one coat on old surface with bitumen of specified grade at the rate of 1.22 kg/sqm of surface area with 1:10 cum of stone chippings 11.2 mm nominal size per 100 sqm of road surface, including consolidation with road roller of 6 to 8 tonne capacity etc. complete: Using bitumen emulsion (minimum 50% bitumen content- RS grade conforming to IS: 8887)	3000.00	sqm
19.7	Providing and laying bitumen mastic wearing course (as per specification) with industrial bitumen of grade 85/25 conforming to IS: 702, prepared by using cooker and laid to required level and slope, including providing antiskid surface with bitumen precoated fine grained hard stone chipping of approved size at the rate of 0.005 cum per 10 sqm and at approximate spacing of 10cm centre to centre in both directions, pressed into surface protruding 1mm to 4mm over mastic surface, including cleaning the surface, removal of debris, etc. all complete. (Considering bitumen using 10.2% as per MORTH Specification): 40mm thick	3000.00	sqm
19.8	Providing and applying tack coat using hot straight run bitumen of grade VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications: On bituminious surface @ 0.50 kg/sqm	3000.00	sqm
19.9	2.5cm premix carpet surfacing with 3 cum of stone chippings 11.2mm nominal size per 100 sqm and bitumen emulsion (medium setting min. 65% bitumen contents) complying with IS: 8887, using 96 kg per cum of chippings of road surface, including consolidation with road roller, etc. Complete	3000.00	sqm
19.10	Providing and laying seal coat of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 126 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface, including rolling and finishing with road roller all complete	3000.00	sqm
19.11	Concrete Pavements		
19.11.1	Cement Concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 40mm nominal size) in pavements, laid to required slope and camber in panels as required including consolidation finishing and tampering complete	600.00	cum
19.11.2	Proving & fixing in position pre-moulded joint filler in expansion joints	40000.00	per cm depth per cm width per m length
19.11.3	Providing and laying in position bitumen hot sealing compound for expansion joint etc.: Using grade "A" sealing compound	40000.00	per cm depth per cm width per m length

Sl. No.	Description of Items	Qnty.	Unit
20	**Miscelleneous Works**		
20.1	**Fencing Work**		
20.1.1	Fencing with angle iron post placed at required distance embedded in cement concrete blocks, every 15th Post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with horizontal lines and two diagonals interwoven with horizontal wires of barbed wire weighing 9.38 kg per 100m (min.), between the two posts fitted and fixed with GI staples, turn buckles, etc. complete. (Cost of Posts, struts, earth work and concrete work to be paid separately).Payment to be made per meter cost of total length of barbed wire used. Wire GI barbed wire	2000.00	m
20.1.2	Supplying at site angle iron post & strut of required size including bottom to be split and bent at right angle in opposite direction for 10cm length and drilling holes upto 10mm dia. etc. complete	5000.00	kg

J - WORKS			
Cost provisions for Rehabilitation of HM equipments of Kopili Power House(Gates) :			
	Description	Unit	Quantity
1	**Intake Trash Rack**		
1.1	Supply, fabrication and installation of 6 sets of Guide channel from El. 577.86 to El. 597.5 m made up of Stainless steel complete	LS	-
1.2	Repair and painting of 30 nos. of Trash Rack Panels of size 3.623 m x 3.908 m complete	LS	-
2	**Intake Bulkhead Gate**		
2.1	Supply, fabrication and installation of side guide, sill beam and track assembly for Intake Bulkhead gate of size 3.613 m x 4.6 m made up of Stainless steel complete	LS	-
2.1	Refurbishment of Gate Leaf of size 3.613 m x 4.6 m including, replacement of wheel bearing, Rubber Seals alongwith SS hardwares complete	LS	-
2.2	Sand/Grit Blasting and Painting of Gate assembly of size 3.613 m x 4.6 m.	LS	-
2.3	Modification of 43 t capacity Rope drum hoist including replacement of wire rope, motor, brake, bearings, LCPs, Pulleys etc. complete with approach ladder handrails etc.	LS	-
2.4	Painting of 43 t capacity Rope drum hoist and hoist bridge	LS	-
2.5	Installation of Radar Type Water level sensors	LS	-
3	**Draft Tube Gate and Pressure Release Valve**		
3.1	Supply, fabrication and installation of 4 sets of side guide, sill beam and track assembly for draft tube gate of size 6.74 m x 1.75 m made up of Stainless steel complete	LS	-
3.2	Refurbishment of Gate Leaf including, replacement of wheel bearing, Rubber Seals alongwith SS hardwares complete	LS	-
3.3	Sand/Grit Blasting and Painting of 4 set of Gate assembly of size 6.74 m x 1.75 m.	LS	-
3.4	Supply fabrication and installation of 4 sets of 20t capacity electrically operated Rope Drum Hoist for Draft Bube Gate and 4 sets of 10t capacity Electrically operated Rope Drum Hoist of pressure release valve mounted on common hoisting platform complete. Dismantling and storing of the existing Gantry crane shall also be included	LS	-
3.5	Installation of Radar Type Water level sensors	LS	-
4	**Tail Race Channel Outlet Gate**		
4.1	Supply, fabrication and installation of 2 sets side guide, sill beam and track assembly for gate size of 5.75 m x 3.5 m made up of Stainless steel complete	LS	-
4.2	Refurbishment of 2sets of Gate Leaf of 5.75 m x 3.5 m including, replacement of wheel bearing, Rubber Seals alongwith SS hardwares complete	LS	-
4.3	Sand/Grit Blasting and Painting of 2 nos. of Gates assembly of 5.75 m x 3.5 m.	LS	-
4.4	Supply fabrication and installation of 2 sets of 25 T capacity electrically operated Rope Drum Hoist mounted on steel trestle and hoist platform.	LS	-
5	Design, fabrication, supply, transportation, fabrication and erection of 2 Nos. of Hinge Type Gate of size 2.0 m x 2.0 m to be provided in Adit Plug each at Adit-II & Adit-III complete.	LS	-
6	Civil work	LS	-

J - Works			
SWITCHYARD			
	Items	Unit	Quantity
1	Debris clearance	LS	-
2	Aggregate carpeting	Cum	1000.00
3	Mass conc M 20	LS	-
4	Reinforcement	LS	-
5	Anchor Bars - 25 mm	RM	1260.00
6	Miscelleneous items	LS	-
7	Fencing	LS	-
8	Construction of wall at Switchyard corner (plaster on both sides) & Development of Tower Foundation with concrete (M15)	LS	-
9	Construction of tower Foundation of already dismantled tower (U-1&2)	LS	-

ANNEXURE - VIII(J)

Annexure-II

COST ESTIMATE OF RECONSTRUCTION, R&M OF KOPILI

ABSTRACT OF COST			
S. No.	Item Code	ITEM	Cost at January 2021 PL(In Rs Lakhs)
A		CIVIL AND HM WORKS:	
1		DIRECT CHARGES	
i		I-WORKS	
	A	Preliminary & Pre-Operative Expenses	798.17
	B	Cost of Land	0.00
	C	Civil Works	285.00
	J	Power Plant Civil Works	34426.56
	K	Buildings	248.08
	M	Plantation	80.00
	O	Miscellaneous	600.00
	P	Maintenance during Construction	349.60
	Q	Special Tools & Plants	100.00
	R	Communication	2883.66
	X	Environment and Ecology	50.00
	Y	Losses on stock	87.40
		TOTAL I-WORKS	39908.45
ii		Establishment Charges @ 8% of I-Works	3192.68
iii		Tools & Plants	
iv		Suspense	
v		Receipts and Recoveries (-)	
		TOTAL DIRECT CHARGES	43101.12
2		INDIRECT CHARGES	
i		Capitalisation of Abatement of Land revenue	0.00
ii		Audit & Accounts etc. (0.5% of I-Works)	199.54
		TOTAL INDIRECT CHARGES	199.54
		TOTAL CIVIL AND HM WORKS	**43300.67**

ANNEXURE – VIII (ज)

File No.CEA-HY-16-38/6/2020-HERM Division

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केंद्रीय विद्युत प्राधिकरण
Central Electricity Authority
जल विद्युत अभियांत्रिकी और नवीनीकरण एवं आधुनिकीकरण प्रभाग
Hydro Engineering and Renovation & Modernisation Division

13/2(NEEPCO-Kopili)2021/HE&RM/CEA/ Date 04.06.2021

Director Technical
North Eastern Electric Power Corporation Limited
Brookland Compound
Lower New colony
Shillong - 793003, Meghalaya, India

विषय/ **Subject: Detailed Project Report (DPR) for Reconstruction, Renovation & Modernisation of 200(4x50) MW Kopili Power Station Umrongso, Assam- Vetting of cost estimated for Civil & HM works by TCD Division – Reg.**

Ref : 1. M/s NEEPCO Letter No. NEEPCO/D (T)/Tech-39/2020-21/67 dated 06.10.2020
2. M/s NEEPCO Letter No. NEEPCO/GHY/D&E/ T-53/2021-22/22 dated 16.04.2021
3. TCD Division Letter No. CEA-TH-18-11(14)/1/2021-TCD Division dated 04.06.2021

महोदय/ Sir,

Reference is invited to letters cited above regarding examination of Detailed Project Report (DPR) for Renovation and Modernisation of 200 (4x50) MW Kopili Power Station, Umrongso, Assam.

The DPR was forwarded to TCD Division of CEA for examination of Civil and Hydro-Mechanical works portion of DPR along with its Cost Estimate. The same has been examined and the vetted estimated cost of Civil & HM works of the project for RM&U is Rs. 43300.67 Lacs at Jan 2021 PL.

The details of cost estimate of Civil & Hydro-Mechanical works vetted by TCD Division, CEA is attached.

Encl: As above

भवदीय

(वी सीता रामा राजू)/ V Sita Rama Raju)
निदेशक/ Director

सेवा भवन, आर.के. पुरम-1, नई दिल्ली -110066 टेलीफैक्स 011-26100497 ईमेल: cehermcea@nic.in वेबसाइट www.cea.nic.in
Sewa Bhawan, R.K. Puram-1, New Delhi-110066 Telefax:011-26100497 Email: cehermcea@nic.in website www.cea.nic.in

ANNEXURE - (IX)

भारत सरकार
GuyGovernment of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
तापीय सिविल अभिकल्प प्रभाग
Thermal Civil Design Division

विषय :- Examination of Reconstruction, R&M proposal of 200 MW Kopili Power Station, Umrongso, Assam - Reg.

संदर्भ :1. HE&RM Letter No. 13/2 (NEEPCO)/2020/ HE&RM/CEA/587 dated 26.10.2020
2. TCD Letter vide File No. CEA-TH-18-11(14) /12021-TCD Division dated 20.01.2021
3. M/s NEEPCO Letter No. NEEPCO/GHY/D&E/ T-53/2020-21/498 dated 29.01.2021
4. This Division Email dated 09.04.2021
5. M/s NEEPCO Letter No. NEEPCO/GHY/D&E/ T-53/2021-22/22 dated 16.04.2021

महोदय,

Kind reference is invited to HE&RM Division Letter under reference-1 enclosing therein M/s NEEPCO Letter No. NEEPCO/D(T)/Tech-39/2020-21/67 dated 06.10.2020 vide which DPR of Reconstruction and R&M proposal of Kopili HEP for the cost of Civil & HM works amounting to Rs. 42855.90 Lakhs was forwarded to this Division for perusal and vetting. The Cost of Civil & HM works has been examined in this Division and observations on the same were communicated to HE&RM Division vide this Division Letter dated 20.01.2021 and email dated 09.04.2021 (under references – 2 & 4) the compliances of which were provided by M/s NEEPCO vide Letter dated 29.01.2021 and 16.04.2021 (under references – 3 & 5) respectively. M/s NEEPCO vide its compliance through letter dated 16.04.2021 revised the cost estimate based on the work order of Civil works awarded by it and submitted it for an amount of Rs. 43759.90 Lakhs. This Division further examined the cost estimate of Rs. 43759.90 Lakhs and vetted it for an amount of **Rs 43300.67** lakhs. The followings has been kept in view while framing the cost estimate : -

- The Quantity of Civil and HM works (copy enclosed as Annexure-I) has been examined and found in order based on the certificate of correctness of quantities submitted by the Developer i.e. M/s NEEPCO Ltd.
- The cost of J-Power Plant Civil works is largely based on the work order awarded by M/s NEEPCO Ltd.
- The Cost of HM works, O-Miscellaneous, M-Plantation, Q-Special T&P and

X-Environment & Ecology is on Lump Basis.

- 'Assam PWD Schedule of Rates (SoR) 2013-14' has been used for Plinth area rates of K-Buildings.
- 'Assam PWD SoR 2018-19 for Roads' has been adopted for the rates of roads under subhead R-Communication.
- The Cost estimate of Rs. 43300.67 Lakhs at January 2021 PL is inclusive of GST.
- The project authority, in the final DPR, may incorporate the items of works to be covered under subhead O-Miscellaneous, M-Plantation, Q-Special T&P and X-environment and Ecology.

A copy of abstract of vetted cost of Civil & HM works of the project is enclosed as Annexure-II for favour of information and further necessary action.

संलग्न - उपरोक्त अनुसार

Signature Not Verified
Digitally signed by BALESHWAR THAKUR
Date: 2021.06.03 18:39:22 IST

(बालेश्वर ठाकुर)

निदेशक

निदेशक, (एच ई आर एम), के. वि. प्रा., दिनांक 03.06.2021

Copy for information to:

Member (Thermal), Central Electricity Authority, New Delhi

ANNEXURE - X

File No.CEA-HY-16-38/6/2020-HERM Division

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केंद्रीय विद्युत प्राधिकरण
Central Electricity Authority
जल विद्युत परियोजनाएं और नवीनीकरण एवं आधुनिकीकरण प्रभाग

No. 13/2 (NEEPCO-Kopili)/2021/HE&RM/CEA/ Date: 28.06.2022

Director (Technical)
North Eastern Electric Power Corporation Ltd.,
Brookland Compound,
Lower New Colony,
Shillong-793 003, Meghalaya, India.

विषय/ Sub.: Detail Project Report for Reconstruction, Renovation & Modernization of 200 MW (4x50 MW) Kopili Power Station, Umrongso, Assam - Tariff and IDC Calculation - Regarding

संदर्भ/ Ref: F&CA letter CEA-EC-11-15(11)/2/2020-FCA Division dated 17.06.2022

महोदय/ Sir,

Reference is invited to our earlier letter No. 13/2(NEEPCO Kopili)/2021/HE&RM/CEA/261 dated 21.06.2021 vide which DPR for Reconstruction, Renovation & Modernization of 200 MW (4x50 MW) Kopili Power Station, Umrongso, Assam was concurred with capital cost amounting to Rs. 824.12 Crore (excluding IDC).

In continuation to our above letter, F&CA Division, CEA has examined the IDC and Tariff calculation submitted by NEEPCO vide their letter CA/56(E)/392 dated 13.10.2021 and conveyed vide its letter under reference above (a copy of the letter enclosed herewith) that the Capital Cost of Reconstruction, Renovation & Modernization (RR&M) of the project is Rs. 678.09 Crore (including IDC of Rs. 53.97 Crore). In this regard, it may be noted that no Financing Charge has been considered and that the rate of interest of 7.50% on loan has been considered for IDC. Also, the Debt/Equity ratio of 70:30 has been envisaged for financing the RR&M proposal. Further, based on CERC Tariff Regulations 2019, the 1st year and levelised tariff is estimated at Rs. 2.37/ unit and Rs. 2.39/unit respectively.

भवदीय/Yours faithfully,

के. एस. बाबू
28/06/2022
(के. एस. बाबू/ K. S. Babu)
निदेशक/ Director

संलग्न/ Encl.: as above

Forwarded to:
GM(E(M)), Pio D(C).
20/6/2022
Cc: CGM(Commercial).

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
आर्थिक एवं वाणिज्यिक मूल्यांकन प्रभाग
Financial & Commercial Appraisal Division
*****

विषय: कोपिली पावर स्टेशन (4x50 मेगावाट) उमरोंगसो, आसाम के पुनर्निर्माण, नवीनीकरण और आधुनिकीकरण के लिए विस्तृत परियोजना रिपोर्ट: टैरिफ और आईडीसी गणना - के संदर्भ में ।
(Detailed Project Report for Reconstruction, Renovation and Modernization (RR&M) of Kopili Power Station (4x50 MW) Umrongso, Assam: Tariff and IDC Calculation – reg.)

संदर्भ: एच.ई.आर.एम. प्रभाग ईमेल दिनांक 13.10.2021

उपरोक्त विषय पर इस प्रभाग से संबधित पत्र सामग्री संलग्न है ।

यह सदस्य (आ.एवं वा.) द्वारा अनुमोदित है।

अनुलग्नक: यथोपरि

सुभ्रो पॉल
निदेशक

मुख्य अभियन्ता (HERM प्रभाग), के.वि.प्रा.

Annex

विषय: कोपिली पावर स्टेशन (4x50 मेगावाट) उमरोंगसो, आसाम के पुनर्निर्माण, नवीनीकरण और आधुनिकीकरण के लिए विस्तृत परियोजना रिपोर्ट: टैरिफ और आईडीसी गणना - के संदर्भ में ।

(Detailed Project Report for Reconstruction, Renovation and Modernization (RR&M) of Kopili Power Station (4x50 MW) Umrongso, Assam: Tariff and IDC Calculation – reg.)

Reference is invited to M/s NEEPCO letter dated 13.10.2021 on the subject cited above.

2. F&CA Division had examined the proposal and observations were sent to HER&M Division vide letter dated 27.10.2021. One of the key observations of this Division was that M/s NEEPCO's phasing of expenditure was based on actual expenditure till Dec 2020, however, TCD and HPA division had approved the Hard cost by considering the actual expenditure till October 2020 only.

3. HERM Division has provided point-wise reply to the observations vide letter no CEA-HY-16-38/6/2020-HERM Division dated 30.11.2021 along with NEEPCO's letter No: CA/56(B)/466 dated 29.11.2021. In its reply, the revised phasing of expenditure for Civil and E&M cost as vetted by TCD Division and HPA division at Jan 2021 PL has been provided.

4. M/s NEEPCO has furnished Capital Cost of RR&M as Rs 878.09 Cr including IDC of Rs 53.97 Cr. The rate of interest of 7.50% on loan has been considered for IDC. No financing charge has been considered. The debt/equity ratio of 70:30 has been envisaged for financing the RR&M proposal.

5. In respect of tariff computation, the RoE and Depreciation on old plant & Equipment has been considered, since its useful life has not been completed. M/s NEEPCO has submitted gross residual value of old assets (U # 1, 2, 3 & 4) and Equity on old assets as Rs 167.68 Cr and Rs 83.84 Cr respectively. However, CEA has calculated equity on old assets in line with Regulation 27(4) of CERC tariff regulations, 2019 as Rs 32.43 Cr.

6. Based on CERC Tariff regulations, 2019 the first year tariff and levelised tariff estimated by us is 2.37 Rs/kWh and 2.39 Rs/kWh respectively.

Since after RR&M works, generating unit would have normative life of 40 years therefore, the levelised tariff of 2.39 Rs/kWh appears reasonable. However, tariff mentioned above is only indicative tariff and actual tariff would be determined by CERC after completion of RR&M works.

7. In view of the above, RR&M proposal for Kopili HEP may be recommended.

*****

ANNEXURE - XI

CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No.189/MP/2022

Coram:

Shri I.S. Jha, Member

Shri Arun Goyal, Member

Shri Pravas Kumar Singh, Member

Date of Order: 25th October 2023

In the matter of:

Petition under Sections 62 and 79 (1) of the Electricity Act, 2003 read with related provisions of the Chapter-5 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Regulation 27(1) of the Central Electricity Regulatory Commission (Terms and Condition of Tariff) Regulations, 2019 for approval of proposal for Reconstruction, Renovation & Modernization for life extension beyond the normal useful life in respect of Kopili Power Station (4x50 MW = 200 MW) of North Eastern Electric Power Corporation Limited (NEEPCO), Shillong.

And

In the matter of

North Eastern Electric Power Corporation Limited,

Corporate Office: Brookland Compound,

Lower New Colony, Shillong 793 003, Meghalaya. .....Petitioner

Vs

1. Chairman

   Assam Power Distribution Company Limited,

"BijuleeBhawan", Paltanbazar,
Guwahati 781 001, Assam.

2. Chairman & Managing Director,
Meghalaya Power Distribution Corporation Limited, Lumjinshai, Short Round Road,
Shillong -799001, Meghalaya.

3. Deputy General Manager, Commercial & System Operation,
Tripura State Electricity Corporation Limited,
Bidyut Bhavan, North Banamalipur,
Agartala -799 001, Tripura.

4. The Engineer-in-Chief,
Power & Electricity Department,
Government of Mizoram,
New Secretariat Complex, Kawlphetha, Aizwal- 796001

5. The Managing Director,
Manipur State Power Distribution Company Limited,
3rd Floor, New Directorate Building, Near 2nd M.R Gate,
Imphal- Dimapur Road, Imphal- 795001, Manipur.

6. Chief Engineer (Power),
Department of Power, Bidyut Bhawan,
Government of Arunachal Pradesh,
Itanagar-791111, Arunachal Pradesh.

7. The Chief Engineer (Power),
Department of Power,
Government of Nagaland,

Electricity House, A G Colony.
Kohima- 797001, Nagaland.

8. Member Secretary,
North Eastern Regional Power Committee,
NERPC Complex, Dong Parmaw,
Lapalang, Shillong-793006, Meghalaya.

9. Executive Director,
North Eastern Regional Load Despatch Centre,
Dongtieh, Lower Nongrah,
Lapalang, Shillong -793006, Meghalaya. .....**Respondents**

Parties Present:

Shri Susanta Deka, NEEPCO
Shri Ripunjoy Bhuyan, NEEPCO
Ms. Elizabeth Prybot, NEEPCO
Shri S. Deka, NEEPCO
Shri R. Bhuyan, NEEPCO
Ms. Elizabeth Pyrbot, NEEPCO

ORDER

The Petitioner, North Eastern Electric Power Corporation Limited (NEEPCO) has filed the present petition seeking the following reliefs:

a) *Approve the Detailed Project Report on Reconstruction; Renovation & Modernization for Life Extension of the 4x50 MW Kopili Power Station with an* ***estimated project cost of Rs 1045.75 crore*** *and which include Hard Cost of Rs.824.12 Crore and Rs.53.95 crore as IDC and residual value of the old asset as Rs.167.68 Crore.*

b) *Adjust the filing fees deposited against Petition no 717/MP/2020 vide UTR no SBINR12020110400073130 dated 04.11.2020 for an amount of Rs.3,00,000.00 only.*

Background:

2. The Kopili Hydroelectric Power Station (4x50 MW = 200 MW) (Kopili HPS), a Hydro-Electric Power Station located in the Dima Hasao District of Assam is owned and operated by NEEPCO.

3. The Kopili Hydroelectric Power Station comprises of three power stations, namely Kopili Power Station (4x50 MW), Khandong Power Station (2x25 MW) and Kopili Power Station Stage II (1X25 MW). Initially, the Plant was of the capacity of 150 MW i.e. (2X50MW) in Kopili Power Station and (2X25 MW) in Khandong Power Station. Later on, (2X50 MW) were added to Kopili Power Station as KHEP First Stage Extension in the year 1997. In addition, 1X25 MW Khondong Stage-II Power station was added to the project with date of commissioning on 26.07.2004. The date of commercial operation of the units of the Kopili Power Station (4x50 MW), and the corresponding unit capacities are indicated in the table below:

Unit No.	Date Of Commercial Operation	Unit Capacity
Unit I	05.07.1988	50 MW
Unit II	22.07.1988	50 MW
Unit III	01.05.1997	50 MW
Unit IV	12.07.1997	50 MW
Station COD	**12.07.1997**	

4. The Petitioner has filled present Petition for approval of Reconstruction, Renovation & Modernization (R&M) for Life Extension of the 4x50 MW Kopili Power Station.

5. The Petitioner had filed Petition No. 717/MP/2020 for approval of Reconstruction, R&M in respect of Kopili Power Station (4x50 MW). However, Commission vide order dated 19.7.2021 had disposed of the above petition as CEA's vetting on DPR was awaited and observed that it would be appropriate to consider the matter regarding approval of the DPR on Reconstruction, R&M for life extension of Kopili Power Station (4 x 50 MW) only after the report of CEA is received. Accordingly, on a specific observation by the Commission the representative for the Petitioner agreed to the same.

6. With regard to R&M Regulation 27 of 2019 Tariff Regulations, provides as under:

> *"27. Additional Capitalisation on account of Renovation and Modernisation (1) The generating company or the transmission licensee, as the case may be, intending to undertake renovation and modernization (R&M) of the generating station or unit thereof or transmission system or element thereof for the purpose of extension of life beyond the originally recognised useful life for the purpose of tariff, shall file a petition before the Commission for approval of the proposal with a* ***Detailed Project Report*** *giving complete scope, justification,* ***cost-benefit analysis***, ***estimated life extension from a reference date***, ***financial package***, *phasing of expenditure,* ***schedule of completion***, *reference price level, estimated completion cost including foreign exchange component, if any, and any other information considered to be relevant by the generating company or the transmission licensee:*
>
> *Provided that the generating company making the applications for renovation and modernization (R&M) shall not be eligible for Special Allowance under Regulation 28 of these regulations;*
>
> *Provided further that the generating company or the transmission licensee intending to undertake renovation and modernization (R&M) shall be required to* ***obtain the consent of the beneficiaries*** *or the long term customers, as the case may be, for such renovation and modernization (R&M) and submit the same along with the petition.*

(2) Where the generating company or the transmission licensee, as the case may be, makes an application for approval of its proposal for renovation and modernisation (R&M), approval may be granted after due consideration of reasonableness of the proposed cost estimates, financing plan, schedule of completion, interest during construction, use of efficient technology, cost-benefit analysis, expected duration of life extension, consent of the beneficiaries or long term customers, if obtained, and such other factors as may be considered relevant by the Commission.

....."

Submissions by the Petitioner

7. The Petitioner has submitted that CEA has given its concurrence to the Detailed Project Report (DPR) and accordingly, the instant petition has been filed. The Petitioner has submitted as under:

I. Justification for Reconstruction, Renovation & Modernization

a) Clause 73 under Regulation 3 of the Tariff Regulations, 2019 states as below:

"Useful Life' in relation to a unit of a generating station, integrated mines, transmission system and communication system from the date of commercial operation shall mean the following:

(a) Coal/Lignite based thermal generating station 25 years
(b) Gas/Liquid fuel based thermal generating station 25 years
(c) AC and DC sub-station 25 years
(d) Gas Insulated Substation (GIS) 25 years
(e) Hydro generating station including pumped storage hydro generating stations 40 years
(f) Transmission line (including HVAC & HVDC) 35 years
(g) Communication system 15 years

Provided that the extension of life of the projects beyond the completion of their useful life shall be decided by the Commission on case to case basis;"

II. Units 1 and 2 of Kopili PS have been in operation for more than 32 years and units 3 and 4 have completed 23 years of operation.

III. **Devastation of Kopili PH**: In the early morning of 7th October, 2019, an unfortunate incident of penstock rupture occurred, causing complete inundation of the power house in mud and water and loss of four lives. As the Penstock Protection Butterfly Valve was damaged and rendered inoperable by the incident, the flow of water could not be controlled and it continued till 12th October, 2019, when the intake gate could be finally lowered with great difficulty under heavy water flowing conditions. The impact of the rupture caused the hills on the upstream side to be washed away, filling up the machine dome in the power house and the water flowing at the EOT crane beam level. The Generating Transformers Switch yard was also completely covered by mud and sand to a height of 2-3 meters. The power house approach roads also have been completely washed away. As a result of this incident the entire generating plant has been rendered completely inoperable and beyond restoration.

IV. Even before this unfortunate incident, since 2006 the power house had been operating in extremely acidic environment, with the pH value of reservoir water feeding the plant ranging between 2.8 to 5.44, causing extensive damage to the underwater metallic parts. As the machines were not designed to operate under such acidic conditions, the plant availability and generation had gone down considerably. Formation of sulphuric acid in some parts of the upper catchment area due to the oxidation and hydration of pyrites that are exposed to atmosphere by human activities and leaching of the acid into the surface and sub-surface flow that join the reservoir was inferred as a reason of the acidity. GSI study conducted earlier revealed that the sub-water sheds on western side of the Kopili Catchment at upstream of the Khandong Dam is contributing most in contaminating water in the area and making it acidic. Thus, the aforesaid sub-water shed appears to have

already become environmental hot spot over an unknown period. GSI has identified unscientific extraction of coal in the catchment area as primary reason for this acidic nature of water.

V. The Plant started to get impaired to a certain extent due to reservoir acidity problem, which was first detected in 2006 when Geological Survey of India (GSI) was drafted by NEEPCO to find out the causes of some damages to the project. Multidisciplinary team of experts from CWC, CEA, CSMRS visited Kopili HEP in 2009 and suggested different measures to cope up with the problem, including replacement of the metallic parts with parts made of acid resistant materials.

VI. Moreover, being top bracketed high speed machines (600 rpm), the units of Kopili have experienced quite a few unique problems like Labyrinth Failure, Resonance, failure of brake track etc.

VII. Due to long operation over three decades, the operating efficiency of the machines had deteriorated. The generating units have got de-rated and the condition of their auxiliaries, instruments, protective relays & control equipment have deteriorated to such an extent that the combined output of the power plants have fallen below the nameplate capacity with all units running (including the 25 MW Kopili – II unit which is fed by the same Water Conductor System). The units were operating at 100% gate opening to achieve 67-68 MW against the rated Installed Capacity of 75 MW at FRL i.e. 725.00M. The units with 100% gate opening are not able to respond to grid codes like Primary Response, RGMO, AGC (Automatic Generation Control) etc.

VIII. Moreover, the adverse condition of the equipment is leading to frequent breakdowns, resulting in relatively low plant load factor. Thus, a need is established to suitably refurbish

& modernize the units to obtain the desired output along with life extension of machine & plant and adoption of modern technologies for better control and monitoring.

IX. Following problems are being faced at the power station, causing frequent outages of the generating units, which in turn is leading to substantial wastage of available water power potential:

- Excessive wear & tear and erosion / damages of underwater parts due to both ageing and acidic reservoir water. Deterioration of the underwater parts is a major factor for the inefficient operation of the power plant.
- Inefficient / old design / obsolete valve, MIV, turbines and generators.
- Old type Governors.
- Unreliable functioning of Hydro-Mechanical equipment.
- Inefficient utilization of water.
- Non-availability of spare parts of outdated systems and equipment.
- Because of less efficiency, inability to adhere to latest Indian Grid Code, like primary response etc.
- After complete submergence of the Power House on 07/10/2019, most of the Electro Mechanical equipment are totally damaged, and repairing is not a feasible solution.
- Low overall efficiency of the plant, due to ageing, acidic corrosion, extensive repairing work in underwater parts etc.

X. Therefore, the need for Reconstruction, Renovation and Modernization of the Kopili PH can be summarized as below:

- Deterioration of plant components due to ageing

- Damage of equipment due to complete inundation of the Power House in mud, sand and water for prolonged period
- Deterioration of plant components due to Acidic corrosion
- Loss of performance/ Efficiency
- Life Extension
- Adoption of modern Technology

XI. Some of the major outages suffered by the Plant since 2004 due to the above mentioned reasons are detailed at paragraph 1.3 of Chapter 1 of the DPR.

XII. CEA guidelines on the "Best Practices & Bench Marking for Hydro" under Chapter 7, Renovation, and Modernisation & Up-rating of hydro power plants stipulate that by undertaking timely R&M & Life extension program, the generating plant can be made to operate for an extended period of 20-25 years with improved reliability and availability.

XIII. Regulations 27 (1) and 27 (2) of the Tariff Regulations, 2019 state as follows:

> *"27. **Additional Capitalisation on account of Renovation and Modernisation***
> *(1) The generating company or the transmission licensee, as the case may be, intending to undertake renovation and modernization (R&M) of the generating station or unit thereof or transmission system or element thereof for the purpose of extension of life beyond the originally recognised useful life for the purpose of tariff, shall file a petition before the Commission for approval of the proposal with a Detailed Project Report giving complete scope, justification, cost-benefit analysis, estimated life extension from a reference date, financial package, phasing of expenditure, schedule of completion, reference price level, estimated completion cost including foreign exchange component, if any, and any other information considered to be relevant by the generating company or the transmission licensee:*
> *Provided that the generating company making the applications for renovation and modernization (R&M) shall not be eligible for Special Allowance under Regulation28 of these regulations;*
>
> *Provided further that the generating company or the transmission licensee intending to undertake renovation and modernization (R&M) shall be required to obtain the consent of the*

beneficiaries or the long term customers, as the case may be, for such renovation and modernization (R&M) and submit the same along with the petition.

(2) Where the generating company or the transmission licensee, as the case may be, makes an application for approval of its proposal for renovation and modernisation(R&M), approval may be granted after due consideration of reasonableness of the proposed cost estimates, financing plan, schedule of completion, interest during construction, use of efficient technology, cost-benefit analysis, expected duration of life extension, consent of the beneficiaries or long term customers, if obtained, and such other factors as may be considered relevant by the Commission."

8. Against the above background, the Petitioner has prepared a Detailed Project Report (DPR) on Reconstruction, Renovation & Modernization for life extension of the Kopili Power Station. The Petitioner now humbly takes the liberty to submit this Petition before the Commission for approval of the DPR.

XV. Although components like Dam and spillway repair, repairs of HRT, replacement of both penstocks, repair of intake gates, spillway gates, draft tube gates, various hoists etc. shall also be taken up during Reconstruction/ R&M, however, predominantly Electro-mechanical equipment of power station are proposed to be replaced (although certain components like spiral casing etc. is to be retained & refurbishment is envisaged in a number of components) in "Reconstruction, Renovation & Modernisation program of Kopili power station".

XVI. Consent for undertaking the Reconstruction, Renovation & Modernization works has been sought for from the beneficiaries of the Plant i.e. Respondents at Sl. Nos. 1 to 7 mentioned above. Consent has been received from all the above mentioned beneficiaries.

XVII. The Board of Directors of NEEPCO at its 260th Meeting held on 15.09.2020 approved the DPR on Reconstruction, Renovation and Modernization for Life Extension of the Kopili

Power Station with an estimated cost of Rs.854.85 crore (including IDC and financing charges of Rs.42.20 crore).

XVIII. Scope of Work and Justifications for the Proposed Reconstruction and R&M Activities

The scope of work and justification for the same is discussed in detail in Chapter – III of the DPR.

XIX. Installed Capacity & Design Energy

The original installed capacity of the Plant is 200 MW (50 MWx4) with an annual Design Energy of 1034 MUs. However, Hydro Project Appraisal Division, CEA letter dated 05.03.2021 approved the revised Design Energy of 993.80 MUs for the plant.

XX. Estimated Project Completion Cost

In the submitted DPR the cost the project has been estimated at March 2020 Price Level with a construction period of 24 months. The estimated present day cost of the project is Rs.1117.07 crore, including Rs.870.76 crore of Hard Cost and Rs.47.21 crore as IDC at March 2020 Price Level, a lump sum provision of Rs.2.0 crore is kept towards financial charge and a residual cost of Rs.197.10 crore is estimated.

XXI. CEA has approved the cost as under:

I. Hydro Project Appraisal Division, CEA vide letter dated 22.03.2021 has vetted the E&M Cost for Rs. 391.11 Crore at January 2021 price level.

II. CEA's Hydro Engineering and Renovation and Modernisation Division vide its letter no. 132/2 (NEEPCO-Kopili) 2021/HE&RM/CEA dated 04.06.2021 based on recommendation of Thermal Civil Design Division, CEA letter dated

3.06.2021 has vetted the Civil and HM works Cost at Rs. 43300.67 lakhs at January 2021 Price level.

III. CEA's Hydro Engineering and Renovation and Modernisation Division vide its letter no. 132/2 (NEEPCO-Kopili) 2021/HE&RM/CEA/261 dated 21.06.2021 has given the concurrence to the DPR and vetted the hard cost (without IDC, FC) at Jan'2021 price level for Rs.82411.67 lakh.

IV. Vide CEA letter no. 13/2(NEEPCO-Kopili)/2021/HE&RM/CEA dated 20.06.2022, approved the IDC of Rs.53. 97 Crore i.e. Capital cost including IDC stands at Rs. 878.09 Crores (Rs.824.12+53.95 Crore). Further, residual value of the old asset has been estimated at Rs.167.68 Crore. Considering the approved capital cost and Tariff Regulation 2019, the 1st Year and levelised tariff is estimated as Rs. 2.37/unit and Rs. 2.39/unit. The abstract of cost estimate is shown below:

V.

Sl. No	Description	Submitted by NEEPCO (Rupees in Lakh)	Vetted by CEA (Rupees in Lakh)
I. Electro Mechanical Works			
1.	Plant & Machinery	26722.96	26722.96
2	Engg., Supervision, Detail Engineering , Model Testing of Turbine, Consultant Fees , technological know-how , project Management etc	3430.36	2341.19
3	GST on above service	5619.36	5553.20
4	Pre-operative and other expenses	3875.41	3581.42
5	Dismantling Charges	966.01	912.41
Total (E&M) Works		**40614.00**	**39111.00**
II. HM & Civil Works			
6	HM& Civil Works	43759.90	43300.67
Total Hard Cost (Rs. In Lakh)		**84373.90**	**82411.69**

IDC(In Lakh)		**5397.00***
Total R&M cost approved by CEA		**87808.69**
Residual Value of old Asset		**16768.00**
Grand Total (In Lakh)		**104576.69***

*The Petitioner has indicated total amount of Rs. 104574.69 lakh considering IDC of Rs.5395 lakh whereas CEA has vetted IDC Rs.5397 lakh and we have considered the same.

XXII. Project Completion Period

The Reconstruction, Renovation and Modernization project of Kopili Power Station is scheduled for completion in 24 months.

XXIII. Estimated Life Extension

The life of the generating station is estimated to be extended by 40 years from commissioning on completion of Reconstruction, Renovation and Modernization works.

XXIV. Project Financing

The project is proposed to be financed through loan at the rate of interest of 7.50 % p.a. For purpose of tariff calculations 70: 30 Debt: Equity ratio has been considered. No foreign financing is envisaged and hence FERV has not been taken into consideration.

XXV. Tariff

Taking into consideration all normative parameters as defined in the Tariff Regulations, 2019, the tariff works out as below:

1st year tariff = Rs. 2.37/kWh
Levellized tariff: - Rs 2.39/kWh

XXVI. Cost Benefit Analysis

On detailed analysis, it is seen that R&M work is extremely beneficial in comparison to construction of a new project of a similar size. The key comparisons are shown below:

i) Based on hydrological data (1998-99 to 2009-10) and restriction in discharge of HRT, up-rating of capacity of power plant is not envisaged. Therefore, the proposal is for power plant size of 200MW (4 x 50 MW) with optimized annual energy of 1034MU. The average generation by power plant in last 15 years is 823.96 MU. The plant has not been able to achieve its design energy most of the time.

Considering historical average energy and annual generation as suggested by enclosed power potential and water availability study, (i.e. 1034MU in 90% dependable year at 95% machine availability) and there is likely benefit in annual generation of 210.04MU over the average achieved generation of last 15 years.

ii) The cost / MW for the proposed R&M works is about **Rs. 5.6 Crores per megawatt**, as against of about Rs.10.0 crore Per megawatt for new hydroelectric power plant of similar size.

iii) Post Restoration, R&M, the 1st year tariff of Power Station is expected to be Rs.2.39/kWh and the levelized tariff is likely expected to be Rs.2.37/kWh considering a debt-equity ratio of 70:30 and 12% free power to the home States.

iv) Levelized tariff for new project of similar size, considering present day cost of the project @ 10 crore per MW, works out to Rs. 5.0 /kWh

XXVII. Considering the above, it may be concluded that, it is highly economical to go for an extensive Reconstruction, Renovation and Modernization program for the 200 MW Kopili Power Station, which will not only provide reliable, environment friendly electric power to

the country, but also, the cost of production, after completion of the project will remain much lower than the average price of power in the present circumstances.

Replies and Rejoinders

Reply of Respondent No. 1 (APDCL)

9. The Respondent, APSCL vide its affidavit dated 27.3.2023 in reply to the petition has submitted as under:

a) The Petitioner has submitted the certificate to the effect that the assets claimed during additional capitalisation for the period 2014-19 got damaged during the inundation of Kopili Power House on 07/10/2019. Post inundation, under compulsion assets of similar nature are included in the proposed R&M works.

b) It seems that the Petitioner is of the view that amount of Rs 130.89 Cr claimed as additional capitalisation in the period 2014-19 can be claimed again by the Petitioner on the basis of the events in 2019-20. The Petitioner should submit item wise justifications of the assets which are claimed again along with substantial documentary evidence that those items were damaged in 2019.

c) Petitioner has failed to segregate the items it has claimed in the R&M Petition with the items already claimed as additional capital expenditure during the period 2014-19 (Petition No 370/GT/2019). As such, it is paramount that the Petitioner provides a comparative statement of the items/work to be claimed in the R&M Petition with the items already claimed in 2014-19.

d) The calculation of levelized tariff can only be considered when there is clarity whether the Petitioner has not claimed any items/works which were already being claimed in the Petition 370/GT/2019.

10. The Petitioner has not filed its rejoinder to above reply of APDCL.

Hearing dated 12.12.2022

11. The matter was heard and admitted on 12.12.2022. During the hearing, the representative of the Petitioner submitted that the present petition has been filed for approval of the proposal (DPR) towards R&M for life extension of the Kopili Power Station, beyond its normal useful life. On a specific query by the Commission as to whether the approval of cost by CEA and the consent of the beneficiaries for R&M have been obtained, the representative of the Petitioner affirmed the same.

Hearing dated 22.02.2023

12. The matter was again heard on 22.02.2023. Commission after hearing the parties reserved the matter in the petition and directed the Petitioner to submit the following additional information:

(a) Certificate to the effect that additional capitalization claimed during the period 2014-19 (in Petition No. 370/GT/2019) are not included under the scope of the proposed R&M works.
(b) Status of the R&M works (schedule of completion).
(c) Calculations for the residual value of Rs.16768.00 lakh, indicated for old asset.
(d) Calculations for levelized tariff (in MS excel)

13. The Petitioner vide affidavit dated 27.3.2023 in compliance to the above ROP of the hearing dated 22.02.2023, submitted the following additional information as under:

(a) A Certificate certifying that the additional capitalization claimed during the period 2014-19 (in Petition No. 370/GT/2019) are not included under the scope of the proposed R&M works. However, the assets claimed in the additional capitalization during the period 2014-19 got damaged during the inundation of Kopali Power House on 7/10/2019. Post inundation, under compulsion assets of similar nature are included in the present proposed R&M works.

(b) PERT / CPM chart for the R&M works: Schedule of balance works- Civil works start on 01.01.2021 and finish on 22.04.2023. HM works start on 10.09.2021 and finish on 07.03.2023. EM works start on 02.04.2021 and finish on 30.04.2023.

(c) Capital Cost as on the last date of operation and decapitalization of assets.

(d) The assumptions considered along with detailed computations for arriving at 1st year tariff (Rs.2.37/kWh) and levelized tariff (Rs.2.39/kWh).

Analysis & Decision

14. The submissions in the petition have been considered. With regard to renovation and modernization (R&M), Regulation 27 of 2019 Tariff Regulations provides as under:

27. Additional Capitalization on account of Renovation and Modernisation

(1) The generating company or the transmission licensee, as the case may be intending to undertake renovation and modernization (R&M) of the generating station or unit thereof or transmission system or element thereof for the purpose of extension of life beyond the originally recognised useful life for the purpose of tariff, shall file a petition before the Commission for approval of the proposal with a ***Detailed Project Report giving complete scope,***

justification, cost-benefit analysis, estimated life extension from a reference date, financial package, phasing of expenditure, schedule of completion, reference price level, estimated completion cost including foreign exchange component, *if any, and any other information considered to be relevant by the generating company or the transmission licensee:*

Provided that the generating company making the applications for renovation and modernization (R&M) shall not be eligible for Special Allowance under Regulation28 of these regulations;

Provided further that the generating company or the transmission licensee intending to undertake renovation and modernization (R&M) shall be required to obtain the ***consent of the beneficiaries*** *or the long term customers, as the case may be, for such renovation and modernization (R&M) and submit the same along with the petition.*

(2) Where the generating company or the transmission licensee, as the case may be, makes an application for approval of its proposal for renovation and modernisation (R&M), approval may be granted after due consideration of ***reasonableness of the proposed cost estimates, financing plan, schedule of completion, interest during construction, use of efficient technology, cost-benefit analysis, expected duration of life extension, consent of the beneficiaries or long term customers,*** *if obtained, and such other factors as may be considered relevant by the Commission.*

(3) In case of gas/ liquid fuel based open/ combined cycle thermal generating station after 25 years of operation from date of commercial operation, any additional capital expenditure which has become necessary for renovation of gas turbines/steam turbine or additional capital expenditure necessary due to obsolescence or non-availability of spares for efficient operation of the stations shall be allowed:

Provided that any expenditure included in the renovation and modernization (R&M) on consumables and cost of components and spares which is generally covered in the O&M expenses during the major overhaul of gas turbine shall be suitably deducted from the expenditure to be allowed after prudence check.

(4) After completion of the renovation and modernization (R&M), the generating company or the transmission licensee, as the case may be, shall file a petition for determination of tariff. Expenditure incurred or projected to be incurred and admitted by the Commission after prudence check, and after deducting the accumulated depreciation already recovered from the admitted project cost, shall form the basis for determination of tariff.

15. It is observed that the requirement for R&M of generating plants have been stressed by the CEA, the Ministry of Power, GOI and in the Tariff Policy prescribed by the Central Government from time to time. CEA has considered the "Renovation and Modernization of

Old Power Plants" as one of the best options to bridge the gap between demand and supply of power. It has also been stressed that the hydro plants which have completed their useful life shall undertake R&M for extending the life of the hydro plants, specially in view of the fact that newer capacity additions in hydro sector has slowed down in spite of various measures taken by MOP, GOI and this Commission to incentivize the hydro power plants. As per the requirement of Regulation 27(1) of the 2019 Tariff Regulations, the Petitioner has placed on record the DPR (CEA has given its concurrence to the DPR) which provides the complete scope of R&M works, justification, cost estimate, economic and financial evaluation, estimated life extension from a reference date, financial package, phasing of expenditure, schedule of completion and reference price level etc.

Issues for consideration

16. Based on the submissions of the parties and the documents available on record, the issues which emerge for consideration as per Regulation 27(2) of the 2019 Tariff Regulations are examined hereunder:

Issue No. (A): Reasonableness of the proposed cost estimates, IDC and Cost Benefit Analysis:

17. The Petitioner submitted that as per Chapter 7 (Renovation and Modernization and Up-rating of Hydro Power Stations) of "'Best practices in HE Power Generation" published by CEA, by undertaking timely RM&U & Life extension program, the generating plant can be made to operate for an extended period of 20-25 years with improved reliability and availability. The estimated completion cost of proposed Reconstruction, R&M of Kopili HPS is Rs. 1045.77 crore including CEA approved cost of Rs. 878.09 crore and residual value of old

asset of Rs. 167.68 crore. The capital cost has been worked out at January 2021 Price Level. The cost / MW for the proposed R&M works is about Rs. 5.6 crore per megawatt, as against of about Rs.10.0 crore per megawatt for new hydroelectric power plant of similar size. Post Restoration, R&M, the 1st year tariff of Power Station is expected to be Rs.2.37/kWh (based on CERC guidelines) and the levelized tariff is likely expected to be Rs.2.39/kWh considering a debt-equity ratio of 70:30 and 12% free power to the home States. Levelized tariff for new project of similar size, considering present day cost of the project at 10 crore per MW, works out to Rs. 5.0 /kWh The useful Life of the power station is estimated to be 40 years after completion of R&M works.

Analysis and decision:

18. We have considered the submissions of the Petitioner and the Respondent, APDCL. In our view, the projects which have outlived their useful life should go in for R&M activities to ensure improved reliability and availability. Allowing operation of the old generating station with reduced capacity may hamper reliability and availability of the generating station which in turn may require the beneficiaries to arrange costly power during the prolonged outages of the old generating station. In the instant case, the R&M proposal is before the completion of useful life due to the reasons such as incident of penstock rupture, operation in extremely acidic environment, deterioration in operating efficiency of the machines due to long operation over three decades. The generating units have got de-rated and the condition of their auxiliaries, instruments, protective relays & control equipment have deteriorated to such an extent that the combined output of the power plants have fallen below the nameplate capacity with all units running.

19. Consequent to the above, the Petitioner has submitted the DPR to CEA. CEA vide letter dated 21.06.2021 gave concurrence to the DPR and vetted the hard cost (without IDC, FC) at Jan 2021 price level for Rs. 824.12 crore. Further, CEA vide letter dated 20.06.2022, approved the IDC of Rs. 53.97 crore. As such, the total cost approved by CEA for R&M works out to Rs. 878.09 lakh.

20. We also note the observations of CEA in its letter dated 21.06.2021 that the proposal is primarily for replacement of electro-mechanical component of power station. The works like Dam and spillway repair, HRT repair, penstocks replacement, intake gates repair, draft tube gates repair, and repair of various hoists etc. shall also be taken up during Reconstruction and R&M. The beneficiaries would be availing the benefit of reliable power with peaking capability for 40 years at expected levelized tariff of around Rs 2.39/kWh (as indicated in the DPR/CEA approval), which is much less than the tariff of new hydro generating stations commissioned during recent times at capital cost ranging from Rs.6 crore/MW to Rs.12 crore/MW.

Issue No. (B): Extension of Life Post R&M:

21. The Petitioner has stated that life of the generating station is estimated to be extended by 40 years from commissioning on completion of Reconstruction, Renovation and Modernization works.

Analysis and Decision

22. Keeping in view that CEA had cleared the DPR for useful life of 40 years of the project, we allow the life extension of the Kopili HPS by 40 years.

Issue No. (C): Review of Design Energy (DE)

23. As regards DE, the Petitioner has submitted that CEA, vide its letter No. CEA-HY-12-33/2/2020 (dated 05.03.2021), approved the design energy of 993.80 MUs for Kopili HPS (200 MW) as against the existing DE of 1034 MUs.

Analysis & Decision

24. The matter has been considered. It is noticed that CEA considering the updated Power Potential Study of Kopili HPS and revised the Design Energy as 993.80 Mus. Accordingly, we allow the same.

Issue No. (D): Consent of the beneficiaries or long-term customers

With regard to obtaining the consent of the beneficiaries, the petitioner has submitted that consent for undertaking the Reconstruction, R&M works has been sought from the beneficiaries of the Plant.

25. The matter has been examined. The second proviso to Regulation 27(1) and Regulation 27(2) of the 2019 Tariff Regulations provides as under:

27(1) xxx
xxx
Provided further that the generating company or the transmission licensee intending to undertake renovation and modernization (R&M) shall be required to obtain the ***consent of the beneficiaries*** *or the long-term customers, as the case may be, for such renovation and modernization (R&M) and submit the same along with the petition.*

(2) Where the generating company or the transmission licensee, as the case may be, makes an application for approval of its proposal for renovation and modernization (R&M), approval may be granted after due consideration of reasonableness of the proposed cost estimates, financing plan, schedule of completion, interest during construction, use of efficient technology, cost-benefit analysis, expected duration of life extension, ***consent of the beneficiaries or long term customers, if obtained****, and such other factors as may be considered relevant by the Commission"*

26. It is noticed from the submissions that, in terms of the second proviso, as quoted above, the Petitioner had sought the consent of the respondents for proposed Reconstruction, R&M work and same has been received from all the beneficiaries. However, Assam Power Distribution Company Ltd, Manipur State Power Distribution Company Limited, Power & Electricity Department, Government of Mizoram have granted their consent subject to the condition that R&M works would be completed by NEEPCO within scheduled completion date and the tariff proposed is upper ceiling and in no circumstances any escalation thereon would be permissible. Further, Tripura State Electricity Corporation Ltd has given its consent subject the condition that tariff should be within Rs. 2.62 per unit and any time and cost overrun and its impact on tariff would not be accepted by the same. We have considered the submissions. It is noticed that all the beneficiaries have given their consent for R&M of the instant generating station. However, with regard the comment of some beneficiaries regarding tariff, the Commission is of the considered view that tariff will be determined by the Commission based on the tariff petition filed for determination of tariff of the generating station, in terms of the prevailing Tariff Regulations.

Recommendations

27. Considering the above discussions, regarding the prayer (a) of the Petitioner for in-principle approval of R&M of the generating station, the Commission based on the Detailed Project Report vetted by CEA, approves the R&M for life extension of the 4x50 MW Kopili Power Station with an estimated project cost of Rs 878.09 crore (Rs. 824.12+53.97 Crore) including IDC of Rs. 53.97 crore as vetted by CEA along with life extension of the generating

station by 40 years. The revised Design Energy of the generating station after completion of RM&U shall be 993.80 MUs, as approved by the CEA. After completion of the said RM&U, the Petitioner shall file a petition for determination of tariff of the generating station, in terms of the Regulation 27(4) of the 2019 Tariff Regulations. As regards approval of residual value of the old asset, the Commission observes that treatment of residual value of the old asset would be a considered in the petition for tariff determination post R&M.

28. With regard to the contention of the Respondent APDCL, the Petitioner is directed to keep separate details for assets which were procured during 2014-19 tariff period and are also included in R&M scheme due damage caused during penstock failures. Also as per the conditional NOC given by the beneficiaries, the petitioner is directed to implement the R&M scheme within the scheduled completion date.

29. Further, with regard to tariff during the R&M period, it is observed that the Commission vide order dated 3.6.2016 in Petition No. 76/MP/2015 while approving the R&M proposal in respect of Bairasiul Power Station of the Petitioner had allowed the recovery of only two components of tariff namely, the O&M expenses and Interest on Loan during the period when the unit/station was under shut down, as provided to thermal generating stations executing R&M/LE program. Though the above proviso relates to thermal generating stations, the same is applicable to all generating stations /units thereof or the transmission systems. In terms of the said proviso, during the period of shutdown of the generating station or transmission system, as the case may be, due to R&M, the generating company or transmission licensee shall be allowed to recover part tariff which shall include only O&M expenses and interest on

loan. Accordingly, we direct that the Petitioner is entitled to recover tariff comprising only of O&M and interest on loan for the period units under the R&M.

30. For the purpose of billing for the period 2019-24, we direct that (i) the units shall be taken out for R&M during low inflow periods so as to minimize the loss of energy and (ii) the existing procedure of declaring capacity and energy generation based on water availability for the units, which are not in R&M, shall be followed as per Regulation 44 (2) and (3) of 2019 Tariff Regulations.

31. As regards the prayer (b) of the Petitioner, it is observed that the Commission vide Order dated 19.7.2021 in Petition No. 717/MP/2020 agreed to adjust the filing fees deposited by Petitioner in respect of Petition No 717/MP/2020 against the fresh petition, based on the report of CEA on DPR, to be filed by the Petitioner.

32. Petition No. 189/MP/2022 is disposed of in terms of above.

Sd/-	Sd/-	SD/d/-
(P. K. Singh)	**(Arun Goyal)**	**(I. S. Jha)**
Member	**Member**	**Member**

ANNEXURE - XII

नॉर्थ ईस्टर्न इलेक्ट्रिक पावर कार्पोरेशन लिमिटेड
NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
भारत सरकार का उद्यम A Govt. of India Enterprise
मिनीरत्न : श्रेणी-I Miniratna : Category-I
एनटीपीसी लिमिटेड की पूर्ण स्वामित्व वाली सहायक कंपनी A wholly owned subsidiary of NTPC Ltd.
कंपनी सचिवालय COMPANY SECRETARIAT

CERTIFIED TRUE COPY OF THE BOARD RESOLUTION PASSED BY THE BOARD OF DIRECTORS OF NORTH EASTERN ELECTRIC POWER CORPORATION LTD IN ITS 288TH BOARD MEETING HELD ON SATURDAY, 10TH AUGUST, 2024 AT THE BOARD ROOM OF NTPC OFFICE, NTPC BHAWAN, SCOPE COMPLEX, NEW DELHI, FROM 03:00 PM TO 08:45 PM.

AGENDA NO: 288.26

PROPOSAL SEEKING APPROVAL OF THE BOARD OF DIRECTORS OF NEEPCO FOR REVISED COST ESTIMATE AT COMPLETION COST (MAY'2024 PL) FOR RECONSTRUCTION AND RENOVATION & MODERNISATION OF 4X50 MW KOPILI POWER STATION.

RESOLUTION:

RESOLVED to recommend the Revised Cost Estimate at May' 2024 price level of Reconstruction, R&M in respect of Kopili Power Station amounting to Rs.1201.66 Crore including IDC & FC of Rs.79.74 Crore along with time overrun of 13.20 months.

RESOLVED FURTHER THAT NEEPCO shall take necessary action for submission of the Revised Cost Estimate at May' 2024 price level of Reconstruction, R&M in respect of Kopili Power Station to the MoP/ CEA.

अबिनोम पनु रोंग
Abinoam Panu Rong
कंपनी सचिव
Company Secretary
नीपको लि.
NEEPCO Ltd.

पंजीकृत कार्यालय ब्रूकलैंड कम्पाउंड, लोअर न्यू कॉलोनी, शिलांग-793003
Registered Office: Brookland Compound, Lower New Colony, Shillong - 793 003
टेलीफोन / Telephone No.0364-2228552, ई-मेल / email - company.secy@neepco.co.in
वेबसाइट / website - www.neepco.co.in सीआईएन / CIN - U40101ML1976GOI001658

ANNEXURE - XIII

NORTH EASTERN ELECTRIC POWER CORPORATION LTD.

(A Government of India Enterprise)

O/o the Executive Director (Design & Engineering)

NEEPCO Bhawan, 2nd / 3rd Floor
R.G. Baruah Road, Sundarpur
Guwahati-05 (ASSAM)

No. NEEPCO/GHY/D&E/T-53/2024-25/304

Date: 14-08-2024

To,
The Chief Engineer,
HE & TD and R&M Division,
Central Electricity Authority,
Sewa Bhawan,
R. K. Puram, New Delhi
PIN: 110 066

Sub: Submission of Revised Cost Estimate for Reconstruction, Renovation and Modernization of 4X50 MW Kopili Power Station, Umrongso, Assam

Sir,

With reference to the above, we would like to bring to your kind notice that the Reconstruction, Renovation and Modernization Works of 4X50 MW Kopili Power Station of NEEPCO have been completed.

The total cost of the Reconstruction, Renovation & Modernization Works was vetted by CEA at an estimated value of Rs. 878.09 Crore including IDC & FC of Rs 53.97 Crore at Jan 2021 PL, vide letter no. F.No CEA-EC-11-15(11)/2/2020-FCA Division (copy enclosed as Annexure – 1). As per the approved construction programme, the project was scheduled for commissioning by 30th April'2023.

However, due to various reasons beyond the control of the Corporation, the project could not be completed as envisaged. The primary reasons attributable to delay were Covid-19 pandemic & its consequential effect on supply chain, geological surprise encountered during unplugging of Adit-2, excessive seepage inside tunnel, among others.

The units have been declared for commercial operation as given below;

Unit # 4: 20-08-2023
Unit # 3: 03-09-2023
Unit # 2: 12-11-2023
Unit # 1: 03-06-2024

The Revised Cost at May'2024 PL has been estimated at Rs 1201.66 Crore, including IDC &FC Rs.79.74 Crore and price escalation of Rs 82.94 Crore. The Project has experienced a cost overrun of Rs 240.63 Cr. (27.40 %) and a time overrun of 13.2 months with respect to CEA approval. However, the time overrun has happened with a minimum period of 6.2 months for Unit-3 and with a maximum of 13.2 months for Unit-1. The same has been approved by the Board of Directors of NEEPCO.

In this regard, a detail proposal has been framed for vetting/concurrence of the Revised Cost Estimate by the Central Electricity Authority, which includes the following;

1. Revised Cost Estimate showing variation of quantities and cost of Civil, HM and EM Works at May'2024 PL;
2. Drawing Volumes;
3. Write up on Cost Overrun and Time Overrun;

The detail proposal is attached herewith for your kind examination and concurrence.

This is issued with the approval of the Director (Technical), NEEPCO.

Thanking you,

Yours faithfully,

14/08/2024

Enclo: As above

S. S. Adhikari,
Executive Director (PABD, IT & D&E)

ANNEXURE - XIV

ग्रिड-इंडिया GRID-INDIA ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
GRID CONTROLLER OF INDIA LIMITED
(A Government of India Enterprise)
[formerly Power System Operation Corporation Limited (POSOCO)]
उत्तर पूर्वी क्षेत्रीय भार प्रेषण केन्द्र / North Eastern Regional Load Despatch Centre
कार्यालय : लोवर, लापालांग, शिलांग -793006
Office : Lower Nongrah, Lapalang, Shillong- 793006
CIN : U40105DL2009GOI188682, Website : www.nerldc.in, E-mail : nerldc@grid-india.in, Tel : 0364-2537470/427, Fax: 03642537486

Approval No: NERLDC/SOII/FTC/20/5131 **Date 19.08.23**

To,

General Manager (Tech)
Kopili Power Station, KHPS
NEEPCO, Umrongso, Assam

विषय/Sub: कोपिली HEP यूनिट-4 का परीक्षण रन / Trial Run of Kopili HEP Unit-4

Sir/Madam,

This is with reference to generation data submitted pertaining to trial run of Unit-4, Kopili HEP, having installed capacity of 50 MW vide e-mail and NERLDC FTC portal on 19/08/2023.

As per IEGC clause 3 of section 6.3A, Kopili HEP had successfully completed trial run operation from 12:11 Hrs of 18.08.2023 to 00:11 Hrs (12 Hrs) on 19.08.2023 and demonstrated average generation of more than Installed Capacity. Demonstration of raising generation up-to 110% of Installed Capacity was also performed.

In terms of Regulations 6.3A.2 (ix) of 4th amendment of IEGC dated 6th April 2016, Unit-IV of Kopili HEP has successfully completed the trial run.

धन्यवाद के साथ / Thanking you,

भवदीय /Yours Sincerely

अमरेश 19.08.23
(अमरेश मल्लिक/ Amaresh Mallick)
मुख्य महाप्रबंधक / Chief General Manager (I/C)
उपक्षेभाप्रेके, शिलांग / NERLDC, Shillong

Copy to:

1. Member Secretary, NERPC
2. Executive Director, POWERGRID, NERTS, Shillong-06
3. Executive Director, NLDC
4. Chief General Manager(I/C), NERLDC
5. Sr. GM (SO), Sr. GM (MO) & Sr. GM (SL), NERLDC
6. SLDC (I/C), Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura

ग्रिड-इंडिया GRID-INDIA ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
GRID CONTROLLER OF INDIA LIMITED
(A Government of India Enterprise)
(formerly Power System Operation Corporation Limited (POSOCO))
उत्तर पूर्वी क्षेत्रीय भार प्रेषण केन्द्र / North Eastern Regional Load Despatch Centre
कार्यालय : लोवर, लापालांग, शिलांग -793006
Office : Lower Nongrah, Lapalang, Shillong- 793006
CIN : U40105DL2009GOI188682, Website : www.nerldc.in, E-mail : nerldc@grid-india.in, Tel.: 0364-2537470/427, Fax: 03642537486

Approval No: NERLDC/SOII/FTC/20/5171 **Date 02.09.23**

To,

General Manager (Tech)
Kopili Power Station, KHPS
NEEPCO, Umrongso, Assam

विषय/Sub: कोपिली HEP यूनिट-3 का परीक्षण रन / Trial Run of Kopili HEP Unit-3

Sir/Madam,

This is with reference to generation data submitted pertaining to trial run of Unit-3, Kopili HEP, having installed capacity of 50 MW vide e-mail on 02/09/2023.

As per IEGC clause 3 of section 6.3A, Kopili HEP had successfully completed trial run operation of Unit-3 from 00:30 Hrs of 02.09.2023 to 12:30 Hrs (12 Hrs) of 02.09.2023 and demonstrated average generation of more than Installed Capacity. Demonstration of raising generation up-to 110% of Installed Capacity was also performed.

In terms of Regulations 6.3A.2 (ix) of 4th amendment of IEGC dated 6th April 2016, Unit-3 of Kopili HEP has successfully completed the trial run.

धन्यवाद के साथ / Thanking you,

भवदीय /Yours Sincerely

अमरेश

(अमरेश मल्लिक/ Amaresh Mallick)
मुख्य महाप्रबंधक / Chief General Manager (I/C)
उपप्रभाप्रेके, शिलांग / NERLDC, Shillong

Copy to:

1. Member Secretary, NERPC
2. Chief General Manager(I/C), POWERGRID, NERTS, Shillong-06
3. Executive Director, NLDC
4. Sr. GM (SO), Sr. GM (MO) & Sr. GM (SL), NERLDC
5. SLDC (I/C), Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura

ग्रिड-इंडिया GRID-INDIA
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
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Office : Lower Nongrah, Lapalang, Shillong- 793006
CIN : U40105DL2009GOI188682, Website : www.nerldc.in, E-mail : nerldc@grid-india.in, Tel.: 0364-2537470/427, Fax: 03642537486

Approval No: NERLDC/SO/FTC/20/5455 **Date 10.11.23**

To,

General Manager (Tech)
Kopili Power Station, KHPS
NEEPCO, Umrongso, Assam

विषय/Sub: कोपिली HEP यूनिट-2 का परीक्षण रन / Trial Run of Kopili HEP Unit-2

Sir/Madam,

This is with reference to generation data submitted pertaining to trial run of Unit-2, Kopili HEP, having installed capacity of 50 MW vide e-mail on 08/11/2023.

As per IEGC clause 22(2) Kopili HEP had successfully completed trial run operation of Unit-2 from 20:00 Hrs of 07.11.2023 to 08:29 Hrs of 08.09.2023 (12 Hrs) with interruption of 29 mins (00:20 Hrs to 00:49 Hrs of 08.09.2023) and demonstrated average generation of more than Installed Capacity. Demonstration of raising generation up-to 110% of Installed Capacity was also performed.

There has been no receipt of any objection raised by any beneficiary in writing to RLDC.

This certificate is being issued in accordance with Regulation 25 (1) and 25(2) of CERC (Indian Electricity Grid Code) Regulations, 2023 to certify successful trial run of Kopili Unit 2.

Usage of this certificate for any other purpose is prohibited.
धन्यवाद के साथ / Thanking you,

भवदीय /Yours Sincerely

अमरेश

(अमरेश मल्लिक/ Amaresh Mallick)
मुख्य महाप्रबंधक / Chief General Manager (I/C)
उपक्षेभाप्रेके, शिलांग / NERLDC, Shillong

Copy to:

1. Member Secretary, NERPC
2. Executive Director, NLDC
3. Sr. GM (SO), Sr. GM (MO) & Sr. GM (SL), NERLDC
4. SLDC (I/C), Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura

ग्रिड-इंडिया GRID-INDIA
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
(पावर सिस्टम ऑपरेशन कॉर्पोरेशन)
GRID CONTROLLER OF INDIA LIMITED
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उत्तर पूर्वी क्षेत्रीय भार प्रेषण केन्द्र / North Eastern Regional Load Despatch Centre
कार्यालय : लोवर, लापालांग, शिलांग -793006
Office : Lower Nongrah, Lapalang, Shillong- 793006
CIN: U40105DL2009GOI188682 Website: www.nerldc.in E-mail: nerldc@grid-india.in Tel: 0364-2537470/427 Fax: 03642537488

Approval No: NERLDC/MO/FTC/20/ 682 **Date 01.06.24**

To,

Chief General Manager (Tech)
Kopili Power Station, KHPS
NEEPCO Ltd, Umrongso, Assam

विषय/Sub: कोपिली HEP यूनिट-1 का परीक्षण रन / Trial Run of Kopili HEP Unit-1

Sir/Madam,

This is with reference to generation data submitted pertaining to trial run of Unit-1(50MW) of 4*50MW Kopili HEP, vide e-mail on 29/05/2024.

As per IEGC clause 22(2) Kopili HEP had successfully completed trial run operation of Unit-1 from 12:15 Hrs of 28.05.2024 to 00:15 Hrs of 29.05.2024 (12 Hrs) and demonstrated average generation of more than Installed Capacity. Demonstration of raising generation up-to 110% of Installed Capacity was also performed.

There has been no receipt of any objection raised by any beneficiary in writing to RLDC.

This certificate is being issued in accordance with Regulation 25 (1) and 25(2) of CERC (Indian Electricity Grid Code) Regulations, 2023 to certify successful trial run of Kopili Unit 1.

Usage of this certificate for any other purpose is prohibited.
धन्यवाद के साथ / Thanking you,

भवदीय /Yours Sincerely

for वि सिंह

(अमरेश मल्लिक / Amaresh Mallick)
कार्यपालक निदेशक/ Executive Director
उपक्षेभाप्रेके, गुवाहाटी / NERLDC, Guwahati

Copy to:

1. Member Secretary, NERPC
2. ED(Commercial), NEEPCO, ED(O&M),NEEPCO
3. Executive Director, NLDC
4. HOP Kopili HPS
5. CGM (SL) & GM (MO), NERLDC
6. SLDC (I/C), Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura

NEEPCO New Delhi New Energy Energy Power Corporation

ISO 9001: 2015
ISO 14001: 2015
ISO 45001: 2018

नॉर्थ ईस्टर्न इलैक्ट्रिक पावर कॉरपोरेशन लि.
(भारत सरकार का उद्यम)
NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED
(A Government of India Enterprise)
कोपिली जल-विद्युत संयंत्र / KOPILI HYDRO POWER STATION
संयंत्र प्रमुख का कार्यालय/ O/o THE HEAD OF PLANT

No. NEEPCO/KHPS/HOP/W-26/2023-24/ 256 - 275 Dated 19.08.2023

To,

1. The Member Secretary NERPC, CEA, NERPC Complex, Lapalang, P.O: Rynjah, Shillong=793006,(mail: nerpc@ymail.com, ms-nerpc@gov.in)
2. The Executive Director, NERLDC, Power System Operation Corporation Ltd. (POSOCO), POWERGRID Complex, Lapalang, Shillong-793006. (e-mail: nroy@posoco.in, nerldcso2@posoco.in, ftcnerldc@posoco.in)
3. The Managing Director AEGCL, Bijulee Bhawan, Guwahati -78100, mail: sldcassam@aegcl.co.in, managing.director@aegcl.co.in
4. The Managing Director APDCL Bijuli Bhawan, Guwahati -781001, (mail: md.apdcl@apdcl.org)
5. The Chief General Manager, Commercial & Energy Efficiency, APDCL Bijulee Bhawan, 5th floor, Paltan Bazer, Guwahati -781001, mail (e-mail: acecomt.aseb@gmail.com, indra.nits@gmail.com)
6. The Director Technical, TSECL, Agartala- 799001, mail: sod.tsecl@gmail.com, tsecl_sldc@rediffmail.com,
7. The Director (Distribution), Meghalay Power Distribution Corporation Ltd. Lumgingshai, Short Round Road Shillong- 793001, (mail: dd.mepdcl@gmail.com)
8. The Managing Director MSPDCL, Electricity Complex Keishampat, Imphal-795001, mail: md.mspdcl@gmail.com, sldcmanipur@gmail.com
9. The Chief Engineer (WE Zone), Department of Power, Govt. of Arunachal Pradesh, Itanagar-791111, (mail: sldcitanagar@gmail.com, se.sopsc@gmail.com)
10. The Engineer-in-Chief (P&E), Department of Power, Govt. of Mizoram, Aizawal-796001. mail: sldc_mizoram@rediffmail.com,
11. The Chief Engineer(P), Department of Power, Govt of Nagaland, Kohima-797001, mail: cepower1@gmail.com, nagalandsldc@gmail.com.

Sub: Declaration of COD of Unit #4 of 4X50 MW Kopili Power Station,KHPS, Umrongso, Assam (NEEPCO)

Ref: 1. Our letter No. NEEPCO/KHPS/HOP/W-26/2023-24/129-138 dated 27/07/2023
2. Our letter No. NEEPCO/KHPS/HOP/W-26/2023-24/152-161 dated 31/07/2023
3. Our letter No. NEEPCO/KHPS/HOP/W-26/2023-24/182-191 dated 08/08/2023
4. Our letter No. NEEPCO/KHPS/HOP/W-26/2023-24/218-227 dated 17/08/2023
5. NERLDC Approval No: NERLDC/SOII/FTC/20/5131 dated 19.08.2023

Sirs,

With reference to the above, we are pleased to state that we, NORTH EASTERN ELECTRIC POWER CORPORATION LTD, has successfully completed the trial run of Unit-4 of installed capacity 50 MW of our 200 MW Kopili Power Station, KHPS for a continuous period of 12 hours w.e.f. 12:11 hrs of 18/08/2023 to 01:36 hrs of 19.08.2023, with corresponding increase in duration of test due to short interruption, as per CERC regulation which has been

duly accepted by Grid Controller of India Ltd. (NERLDC) vide letter dated 19-08-2023 referred at Sl. No. 5 above.

We, therefore, declare the COMMERCIAL OPERATION of Unit-4 of Kopili Power Station w.e.f. 00.00 hours of 20.08.2023. The certificate duly signed by our Competent Authority as required under CERC regulation 6.3 A (2) (iii) is enclosed herewith for kind reference.

Thanking you,

Yours faithfully,

19/8/23

(Dilip Kumar Saikia)
Head of Project
Kopili Hydro Power Station

CC: The Executive Director, NERTS, PGCIL, Lapalang, Shillong

NIO:
No. NEEPCO/KHPS/HOP/W-26/2023-24/ 276 - 289 Dated 19.08.2023

Copy to :

1. The CMD, NEEPCO, for favour of kind information please.
2. The Director (Finance), NEEPCO, for favour of kind information please.
3. The Director (Technical), NEEPCO, for favour of kind information please
4. The Director (Personnel), NEEPCO, for favour of kind information please
5. The ED(O&M), NEEPCO, for favour of kind information please
6. The ED (D&E), NEEPCO, for favour of kind information please.
7. The ED (Fin), NEEPCO, for favour of kind information please.
8. The CGM(Commercial), NEEPCO, Shillong for favour of kind information please.
9. The CGM (CPM), NEEPCO, Shillong information please.
10. The CGM (Fin), NEEPCO, Shillong, for information please.
11. The Coordinator, NEEPCO, New Delhi/Itanagar/Guwahati for information please.
12. The GM(E/M), KPS, KHPS for necessary action.
13. All EICs, KHPS, NEEPCO,

19/8/23

(Dilip Kumar Saikia)
Head of Project
Kopili Hydro Power Station

नॉर्थ ईस्टर्न इलैक्ट्रिक पावर कॉरपोरेशन लि.
(भारत सरकार का उद्यम)
ISO 9001: 2015 NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED
ISO 14001: 2015 (A Government of India Enterprise)
ISO 45001: 2018 कोपिली जल-विद्युत संयंत्र / KOPILI HYDRO POWER STATION
संयंत्र प्रमुख का कार्यालय/ O/o THE HEAD OF PLANT

No. NEEPCO/KHPS/HOP/W-26/2023-24/ 345-354 Dated 02.09.2023

To,

1. The Member Secretary NERPC, CEA, NERPC Complex, Lapalang, P.O: Rynjah, Shillong=793006, mail: nerpc@ymail.com
2. The Executive Director, NERLDC, Grid Controller of India, scde@grid-india.in
3. The Managing Director AEGCL, Bijuli Bhawan, Guwahati -78100, mail: sldcassam@aegcl.co.in, managing.director@aegcl.co.in
4. The Managing Director APDCL Bijuli Bhawan, Guwahati -781001, mail: md.apdcl@apdcl.gov.in
5. The Director Technical, TSECL, Agartala- 799001, mail: sod.tsecl@gmail.com, tsecl_sldc@rediffmail.com,
6. The Director (Distribution), MeECL, Lumgingshai, Short Round Road Shillong- 793001, mail: acec.meecl-meg@nic.in
7. The Managing Director MSPDCL, Electricity Complex Keishampat, Imphal-795001, mail: md.mspdcl@gmail.com, sldcmanipur@gmail.com
8. The Chief Engineer (WE Zone), Department of Power, Govt. of Arunachal Pradesh, Itanagar-791111, mail: sldcitanagar@gmail.com
9. The Engineer-in-Chief (P&E), Department of Power, Govt. of Mizoram, Aizawal-796001. mail: sldc_mizoram@rediffmail.com,
10. The Chief Engineer(P), Department of Power, Govt of Nagaland, Kohima-797001, mail: cepower1@gmail.com, nagalandsldc@gmail.com.

Sub: Declaration of COD of Unit # 3 of 4X50 MW Kopili Power Station,KHPS, Umrongso, Assam (NEEPCO).

Ref: 1. Our letter No. NEEPCO/KHPS/HOP/W-26/2023-24/290-299 dated 19/08/2023
2. Our letter No. NEEPCO/KHPS/HOP/W-26/2023-24/313-322 dated 23.08.2023
3. Our letter No. NEEPCO/KHPS/HOP/W-26/2023-24/336-337 dated 24.08.2023
4. MOM regarding Trial Run of Kopili Unit-3 (50 MW) dtd. 01.09.2023
5. NERLDC Approval No: NERLDC/SOII/FTC/20/ 5171 dated 02.09.2023

Sirs,

With reference to the above, we are pleased to state that we, NORTH EASTERN ELECTRIC POWER CORPORATION LTD, has successfully completed the trial run of Unit-3 of installed capacity 50 MW of our 200 MW Kopili Power Station, KHPS for a continuous period of 12 hours w.e.f. 00:30 hrs of 02.09.2023 to 12:30 hrs of 02.09.2023, as per CERC regulation which has been duly accepted by Grid Controller of India Ltd. (NERLDC) vide letter dated 02-09-2023 referred at Sl. No. 5 above.

We, therefore, declare the COMMERCIAL OPERATION of Unit-3 of Kopili Power Station w.e.f. 00.00 hours of 03.09.2023. The certificate duly signed by our Competent Authority as required under CERC regulation 6.3 A (2) (iii) is enclosed herewith for kind reference.

नॉर्थ ईस्टर्न इलैक्ट्रिक पावर कॉरपोरेशन लि॰
(भारत सरकार का उद्यम)
NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED
(A Government of India Enterprise)
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ISO 14001: 2015
ISO 45001: 2018
कोपिली जल-विद्युत संयंत्र / KOPILI HYDRO POWER STATION
संयंत्र प्रमुख का कार्यालय/ O/o THE HEAD OF PLANT

We request your kind cooperation in this regard.

Thanking you,

Yours faithfully,

02/9/23

(Dilip Kumar Saikia)
Head of Plant
Kopili Hydro Power Station

NIO:
No. NEEPCO/KHPS/HOP/W-26/2023-24/ 355-367 Dated 02.09.2023

Copy to :

1. The CMD, NEEPCO, for kind information please.
2. The Director (Finance), NEEPCO, for kind information please.
3. The Director (Technical), NEEPCO, for kind information please.
4. The Director (Personnel), NEEPCO, for kind information please.
5. The ED(O&M), NEEPCO, for kind information please.
6. The ED (D&E), NEEPCO, for kind information please.
7. The ED (Fin), NEEPCO, for kind information please.
8. The CGM (Commercial), NEEPCO, for kind information please.
9. The CGM (CPM), NEEPCO, for kind information please.
10. The CGM (Fin), NEEPCO, for kind information please.
11. The Coordinator, NEEPCO, New Delhi/Itanagar/Guwahati for kind information please.
12. The GM(E/M), KPS, KHPS for necessary action please.
13. All EICs, KHPS, NEEPCO for information please.

02/9/23

(Dilip Kumar Saikia)
Head of Plant
Kopili Hydro Power Station

नॉर्थ ईस्टर्न इलैक्ट्रिक पावर कॉरपोरेशन लि.
(भारत सरकार का उद्यम)
NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED
(A Government of India Enterprise)
ISO 9001: 2015
ISO 14001: 2015
ISO 45001: 2018
कोपिली जल-विद्युत संयंत्र / KOPILI HYDRO POWER STATION
संयंत्र प्रमुख का कार्यालय/ O/o THE HEAD OF PLANT

No. NEEPCO/KHPS/HOP/W-26/2023-24/ 483 492 Dated 10.11.2023

To,

1. The Member Secretary NERPC, CEA, NERPC Complex, Lapalang, P.O: Rynjah, Shillong=793006, mail: nerpc@ymail.com
2. The Executive Director, NERLDC, Grid Controller of India, scde@grid-india.in
3. The Managing Director AEGCL, Bijuli Bhawan, Guwahati -78100, mail: sldcassam@aegcl.co.in, managing.director@aegcl.co.in
4. The Managing Director APDCL Bijuli Bhawan, Guwahati -781001, mail: md.apdcl@apdcl.gov.in
5. The Director Technical, TSECL, Agartala- 799001, mail: sod.tsecl@gmail.com, tsecl_sldc@rediffmail.com,
6. The Director (Distribution), MeECL, Lumgingshai, Short Round Road Shillong- 793001, mail: acec.meecl-meg@nic.in
7. The Managing Director MSPDCL, Electricity Complex Keishampat, Imphal-795001, mail: md.mspdcl@gmail.com, sldcmanipur@gmail.com
8. The Chief Engineer (WE Zone), Department of Power, Govt. of Arunachal Pradesh, Itanagar-791111, mail: sldcitanagar@gmail.com
9. The Engineer-in-Chief (P&E), Department of Power, Govt. of Mizoram, Aizawal-796001. mail: sldc_mizoram@rediffmail.com,
10. The Chief Engineer(P), Department of Power, Govt of Nagaland, Kohima-797001, mail: cepower1@gmail.com, nagalandsldc@gmail.com.

Sub: Declaration of COD of Unit # 2 of 4X50 MW Kopili Power Station, KHPS, Umrongso, Assam (NEEPCO)

Ref: 1. Our letter No. NEEPCO/KHPS/HOP/W-26/2023-24/411-420 dated 23.10.2023
2. Our letter No. NEEPCO/KHPS/HOP/W-26/2023-24/438-447 dated 31.10.2023
3. NERLDC Approval No: NERLDC/SO/FTC/20/ 5455 dated 10.11.2023

Sirs,

With reference to the above, we are pleased to state that we, NORTH EASTERN ELECTRIC POWER CORPORATION LTD, has successfully completed the trial run of Unit-2 of installed capacity 50 MW of our 200 MW Kopili Power Station, KHPS for a continuous period of 12 hours w.e.f. 20:00 hrs of 07.11.2023 to 09:45 hrs of 08.11.2023, as per CERC regulation which has been duly accepted by Grid Controller of India Ltd. (NERLDC) vide letter dated 10.11.2023 referred at Sl. No. 3 above.

We, therefore, want to declare the COMMERCIAL OPERATION of Unit-2 of Kopili Power Station w.e.f. **00.00 hours of 12.11.2023**. This intimation dated **10.11.2023** may please be treated as the communication to NERLDC for Scheduling of the generating unit from 00:00 hrs of 12.11.2023.

10/11/2023

We request your kind cooperation in this regard.

Thanking you,

Yours faithfully,

10/11/2023

A. J. BORDOLOI, GM (Tech), KHPS

(Dilip Kumar Saikia)
Head of Plant
Kopili Hydro Power Station
NEEPCO Ltd. Umrongso

NIO:
Memo No. NEEPCO/KHPS/HOP/W-26/2023-24/ **493-505** Dated 10.11.2023

Copy to :

1. The CMD, NEEPCO, for kind information please.
2. The Director (Finance), NEEPCO, for kind information please.
3. The Director (Technical), NEEPCO, for kind information please.
4. The Director (Personnel), NEEPCO, for kind information please.
5. The ED(O&M), NEEPCO, for kind information please.
6. The ED (D&E), NEEPCO, for kind information please.
7. The ED (Fin), NEEPCO, for kind information please.
8. The CGM (Commercial), NEEPCO, for kind information please.
9. The CGM (CPM), NEEPCO, for kind information please.
10. The CGM (Fin), NEEPCO, for kind information please.
11. The Coordinator, NEEPCO, New Delhi/Itanagar/Guwahati for kind information please.
12. The GM(E/M), KPS, KHPS for necessary action please.
13. All EICs, KHPS, NEEPCO for information please.

10/11/2023

A. J. BORDOLOI, GM (Tech), KHPS

(Dilip Kumar Saikia)
Head of Plant
Kopili Hydro Power Station

नॉर्थ ईस्टर्न इलैक्ट्रिक पावर कॉरपोरेशन लि.
(भारत सरकार का उद्यम)
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ISO 14001: 2015
ISO 45001: 2018
NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED
(A Government of India Enterprise)
कोपिली जल-विद्युत संयंत्र / KOPILI HYDRO POWER STATION
संयंत्र प्रमुख का कार्यालय/ O/o THE HEAD OF PLANT

No. NEEPCO/KHPS/HOP/W-26/2024-25/ **72-82** Dated 01.06.2024

To,

1. The Member Secretary NERPC, CEA, NERPC Complex, Lapalang, P.O: Rynjah, Shillong-793006, mail: nerpc@ymail.com ,
2. The Executive Director, NERLDC, Grid Controller of India, amareshmallick@grid-india.in
3. The Managing Director AEGCL, Bijuli Bhawan, Guwahati -781001, mail: sldcassam@aegcl.co.in,
4. The Managing Director APGCL, Bijuli Bhawan, Guwahati -781001, managing.director@aegcl.co.in
5. The Managing Director APDCL Bijuli Bhawan, Guwahati -781001, mail: md.apdcl@apdcl.gov.in , gmtrc@apdcl.org
6. The Director Technical, TSECL, Agartala- 799001, mail: sod.tsecl@gmail.com, tsecl_sldc@rediffmail.com,
7. The Managing Director MSPDCL, Electricity Complex Keishampat, Imphal-795001, mail: md.mspdcl@gmail.com, sldcmanipur@gmail.com
8. The Director (Distribution), MeECL, Lumjingshai, Short Round Road Shillong-793001, mail: acec.meecl-meg@nic.in
9. The Chief Engineer (WE Zone), Department of Power, Govt. of Arunachal Pradesh, Itanagar-791111, mail: sldcitanagar@gmail.com
10. The Engineer-in-Chief (P&E), Department of Power, Govt. of Mizoram, Aizawal-796001, mail: sldc_mizoram@rediffmail.com,
11. The Chief Engineer(P), Department of Power, Govt of Nagaland, Kohima-797001, mail: cepower1@gmail.com, nagalandsldc@gmail.com.

Sub: Declaration of COD of Unit # 1 of 4X50 MW Kopili Power Station, KHPS, Umrongso, Assam (NEEPCO)

Ref: 1. Our letter No. NEEPCO/KHPS/HOP/W-26/2024-25/40-49 dated 19.05.2024
2. NERLDC Approval No: NERLDC/MO/FTC/20/ 6312 dated 01.06.2024

Sirs,

With reference to the above, we are pleased to state that we, NORTH EASTERN ELECTRIC POWER CORPORATION LTD, has successfully completed the trial run of Unit-1 of installed capacity 50 MW of our 200 MW Kopili Power Station, KHPS for a continuous period of 12 hours w.e.f. 12:15 hrs of 28.05.2024 to 00:15 hrs of 29.05.2024, as per CERC regulation which has been duly accepted by Grid Controller of India Ltd. (NERLDC) vide letter dated 01.06.2024 referred at Sl. No. 2 above.

We, therefore, declare the COMMERCIAL OPERATION of Unit-1 of Kopili Power Station w.e.f. **00:00 hours of 03.06.2024 and intimation is given hereby to schedule the Unit-1 accordingly, as per IEGC 2023 Clause 27.2.**

Unit-I being the last unit to be commissioned of 4X50 MW Kopili Power Station, with declaration of COD of Kopili Unit-I, all the four units of Kopili Power Station has been commissioned successfully. Hence, this may be treated as Station COD of 4X50 MW Kopili Power Station.

We request your kind cooperation in this regard.

Thanking you,

Yours faithfully,

(Susanta Deka)
CGM (Tech) & HOP
Kopili Hydro Power Station

ANNEXURE - XV

NORTH EASTERN ELECTRIC POWER CORPORATION LTD

(A Government of India Enterprise)

A wholly owned subsidiary of NTPC Limited

KOPILI HYDRO POWER STATION (4X50 MW)
UMRANGSO, ASSAM



REVISED COST ESTIMATE
(MAY, 2024 Price Level)

INDEX

Sl.No	Particulars	Page No.
1	Write-up note on Time & Cost Over-Run:	
i	Background	1 - 4
ii	Analysis of Time Overrun	5
iii	Reasons of Time Overrun	6 - 13
iv	Analysis of Cost Overrun:	
	a) Civil & HM Work	14-23
	b) EM Works	23-27
	c) Audit & Accounts (Civil, HM & EM Works)	19
	d) Establishment (Civil, HM & EM Works)	27-28
	e) Receipt & Recoveries	28
	f) IDC & FC	28
	g) Conclusion	29
	h) Appendix-1: Schedule Chart	30-32
	i) Appendix-2: Delay Bar Chart	33
	j) Appendix-3	34-58
	k) Appendix-4	59-90
	l) Appendix-5	91-96
	m) Appendix-6	97-117
	n) Appendix-7	118-121
	o) Appendix-8	122-123
	p) Appendix-9	124-126
	q) Appendix-10	127-131
	r) Appendix-11	132-151
	s) Appendix-12	152-164
	t) Appendix-13	165-183
2.	Detail data of Cost Over-Run *(Refer separate sub-index)*	C1 to C220
3.	Certificates on Cost Over-Run	CC1 to CC10
4	Approved CEA Estimate at Jan'21 PL	CEA-1 to 4

Sub-Index for detail data of Cost over-run

Sl.No	Head	Particulars	Page No.
1		Abstract of Cost Total (Civil, H-M & E-M works)	C1
2		Abstract of cost (Civil & H-M work)	C2
3		Abstract of Cost (E-M Works)	C3
4		Civil & H-M Work Detail	
	A	Preliminary	C4-C10
	C	Works	C11-C14
	J	Power Plant Civil Works:	
		Abstract of Power Plant Civil Works	C15
		HM – Penstock & Steel In-liners in HRT	C16-C23
		HM - Penstock & Steel In-liners in HRT - **Escalation**	C24-C25
		HM - Gates	C26-C33
		Civil – HRT, Penstock & PH	C34-C93
		Civil – HRT, Penstock & PH - **Escalation**	C94
		Civil - HRT, Penstock & PH – **Extra Work** (APS)	C95 – C96
		Civil – Cost of Cement & Steel (APS)	C97-C99
		Civil – Additional work in HRT, Penstock & PH	C100
		Civil – Switch Yard along with Annexure	C101-C103
	K	Building	C104-C106
	M	Plantation	C107
	O	Miscellaneous	C108-C120
	P	Maintenance During Construction	C121- C129
	Q	Special Tools & Plants	C130-C131
	R	Communication	C132-C142
	X	Environment & Ecology	C143
	Y	Losses on Stock	C144
		Establishment Civil	C145-C147
5		**Electro-Mechanical (E-M) Work:**	
i		Abstract of E-M Work	C148-C149
ii		E-M: Preliminary – Annex (S1)	C150-C153
iii		Generating Plant & Auxiliaries	
		a) Generating Units & associated Accessories- Annex(S2)	C154-C177
		b) Auxiliary Electrical Equipment for Power Station- Annex(S3)	C178-C185
		c) Auxiliary Mechanical Equipment & Services for Power Station- Annex (S4)	C186-C191
		d) All erection & commissioning charges	C192-C193
iv		Switch Yard and Pothead Yard Equipment & Services- Annex(S5)	C194-C201
v		Contingencies	C202-C213

vi		Dismantling	C214-C215
vii		Tools & Plants	C216-C217
viii		Establishment E-M	C218
6		IDC & FC	C219-C220

1.0 BACKGROUND

1.1 The Kopili Hydro Power Station is located in Dima Hasao district of Assam. It is situated in Karst lime stone zone in the east of Jaintia Hills (Meghalaya) and west of North Cachar Hills (Assam) at a Longitude of 92°4' E and a Latitude of 25°32'. The project impounds a live storage of 156.6 Mcum by means of a 30 m high concrete gravity dam across the river Umrong for power generation. The water conductor system comprises a head race tunnel (HRT) of length 5473 m and diameter 4.6m, 2 nos. of penstocks of length 890 m and 2.7 m diameter each further bifurcating into two leading the waters to a surface power house having an installation of 4 Francis turbines with generating unit of 50 MW each operating under rated head of about 326.5m.

1.2 The project with installation of 4x50 MW has original design energy of 1034 MU. However, the design energy for the plant has been revised to 993.80 MU. All the units were commissioned in between 1988-1997 with the first two Units commissioned in 1988 while the unit #3 and unit #4 were commissioned in 1997.

1.3 However, acidity in the reservoir water had jeopardized the functioning of the Power Stations by damaging the vital under- water parts, cooling water pipes, penstocks & tubes etc. Geological Survey of India has identified that unscientific extraction of coal in the catchment area as the primary reason for acidity of the reservoir water. The complete flooding/mud/debris submergence of the 200 MW Kopili Hydro Power Station due to rupture of penstock-1 and burst opening of one manhole of penstock-2, in the early morning hours of 7th October, 2019 resulted in complete stoppage of power generation from the plant.

1.4 Subsequently, Restoration and Renovation & Modernisation of the plant along with all the common components/equipment viz Dam, HRT, Surge shaft, all gates, BFV, common plant auxiliaries, switch yard and all associated equipment etc were taken up.

1.5 Major scope of works taken up for Reconstruction, Renovation & Modernisation of the project, among others, includes the following;

A. Civil and Hydro-Mechanical works:

- Repairing of Radial Gate, Intake Gate including Stop log gate, Sluice gate
- Replacement of Penstock -1 and Penstock - 2
- Repair and Strengthening of Head Race Tunnel

- Civil works pertaining to Dam, HRT, Penstock, Power House, Tail Race and Switchyard
- Communication and enabling works.

B. Electrical Works:

- Repair/ Replacement (Including redesign) of Turbine - Generator Components, Main Inlet Valves and Auxiliaries
- Reconstruction of Switch Yard and all damaged components including Transmission network within Station
- Replacement of Generator Transformers (GTs),
- Replacement of control system, SCADA
- Replacement of both the BF valves at Valve house
- Reconstruction/Renovation of all Sub-system such as, SSB, UAB, cooling water system, drainage & dewatering system, LP compressed air system, emergency DG chargers, Station service transformer, Battery bank and chargers, Fire detection & protection system, HVAC, illumination etc.
- Miscellaneous Work

1.6 The Detailed Project Report (DPR) for RR&M with estimated project cost of Rs 870.76 Crore (Hard Cost) was submitted to CEA on 06.10.2020. The cost estimates in respect of Electro-Mechanical works was vetted by CEA on 22.03.21 vetted for Rs 391.11 Cr at Jan 2021 PL. Whereas, the cost estimates of Civil & Hydro-Mechanical works was vetted on 04.06.2021 for Rs 433.01 Cr at Jan 2021 PL. Later on, CEA vide letter F.No.CEA-EC-11-15(11)/2/2020-FCA Division conveyed vetting of the Capital Cost of RR&M for Rs. 878.09 Crores including IDC & FC for Rs 53.97 Crore at Jan 2021 PL.

1.7 The main works of Reconstruction, Renovation & Modernisation of the project have been executed through following major Contract packages viz. Civil, Hydro Mechanical and Electro Mechanical as below:

BACKGROUND NOTE ON TIME & COST OVERRUN OF RECONSTRUCTION, RENOVATION & MODERNISATION OF 4X50 MW KOPILI POWER STATION, UMRONGSO, ASSAM EXECUTED BY NEEPCO

Sl. No.	Name of Work	Agency	Date of agreement/ LOI	Scheduled Completion Date	Work Value (Rs in Cr)
1	Civil works pertaining to Restoration of Kopili Hydro Power Station	M/s APS Hydro Pvt Ltd., Delhi	05.01.21	14(fourteen) months from date of LOI (31.12.2020) i.e. **28.02.2022**	64.76
2	Design, Fabrication, Supply, Erection, Testing & Commissioning of Penstock and Steel in Liners in Umrong System of Kopili Hydro Electric Project (275MW), Assam	M/S PES Engineers Pvt Ltd.	02.11.20	18(eighteen) months from date of LOI (02.11.2020) i.e. **01.05.2022**	254.20
3	Detailed Design & Engineering, Manufacture, Testing at Works, Despatch, Inland Transportation including Freight and Insurance, Delivery to Project Site, ...Erection, Testing and Commissioning at site of all Electro-Mechanical Equipment to be installed in the Power House of Kopili P.S.	M/s Andritz Hydro Pvt Ltd	07-04-21	21(twenty one) months from date of LOI (03.04.2021) i.e. **02.01.2023**	135.43
4	Design, Engineering, Manufacture, shop testing, transportation, Delivery and Supervision of complete erection, testing and	M/s BHEL	20-01-21	17(seventeen) months from date of LOI (17.12.2020)	30.23

Sl. No.	Name of Work	Agency	Date of agreement/ LOI	Scheduled Completion Date	Work Value (Rs in Cr)
	commissioning of 5 Nos. (4+1 spare) 63 MVA ONAF/OFAF cooled 11/220 KV, 3-PHASE Generator Step up Transformers.			i.e. **16.05.2022**	
5	MIV	M/s Voith Hydro Pvt Ltd.	02-12-20	01-12-21	18.12
6	BF Valve	M/s BHEL	22-12-20	12(twelve) months from date of LOI (15.12.2020) i.e. **14.12.2021**	13.52
7	Under Water Parts	M/s Andritz Hydro Pvt Ltd	23-12-21	12(twelve) months from date of LOI (23.12.2021) i.e. **22-12-22**	34.14
8	Fire Fighting	M/s Sterling & Wilson	16-12-21	15-04-22	27.85
9	Repair and or Rebuild and or Replacement, Including Design, Supply, Fabrication, Erection, Testing and Commissioning of Hydro-Mechanical components	M/S PES Engineers Pvt Ltd.	30.09.2021	8(Eight) months from date of handing over the site.	17.12

Sl. No.	Name of Work	Agency	Date of agreement/ LOI	Scheduled Completion Date	Work Value (Rs in Cr)
	Umrong Water Conductor System Under Re-construction, Renovation & Modernization of KHEP (4X50 MW), Dist- Dima Hasao, Assam				
10	Storage, Material Handling, Erection & Commissioning of EM Equipment.	M/S PES Engineers Pvt Ltd.	16.09.2021	18 (Eighteen) Months from date of LOI (16.09.2021) i.e. **15.03.2023**	37.43

1.8 The Unit- IV, III, II & I of the project have been commissioned and under commercial operation since 20-08-2023, 03-09-2023, 12-11-2023 and 03-06-2024 respectively.

1.9 The Revised Cost Estimate of Reconstruction, Renovation & Modernisation has been updated at May'2024 PL for a total project cost involvement of Rs 1201.66 Crore Including IDC &FC of Rs.79.40 Cr.

2.0 ANALYSIS OF TIME OVERRUN.

A time overrun of 13.2 months with respect to CEA approval. However, the time overrun has happened with a minimum period of 6.2 months for Unit-3 and with a maximum of 13.2 months for Unit-1.

Zero Date	Original Commissioning Schedule	Sanctioned Construction Period

01.11.2019	30.04.2023	42 months

Original COD	Actual COD	Actual Construction Period	Time Overrun w.r.to COD (in months)
Unit-1: 30.04.2023	03.06.2024	01.11.2019 to 03.06.2024	13.2
Unit-2: 31.03.2023	12.11.2023	01.11.2019 to 12.11.2023	7.5
Unit-3: 28.02.2023	03.09.2023	01.11.2019 to 03.09.2023	6.2
Unit-4: 31.01.2023	20.08.2023	01.11.2019 to 20.08.2023	6.7
Station COD: 03.06.2024		**55.2 months**	**13.2 months**

2.1 Reasons for Time Overrun:

Sl. No.	Reasons of delays	Start Date	End Date	Period of hindrance (in month)	Delay considered in Critical Path	
1	Nationwide lockdown due to Covid-19 pandemic	24-03-20	31-05-20	2.3	2.3	All work fronts were adversely affected by Covid-19 pandemic and its subsequent restrictions imposed on movement of men & machineries, affecting supply
2	Night curfew and restrictions imposed by district authorities on account of Covid-19 pandemic (2nd Wave)	01-05-21	30-06-21	2	1	

3	Covid affect: Delay in supply of major Generator equipment.	01-06-21	31-08-21	3	2	chain. As such, net delay of 6 months has been considered in line with the measures announced by the Govt. vide DoE (PP Division), MoF vide OM No F-18/04/2020-PPD dtd 13-05-2020 which include a six-month work extension for projects under Force Majeure Clause to offer some relief to government contractors whose work was hit by Covid-19 lockdown.
4	Covid affect: Delay in supply of BF valves.	14-12-21	21-11-22	11.3	0.4	
5	Assam Legislative Assembly election, 2021	01-04-21	08-04-21	0.3	0.3	Manpower engaged by package contractors had proceeded to their respective native places to cast their vote in the Assembly election held in Assam on 01-04-2021. Moreover, most of the NEEPCO officials were also deployed for election duty.
6	Loose fall in Adit-II due to poor geology	10-09-21	10-10-21	1	1	Due to loose fall encountered during the unplugging of

						the Adit-II, all activities related to Hydro Mechanical works inside HRT got affected.
7	Disruption in construction power supply due to Inundation of Khandong Power station caused by unprecedented flood.	26-03-22	31-03-22	0.2	0.2	Due to cloud burst that had occurred on 26th March 2022, Khandong Power station was inundated leading to disruption in construction power supply all work fronts affecting the progress of works.
8	Modification in refurbishment plan of 3 nos. Bifurcation in HPT of Umrong WCS as per suggestion of Expert Consultant.	18-02-23	14-04-23	1.8	0.3	Additional time was required for execution of the extra work - Repair/Refurbishment of bifurcations at U/S & D/S of Valve House through weld build-up prior to cladding due to highly corroded/pitted & damaged condition in that areas.
9	Surprises encountered in Unit-I resulting delay in erection of turbine & generator components of Unit-I	24-12-22	07-09-23	8.5	5.7	During weld build-up of spiral refurbishment based on RLA report, high level of deterioration (a through hole of 5 mm) was observed in spiral case in two segments W17-W18. Therefore, re-checking thickness

						in various segments of the spiral case through phase array mapping, and refurbishment was carried out.
					Total Delay (Months)	**13.2**

The above-mentioned hindrances have affected the critical activities of the project during execution. The reasons responsible for delaying activities falling on critical path are explained as under.

2.2 Covid-19 pandemic:

On account of Covid-19 outbreak followed by subsequent national lockdown from 24.03.2020, site works were to be put on hold and could be partially resumed only from 22.04.2020 onwards on obtaining permission from concerned authority. Construction activities continued with contractors following COVID-19 protocol circulated from time to time by the Govt of India as well as by the respective state Govt. on public health guidelines – such as social distancing and self-isolation – but progress was inevitably slower.

On the other hand, some project officials and the workers of the contractor who had moved from the project site on leave or on official duty prior to lockdown have been stranded at different locations and could not report in time in view of the restrictions placed on the movement of manpower, goods & services on account of the lockdown situation. Construction materials supply chains were severely affected by COVID-19 pandemic as the suppliers were unable to keep up with demand for the vast quantities of construction and other materials during construction due to production being suspended, staff shortages and restrictions on movement.

Further, due to Covid-19 pandemic there was sudden rise in the demand of oxygen gas and procurement was restricted by Govt. Authorities. As such, inadequate supply of Industrial Oxygen was affecting site activities and in most of the cases was therefore forced to stop & caused delay in execution of work.

Night curfew and restrictions imposed by district authorities:

The country wide Covid-19 pandemic played havoc with construction activities throughout the Country including our site. Movement of vehicles were totally banned

in the night time. All Inter-District transport service and movement of people were suspended during night time. Night time restriction hampered the night shift duty and other logistic related work, Standard operating procedures were enforced & night curfew imposed by Authorities.

Covid affects:

(i) **Delay in supply of SS Cladded steel plates:**

Main cause of delay in transporting cladded steel plates meant for Penstock from Japan was due to disruption in shipping line to load the cargo in many ports prior to loading of material at the origin port due to covid 19 pandemic.

(ii) **Delay in AHPL supplied major turbine & generator equipment (High grade steel from the Europe) - EM Package**

Post Covid, there was huge shortage & capacity constraints of electrical grade steel raw materials imported from Europe. Further, additional time was taken due to transit time of vessel sailing from Europe to India. Aforementioned scarcity of material and logistic issue caused and overall delay of 03 month for sourcing the material from Europe. The hindrances due to these had affected the project schedule.

The impact of force majeure due to which Andritz team couldn't travel to site for performing reverse engineering for designing equipment as per contract clause.

All available drawings were lost during complete inundation of Kopili Power House. All four BHEL supplied Machines were presumed to be identical, later during reverse engineering it was found that machines are nonidentical. Additional time required for resolving issues.

ii) Delay in BHEL supplied BF Valve - EM Package

- Items get delayed due to covid & post covid countrywide which affected manufacturing and procurement of raw material.
- Casting activities of BF valve door delayed due to Russia – Ukraine war creating shortage of chromium which is key ingredient of SS casting

2.3 Assembly election in Assam.

Assembly election in Assam was held on 01-04-2021 & the manpower engaged by package contractors had proceeded to their respective native places to cast their

vote. Moreover, NEEPCO employees were deployed in the election duty. As such, no work could be undertaken w.e.f. 01-04-2021 to 08-04-2021.

2.4 Loose fall in Adit-II due to poor geology.

Various activities inside the HRT required to be carried out by accessing working sites through the Adit-II, but all activities related to Hydro Mechanical works got affected due to geological surprises like loose fall occurred during the unplugging of the Adit-II.

2.5 Disruption in construction power supply.

Subsequent to Khandong and Khandong stage-II power stations inundation on 26th March 2022 due to unexpected flood the switchyard and 33KV supply system became inoperative resulting in total blackout in the entire NEEPCO colony & work fronts. Arrangement of additional power connection on emergency basis was made from APDCL and power supply could be restored on 01-04-22 resulting loss in time of about one week.

2.6 Modification in refurbishment plan of 3 nos. Bifurcations in HPT of Umrong WCS.

While gouging for welding started, corrosion/pitting & damages were detected in the old steel base plate at the upstream of valve House & Upstream of MIV of Penstock-1 & 2. As per suggestion of the Expert Consultant, suitable NDT was done to ascertain the extent of damage and accordingly weld build-up were taken up to fill up the pitted areas with welding after removing the corroded metal.

2.7 Surprises in Unit One spiral Casing: EM Package

Initially, Spiral refurbishment was done based on RLA report through Ultrasonic Thickness mapping. But during weld build-up, high level deterioration was observed in spiral case in its two segments W17-W18. The deterioration level is such that a through hole of diameter approx. 5mm has formed on the spiral surface as soon as the welding electrode touches it. As such, re-checking the thickness of the whole spiral through complete phase array thickness mapping was carried out and based on report, subsequent repair was carried out as per suggestion of experts.

3.0 ANALYSIS OF COST OVER RUN:

The cost overrun of the project has been carried out with respect to CEA approved cost at Jan'21 price level as shown below:

(In Rs. Crore)

Item Description	CEA Approved Cost at Jan'21 PL	Revised Cost Estimate at May'24 PL			Variation w.r.t to CEA vetted cost
		Expenditure as on May'24	Committed Liabilities	Total Cost	
Civil and HM Works	401.08	540.29	15.89	556.18	155.10
EM Works	370.12	442.73	27.00	469.73	99.61
Establishment Cost	52.92	114.93	0.00	114.93	62.01
Hard Cost	**824.12**	**1097.95**	**42.89**	**1140.84**	**316.72**
IDC &FC	53.97	79.74	0.00	79.74	25.77
Insurance cost against residual Asset	0.00	15.47	0.00	15.47	15.47
Total	**878.09**	**1193.16**	**42.89**	**1236.05**	**357.96**
(-) Less Receipt: (a) Earning from Infirm power Rs. 4.60 Crs.				-34.39	-34.39
Net Project Cost				**1201.66**	**323.57**
Escalation included in	0	82.94		-	(82.94)
Cost Overrun					240.63

The breakup of variance of work portion of Civil & HM work (**Rs. 155.10 Crore**.) and EM work (**Rs. 99.61 Crore**.) excluding Establishment cost under different heads is given as under: -

Sl. No	Description of cost overrun	Civil & HM work	EM work	Total (Rs Crs.)	%age w.r.t total
1	Change in Scope/ Design	0.00	3.40	3.40	1.33%
2	Under / Over provision	26.10	20.62	46.72	18.34%
3	Addition/Deletion	45.37	36.43	81.8	32.11%

	Sub Total	71.47	60.45	131.92	51.79%
4	Price Escalation	59.35	23.59	82.94	32.56%
5	Statutory Levies (Service Tax, VAT, Cess, GST...)	24.28	15.57	39.85	15.65%
	Sub Total	83.62	39.16	122.79	48.21%
	Total	**155.10**	**99.61**	**254.71**	100.00%

The Head wise abstract statement of CEA approved cost, RCE cost and cost variation thereon is given below:

(In Rs. Crore)

Heads	**CEA Cost at Jan'21 PL**	**RCE (May'24 PL)**	**Variation**
I- Works			
A-Preliminary	7.98	5.34	-2.64
B-Land	0	0	0
C-Civil Works	2.85	2.27	-0.58
J-Power Plant Civil Works	344.27	483.72	139.45
K-Building	2.48	1.32	-1.16
M-Plantation	0.80	0	-0.8
O-Miscellaneous	6.0	45.17	39.17
P-Maintenance	3.49	0.84	-2.65
Q- Special T & P	1.00	0.23	-0.77
R- Communication	28.84	17.28	-11.55
X-Environment & Ecology	0.50	0	-0.5
Y-Losses on stock	0.87	0	-0.87
Total of I- Works	399.08	556.17	157.09
II Establishment	31.93	63.45	31.52
Total Direct Charges	**431.01**	**619.62**	**188.61**
INDIRECT CHARGES			
(b) Audit & Accounts Charges	1.99	0	-1.99
Total Indirect Charges	1.99	0	-1.99

Heads	CEA Cost at Jan'21 PL	RCE (May'24 PL)	Variation
A. TOTAL OF CIVIL and HM WORKS	**433.01**	**619.62**	**186.62**
EM Works			
EM Works	370.12	469.74	99.62
Establishment Charges	20.99	51.48	30.49
B. TOTAL OF EM WORKS	**391.11**	**521.22**	**130.11**
C. Insurance cost against Residual Assets of the Plant	-	15.47	15.47
TOTAL (A+B+C)	**824.12**	**1156.31**	**332.19**
IDC &FC	53.97	79.74	25.77
Total Cost of the Plant	**878.09**	**1236.05**	**357.96**
(-) Less, (a) Sale from Infirm power Rs. 4.60 Crs. (b) Sale of Scrape Rs. 29.79 Crs.		**-34.39**	**-34.39**
Net Total	**878.09**	**1201.66**	**323.57**
Escalation included in above	0	82.94	(82.94)
Cost overrun			240.63

The above cost of Rs 1201.66 Crore includes price escalation of Rs 82.94 Crore. The Project has experienced a cost overrun of Rs 240.63 Cr. (27.40 %).

The head wise reasons of cost overrun are described in brief as below:

3.1 A - Preliminary: (Variation - Rs.263.87 Lakh)

As per CEA, the total cost approved under preliminary works is Rs. 798.17 lakhs. This cost includes mainly for the rescue operation, expenditure on survey & investigation, topographical survey works, geophysical survey, investigation for concrete, Pre-operative expenses, Consultancy charges etc.

As on date, the project has incurred Rs 534.30 Lakhs under this head. Further an amount of Rs. 725 lakhs have been incurred for Building Information Modelling (BIM) for assessing the healthiness of the Power House Building under EM contract.

3.2 B- Land:

Not applicable.

3.3 C-Works: (HM equipment of Umrong Dam; Variation (-) 57.53 lakhs)

The project components under this includes - Umrong Dam Spillway Radial Gate, Under Sluice Gate and Under Sluice Stoplog Gate. As per CEA approved cost, the total cost of C-works was Rs. 285.0 Lakh. The actual cost incurred as on date under C-works is Rs. 227.47 lakhs and there is a provision of Rs 25.03 Lakhs against committed liabilities/balance works. Hence, total cost under this head stands at Rs 227.47 Lakhs with negative cost variation of Rs. 57.53 Lakhs due to the following reasons:

i) **Addition/Deletion (-Rs.83.30 Lakhs):** Some items such as Supply, fabrication and installation of Adit Gate of Size 2 m X 2.0 m including imbedded parts, under sluice gate, 2nd stage embedded parts of under sluice stoplogs were not required to be executed due to necessity of diverting the river flow through under sluices during the RR&M works of Radial Gates. Further, the Adit gates were to be plugged with concrete instead of its refurbishment whose cost has been considered in J-civil works. The net decrease in cost under this head is Rs. 83.30 Lakhs.

ii) **Inadequate / Over Provision (Rs. 34.54 Lakhs):** The cost had increased mainly due to inadequate provision in quantity against few items such as Sand/Grit Blasting and Painting of Gate assembly & Painting of RDH and hoist bridge.

iii) **Statutory Levies (-Rs.8.78 Lakhs):** The decrease in cost under this head is due to non-execution of Adit Gate, Under-Sluice Gate & 2nd stage embedded parts of Under-sluice stoplogs works as explained above.

3.4 J-Works

The project components under this head are Head Race Tunnel, Adits, High Pressure Tunnel, Tail Race channel, Switchyard and HM works. The approved CEA cost under this head is Rs. 34426.56 lakhs. The actual cost incurred as on date under J-works is Rs.46,980.57 lakhs and there is a provision of Rs 1,391.22 Lakhs against committed liabilities. Hence, the total cost incurred is Rs 48,371.78 lakhs with a cost overrun of Rs 13,945.22 lakhs. The reasons of variations are as below:

i) **Price escalation (Rs 5,934.36 lakhs):** There is an increase of Rs 5,934.36 lakhs due to price escalation. The variation is due to escalation on quoted rates of J-Power Plant Civil Works. The price escalation has been worked out at May'24 price level, taking the provisional values of applicable indices for the month of April'24 & May'24.

ii) **Scope / design change:** Nil.

iii) **Inadequate/ Over Provision (Rs. 687.03 lakhs):** The increase in cost of Rs 687.03 lakhs mainly due to the following reasons:

a) Increase in the quantity of the Radiographic testing (d/s of AB-1 to u/s of AB-8 including reducer beyond D-line) & Ultrasonic testing of the welded joints of the ferrules of Penstock (In HRT and Between u/s of AB-8 to D-Line): Rs.121.88 Lakhs (HM WORKS)

b) Dismantling of Designated Portion of existing Anchor Blocks- Quantity deviated, due to change in methodology for dismantling, as finalised by the appointed Independent Engineer by MoP. The total deviation amount for the item is Rs. 745.03 Lakhs (CIVIL WORKS).

c) Cost of Cement & Steel- The increase in cost is due to the corresponding increase in executed quantity of PCC, RCC & HYSD Reinforcement. The total deviation amount for the item is Rs. 287.01 Lakhs (CIVIL WORKS)

d) PCC Along Penstock Alignment- Excess quantity is necessitated to be executed in backfilling works between Anchor Block 7 to Anchor Block 8 as per site condition. The total deviation amount for the item is Rs. 198.114 Lakhs (CIVIL WORKS)

e) Repairing of Existing Damaged Concrete- Owing to site conditions, the executed quantities of epoxy mortar, epoxy grout etc. are more due to extensive damage of concrete surface in HRT. The total deviation amount for the items under this head is Rs. 182.52 Lakhs (CIVIL WORKS)

f) Application of Epoxy resin based bonding agent- Excess quantity has to be executed before executing "HRT resurfacing works using cementitious mortar conforming to BS EN 1503-3 R4 with compatible bonding agent" as per requirement of Sika Applicator. The total deviation amount for the Item is Rs. 120.281 Lakhs (CIVIL WORKS) *(Annexure J.iii.f, softcopy available in the folder "Background with annexure"))*

g) Boulder laid in wire crates- Excess quantity executed in bank protection works downstream of Tail Race Channel. The total deviation amount for the Item is Rs. 94.062 Lakhs (CIVIL WORKS)

h) Over provision in the quantity of Reinforced Cement Concrete in Saddle Supports: The total negative deviation amount for the Item is (-) Rs. 108.79 Lakhs (CIVIL WORKS)

iv) **Addition/Deletion (Rs 5187.63 lakhs):** There is an increase of Rs. 5,187.63 lakhs due to necessity of execution of the following Analogous & Extra items as per site requirement-

I. Civil Works

a) Removal of Steel Liners from Anchor Block- Work executed as Analogous item due to absence of specific Item of work in BOQ. Total Financial involvement is Rs. 51.28 Lakhs

b) Cleaning of penstock corridor by manual means- Work executed for manual dental cleaning of penstock alignment surface before taking up PCC works. Total Financial involvement is Rs. 64.24 Lakhs

c) Resurfacing of Invert of Umrong HRT using cementitious mortar- Work executed as Extra Item for repairing of invert of HRT, due to absence of specific item in BOQ. Total Financial involvement is Rs. 670.91 Lakhs

d) Dismantling/cutting of concrete at Adit-II Plug, Saddle Supports, Service bay entrance, GT Yard- Work executed for dismantling of concrete at various location using heavy duty cutter, to avoid damage to adjoining structures & due to site accessibility issues. Total Financial involvement is Rs. 124.20 Lakhs

e) Dismantling of concrete for erection of Thrust Collar- Work executed for dismantling of existing concrete at D-line of Powerhouse for erection of Thrust Collar. Total Financial involvement is Rs. 145.10 Lakhs.

f) Dismantling of concrete using core cutting machine- Work executed for dismantling of concrete at various floors of Powerhouse as per site requirements and drawings issued by D&E wing. Total Financial involvement is Rs. 324.56 Lakhs.

g) Dismantling of concrete at Tail Race Channel- Work executed for dismantling of existing concrete at Tail Race Channel, for erection of new

TRC gate hoisting arrangement. Total Financial involvement is Rs. 12.75 Lakhs.

h) Supplying and Application of chemical HILTI-RE 500 V4/500- Work executed for chemical anchoring of Draft Tube and PRV Gate Rope Drum Hoisting Foundation at DT Deck of powerhouse. Total Financial involvement is Rs. 52.26 Lakhs.

i) Additional works- Cable trench cover, interior furniture works, construction of spur, weigh bridge, aluminium & railing works, penal room, cut-outs in pH, roof steel structure in valve house building etc. These works are necessitated to be executed but not in CEA estimate. Total Financial involvement is Rs. 624.85 Lakhs

j) **Addition in S/ Yard: (Rs.10.59 Lakhs)**: Positive variation has occurred due to mismatch in summation of items under Switchyard civil works in CEA approved cost. The item no. 8 & 9 were observed to be left out in the final calculation in CEA approved cost.

II. *HM Works*

The increase in amount under the head of "Addition/Deletion" is due to execution of the following main works beyond CEA vetted cost.

Sl. No	Additional work	Amount (Rs in Lakh)
1	Ultrasonic Testing on trash rack panels of Umrong Intake	0.96
2	Dewatering of temporary pool u/s of Umrong Intake to facilitate repair works of HM components of Umrong System	36.82
3	Design, Fabrication, Supply, Installation, testing and commissioning of Stainless-steel liner in 2 No. of Under sluice Stoplog gate groove	17.78

4	Chemical anchoring of foundation bolts of base plate for erection of columns for TRC Rope Drum Hoist using Injectable Epoxy Mortar	13.45
5	Eddy Current Array Testing of all joints	159.70
6	Steel In-liner in the vicinity of Adit-III (Ch. 4035 to 4135 m) including provision of grout holes & plugging	1181.35
7	S.S liner at Adit-I, II & III	767.94
8	Dewatering works in the tunnel for the steel-in-liner in Umrong system of KHPS at Adit-I, II, III & IV	180.22
9	Refurbishment/Weld Build-up of 3(Three) nos of Bifurcation VH, Unit-1,2 & Unit-3&4 of KHPS	304.85

vi) Statutory Levies (Rs 2,125.62 Lakhs): The increase in cost is due to payment towards GST etc.

3.5 K-Building: (Variation: (-) Rs.115.88 Lakhs.): The provisions under this head covers the cost towards dormitory, Rooms Buildings etc. required during the construction phase of RR&M works. The CEA cost for this work was Rs. 248.06 lakhs. Actual cost incurred as on date is Rs.132.18 lakhs. Hence, total cost under this head is Rs 132.18 lakhs with negative cost overrun of Rs. 115.88 Lakhs on following heads.

i. **Inadequate/ Over Provision (-) Rs. 98.20 lakhs):** The decrease in cost of Rs 98.20 lakhs mainly due to non-construction of Assam type building which was envisaged in approved cost.

ii. **Statutory Levies (-) Rs 17.68 Lakhs**): The decrease in levies is due to negative variation under K-building head.

3.6 M-Plantation (Variation: (-) Rs 80.00 Lakhs): This head covers plantation program, garden, parks and lawns etc. The total cost provisioned in CEA under this head was Rs. 80 lakhs but no expenditure was incurred against the sub-head as on COD.

3.7 O-Miscellaneous: (Variation Rs 3916.81 Lakhs)

The provisions under this head cover the capital cost & maintenance of Water supply Sewage disposal and drainage works, Recreation, Medical, Firefighting equipment, Inspection vehicles, School bus, pay van visit of dignitaries Welfare works etc.

Total cost provision kept under the head O-Miscellaneous in CEA was Rs.600.00 Lakh on lumpsum basis. The expenditure under this head as on date is Rs. 4416.94 Lakh and there is a provision of Rs 99.88 Lakh as committed liabilities against operation of departmental equipment. Therefore, total cost under this head is Rs 4516.81 Lakhs. Hence, there is an increase of Rs. 3916.81 Lakhs from CEA approved cost under this head. The main reasons are under estimation in approved cost estimate against the works - due to security arrangement (Rs.758.57 Lakhs), construction power and its R&M (Rs. 1971.27 Lakhs), R&M of DG Sets (Rs.615.49 Lakhs), hired vehicles charges (Rs.411.26 Lakhs) and other miscellaneous works under this head.

3.8 **P-Maintenance During Construction (Variation (-) Rs. 265.49 Lakh):** The maintenance of all the works during the execution of the project under C, J & K are accounted under this head and is kept as 1% of C, J&K in CEA approved estimate. But, an amount of Rs 84.11 lakhs was incurred as on COD with a negative variation of Rs. 265.49 Lakh with respect to approve cost under this head.

3.9 **Q-Special Tools & Plant (Variation (-) Rs. 77.39 Lakhs):** This head deals with the special equipment needed for the project such as Drilling & Grouting equipment, Transport, Compaction, Electrical equipment, Construction Plant & Earth Moving equipment and other miscellaneous equipment. The total expenditure incurred under this head as on COD is Rs. 22.61 Lakhs. Hence, the total negative variation under this head is Rs.77.39 Lakhs. The decrease in cost is mainly due over provision in the CEA which is kept on lumpsum basis.

4.0 **R-Communication: (Variation - Rs.1155.46 Lakhs)**

The cost incurred for construction of main approach roads, quarry roads, temporary or permanent, maintenance of roads, Construction of Protection works along Powerhouse Approach Road, bridges required for the project are considered under this head. The total cost provisioned for this head in CEA was Rs. 2883.66 Lakhs. The cost incurred as on date is Rs. 1657.60 Lakhs. In addition, there is a provision of Rs. 70.60 Lakh as committed liabilities like construction of road. Hence, the total cost under this head is Rs. 1728.20 Lakh which is within the cost sanctioned by CEA under

this head. The negative variation of Rs. 1155.46 Lakhs has occurred due to the reasons as below:

i) **Addition/Deletion (-) Rs. 447.58 Lakhs):** The scope for construction of bridges (3 nos.) amounting Rs. 462.25 lakhs as envisaged in the CEA approved estimate are no longer required to be constructed for commissioning of the project.

ii) **Inadequate / Over Provision (-) Rs.531.62 Lakhs):** The cost had decreased mainly due to over provision against items such as Repairing of damaged road from RCC bridge at Kopili PH Site to Junction point of 29 km (Ch. 0.00m to Ch. 7060.00m, Length 7.06 km) and Reconstruction work of Kopili PH - 8 kilo Road (Ch: 0.0 km to Ch.12.0 km of Length 12km). The net decrease in cost under this head is Rs. 531.62 Lakhs. Further, there is over provision for protection work along the approach to the power house in CEA approved estimate.

iii) **Statutory Levies (-) Rs.176.26 Lakhs:** Negative variation is due to decrease in the scope of executed work.

5.0 **X- Environment & Ecology (Variation: (-) Rs. 50.00 Lakhs):** This head covers the cost incurred under the items like compensatory afforestation, catchment area treatment, reservoir rim treatment, fisheries development, environment monitoring etc. However, no expenditure was incurred under this head as on COD.

6.0 **Y – Losses on Stock: Variation (-) Rs 87.4 Lakhs**

No losses on stock occurred.

7.0 **Audit and Account charges: Variation (-) Rs. 199.54 Lakhs.)**

The CEA approved amount is Rs.199.54 Lakhs. But, no expenditure has been incurred in this head.

8.0 **Electro-Mechanical (EM) Works: Total variation of Rs 13608.75 Lakhs.**

A. **Annex S (1) – Preliminary:** There is an increase of Rs. 1100.92 Lakhs under this due to the following reasons:

a) The project cost has increased by Rs. 49.16 Lakhs due to price escalation of some items as per the contract agreement for Electro-Mechanical works.

b) An additional cost of Rs. 1051.77 Lakhs has been incurred for carrying out additional new works/items, which are listed below.

After the inundation of the power house, for carrying out the renovation of the Power house additional studies were to be carried out to assess the healthiness of the Power House building and embedded parts prior to proceeding and also during the course of the renovation works. These has also led to increase in the project cost. Few of the studies carried out are as follows:

i. Building Information Modelling (BIM) for assessing the healthiness of the Power House Building (Rs 725 L)

ii. Hydraulic Thrust calculation due to missing information and non-identical old units (Rs 70.3 L)

iii. Additional effort made in Unit-I for interfacing of modified design of runner coupling, turbine shaft design (Rs 210.78L)

iv. Computational Fluid Dynamic (CFD) Study of Water Conductor System (WCS) along with Underwater Parts (Rs 95 L)

v. Health assessment of spiral casing (Rs 26 L)

vi. Residual Life Assessment (RLA) Studies of Underwater Parts (Rs 40.64 L)

vii. Thickness measurement of Spiral casing in Unit IV, III and II (Rs 16.90 L)

viii. Thickness Measurement of Spiral Casing by PAUT of Unit 1 (Rs 11.5 L)

ix. Laser Scanning and development of as built drawing of 4 nos. of DT (Rs 16.44 L)

x. Integrity Testing of the embedded and exposed parts of Spiral Casing (Rs 15.68 L)

Additionally, consultancy services were also availed for the following which also led to increase in the project cost:

xi. Consultancy services for preparation and providing of detailed construction drawing of 220 kV D/C DD Type Tower with pile foundation for Wind Zone-V (Rs 25.96 L)

xii. Turbine design engineering - specialist service for essential input for refurbishment of underwater parts (Rs 34.4 L)

xiii. Project Engineering and Interface Management Service- for Reconstruction, R&M of Kopili Power Plant (Rs 46 L)

xiv. Further, GI portable cabin were procured and erected at site for accommodation of vendor's engineers/ supervisor's so that the travel time from to site could be minimized and works could be expediated (Rs 38.63 L)

B. **Annex – S (2) - Generating Units and Associated Accessories**: There is an overall increase of Rs. 502.08 Lakhs in this head due to the following reasons:

a) The project cost has increased by Rs. 1126.07 Lakhs due to price escalation of some items as per the contract agreement for Electro-Mechanical works.

b) Despite over-provision on a few items, there is an overall under-provision of Rs. 398.41 Lakhs for Main Generator Package (Rs 885.27 L)

c) Despite adding the following main items/works, there is an overall decrease of Rs. 1022.39 Lakhs due to the deletion of certain items listed below.

i. Turbine Pit Covers (Rs 32.28 L)

ii. Cyclone Separator and associated accessories (Rs 29.25L)

iii. Refurbishment of eroded draft tube (Rs 179.99 L)

iv. Refurbishment of drain boxes inside Draft tube (Rs 16.57 L)

v. Modification of Penstock drain line (Rs 80 L)

vi. Weld build up and machining of spiral case inlet flange area of all 4 units of Kopili Power Station (Rs 97 L)

vii. Procurement of SS seamless pipes with accessories for runner balancing (Rs 46.15 L), Cooling water system (Rs 70.35 L), Drainage and dewatering system (Rs 61.14 L)

viii. Procurement of Auxiliary Transformer cubicle and Support Structure for Isolated Phase Bus Duct (Rs 64.34 L)

ix. Media connectivity for remote operation of units (Rs 50 L)

x. There is a decrease of (-) Rs 752.52 L due to the deletion of Generator coolers, as they were part of the Generator Complete Assembly.

Additionally, there is a decrease of (-) Rs 1007.36 L due to the deletion of a few monitoring systems.

C. **Annex - S (3) - Auxiliary electrical equipment for Power Station:** There is an overall increase of Rs. 1789.55 Lakhs in this head due to the following reasons:

a) The project cost has increased by Rs. 967.76 Lakhs due to price escalation on certain items as per the contract agreement for Electro-Mechanical works.

b) There is an increase of Rs. 340 Lakhs in the project cost due to upgrading the Generator Transformer rating from 63 MVA to 65 MVA and replacing Oil Impregnated Paper (OIP) Bushings with Resin Impregnated Paper (RIP) bushings.

c) There is an overall increase of Rs. 440.42 Lakhs due to **under-provision** on the main works listed below, despite over-provision on a few items:

i.Unit Auxiliary Transformer (Rs. 2.64 L)

ii.33 KV Protection panel (Rs 132 L)

iii.Additional one no. 220 V DC distribution board (Rs 10.04 L)

iv.Power and Control Cables (Rs 365.20 L)

v.CCTV, Surveillance System & Telecommunication System (Rs 23.87 L)

vi.Ground Mat & Earthing for 220 kV Switchyard, 33 kV Sub Station and DG (Rs 66.21 L)

d) There has been an increase of Rs. 41.36 Lakhs due to the addition of the following main works:

i) Repairing damaged 5 MVA, 132/33 kV Station transformer (Rs 15.5 L)

ii) Procurement of items for Implementation of Remote monitoring system of LT (SSB & UAB PLC parameters by mirroring / duplicating) (Rs 3.92 L)

iii) Procurement of 250 KVA DG for Valve House (Rs 14.63 L)

D. **ANNEX - S (4) - Auxiliary Mechanical equipment and services for power station:** There is an overall increase of Rs. 662.66 Lakhs in this head due to the following reasons:

a) There is an overall increase of Rs. 821.83 Lakhs due to under-provision on the following main works, despite over-provisioning on a few items:

i) Overhauling of Electrical Overhead Travelling Crane at Power House and Valve House (Rs 26.37 L)

ii) Fire protection, fire detection & alarm system and gas suppression system (Rs 1050.79 L)

iii) Fresh Air, Ventilation, exhaust ventilation system (Rs 172.01 L)

b) There is an overall decrease of Rs. (-)159.17 Lakhs in this head due to deletion of workshop machine and equipment.

E. **Annex - S (5) - Substation equipment, auxiliary equipment and service of Switchyard:** There is an overall increase of Rs. 437.42 Lakhs in this head due to the following reasons:

a) There is an overall increase of Rs 435.98 Lakhs due to under-provisioning on the following main works, despite over-provisioning on a few items:

i. 220 kV, 3150 A SF6 Circuit Breaker (Rs 38.26 L), 220 kV Wave Traps (Rs 21.15 L)

ii. Current Transformers with Support Structure (Rs 44.04 L)

iii. Lightning Arrestors (Rs 10.99 L), Post Insulator (Rs 9.15 L)

iv. Bus Conductors, Hard wares and Insulators (Rs 150.79)

v. Protection Panels for Bus & Line (Rs 151.23 L)

vi. 220 kV Tower between GT Yard and SY (Rs 43 L)

F. **Erection and commissioning charges:** There is an overall increase of Rs. 3948.44 Lakhs considering the both heads "generating plant and Auxiliaries" and "Switchyard and pothead Yard Equipment and Charges" due to the following reasons:

a) There is an increase in project cost of Rs. 216.74 Lakhs due to price escalation as per the contract agreement for Electro-Mechanical works.

b) There is an increase of Rs. 80 Lakhs in erection and commissioning charges, including supervision charges, due to under-provisioning in **Annex - S (5)**: Substation equipment, auxiliary equipment, and service of switchyard (referring to erection charges on S5 sheet).

c) The increase of **Rs. 3651.70 Lakhs** is due to non-inclusion of erection charges of some sub systems as well as non-inclusion of supervision charges from various vendors in the original estimate. Additionally, the main erector had to carry out extra works to complete the renovation and modernization. The brief breakup of the cost incurred is as follows:

i. Supervision of erection and commissioning charges of S2 amounting to **Rs. 2028.46 Lakhs**, which includes supervision charges from AHPL for the Main package and Turbine package, supervision charges from BHEL for BFV, supervision charges of Voith for MIV and erection and commission charges from BCPL for different packages.

ii. Supervision of erection and commissioning charges of S3 amounting to Rs. 109.68 Lakhs, which includes supervision charges from BHEL for Generator Transformer erection, erection charges from Vingiri for the erection of isolators and the 33 kV Substation, and erection and commission charges for the installation of CCTV and associated items by different vendors.

iii. Supervision of erection and commissioning charges of S4 amounting to Rs. 591.79 Lakhs, which mainly includes supervision charges from Sterling and Wilson for the erection and commissioning of the Firefighting System.

iv. Erection and commissioning charges of the main erector amounting to Rs. 3135.77 Lakhs, which also includes charges for additional work such as Bus Duct erection, cutting and adjustment of MIV inlet pipe, extra work for PRV, installation of additional BFV Servomotor, installation of additional DC System, erection of Aeration pipeline, installation of OPU heat exchanger, and testing of CTs and PTs of Bus Duct.

G. **Dismantling Charges**: There is an increase of Rs. 302.72 Lakhs in this head due to under-provisioning in dismantling and support services.

9.0 Establishment cost of Civil and HM + EM Work (Variation Rs. 6200.86 Lakh):

The Basic Establishment Cost (BEC-C) of the civil works has been worked out as given below:

Cost of Civil works = I works – B Land (Rs. 55617.47 –0 (Lakhs))

= Rs. 55617.47 Lakhs

BEC-C = 8.00% of Civil works

= 4449.40 Lakhs

Add for Scattered Works: Additional 1% of BEC-C per km for HRT/tunnels length more than 5 km or total approach road length more than 10 km.

Approach Road Length:

Distance from Kopili colony to Kopili Power Station	19.0
Distance of Power House from Adit-3 junction	4.7
Distance of Power House site from junction of surge shaft	5.4
Distance of Power station from Valve House	3.8
Distance of Switchyard from junction PH road	0.2
Distance of kopili colony to dam site	3.6
Distance of kopili PH to Adit-2	8.4
Distance of ab 8 junction from PH	0.5
Distance PH From Main Road junction	7.0
Total	52.60 km
Total approach road less 10 km	42.60 km

Scattered Works =1% of BEC-C per km

=1% of 4449.40 x 42.6 lakhs

=1895.44 lakhs

Total establishment cost for Civil Works: Rs 6344.84 lakhs

Similarly, the Basic Establishment Cost (BEC-E) of the EM works has been worked out as below.

Basic Establishment Cost-EM = 6% of E-M Woks i.e 43673.29 lakhs

= Rs. 2620.40 lakhs

Total entitled establishment cost for EM Works: Rs 2620.40 lakhs.

Hence, the total establishment cost as per CEA norms, worked out as Rs.8965.24 lakhs.

However, actual cost incurred under Establishment head is Rs 11,492.87 lakhs as on COD. The cost of establishment includes salary and wages, welfare schemes apart from increment and dearness allowances as per Government policy. Further, establishment expenses are incurred during the time overrun of project and therefore the charges of establishment for the time period corresponding to time overrun. As such, actual expenditure of Rs 11,492.87 lakhs have been included in the project cost.

10. V – RECIEPTS AND RECOVERIES:

This head is meant to account for estimated recoveries by way of resale or transfer of temporary buildings and special T&P. Miscellaneous receipts like rent charges of buildings electricity charges etc. should also be accounted for under this head.

For RR&M of Kopili Hydro Power Station Nil amount has been approved by CEA.

11. IDC &FC:

As per the CEA approved cost an amount of Rs. 53.97 Cr was allocated against soft cost that comprise mainly of IDC and FC. As per investment approval, total project cost was financed at a debt-equity ratio of 70:30.

As on May' 24, the actual expenditure incurred under this head is Rs. 79.74 Crore (in which there is time overrun of 13.2 months).

12. Income from sale of infirm power & sale of scraps:

An amount of Rs 459.64 lakhs has been booked as income from the sale of infirm power before declaration of COD and Rs 2979 lakhs from the proceed of sale of scraps has been booked. The total amount of Rs 3438.64 lakhs has been deducted from total cost of the project.

Conclusion:

Besides above, the Kopili Hydro Power Station being located in remote area faced many challenges during execution such as poor approach roads, non-availability of skilled manpower, various problem faced due to poor condition of Lanka-Umrangso main road

since very long time which caused many logistic problems, law & order problems etc. The hindrances encountered were successfully tackled by appropriate engineering with advice of prominent technical experts, consultants etc. The Corporation has strived hard to complete the project successfully by optimizing the cost and time despite facing several adversities. The delays suffered during the course of execution of the project leading to time overrun of 13.2 months accompanied by cost overrun of Rs 240.63 Crore are beyond the control of the Corporation.

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A-3

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
तापीय सिविल अभिकल्प प्रभाग
Thermal Civil Design Division

विषय :- Examination of Reconstruction, R&M proposal of 200 MW Kopili Power Station, Umrongso, Assam – Submission of Construction Schedule and Phasing of Civil Cost Reg.

संदर्भ :1. HE&RM Division email dated 21.06.2021
2. Letter No. 13/2(NEEPCO-Kopili)/2021/HE&RM/265 dated 21.06.2021
3. M/s NEEPCO email dated 13.07.2021

महोदय,

Kind reference is invited to HE&RM Division email under reference-1 attaching therein letter under reference – 2 vide which construction schedule and phasing of Civil and HM works of the DPR of Reconstruction and R&M proposal of Kopili HEP was submitted to this Division for perusal and vetting. The construction schedule and the phasing have been examined in this Division and observations on the same were communicated to the representative of the project authority. In view of the above, project authority modified construction schedule and phasing of the cost of Civil & HM works and forwarded to this Division vide email dated 13.07.2021(under reference – 3). This Division further examined the construction schedule and the phasing of Civil and HM works and found them in order. The followings has been kept in view while finalizing the schedule and the phasing of Civil & HM works: -

- The construction schedule of the project has been prepared by the project authority on experience basis without incorporating the finalized chapter of Construction Programme and Plant planning in the DPR.
- The zero date of the Project has been adopted as 1st November, 2020.
- The period of Reconstruction and restoration of the project has been taken as 42 months starting from the 1st November, 2019 to the date of commissioning of the project as 30th April 2023.
- The cost of Civil and HM works amounting to Rs. 43300.67 Lakhs has been phased over a period of 42 months in which the amount of Rs. 2663.95 lakhs has already been incurred upto zero date and the balance amount i.e. Rs. 40636.71 lakhs has been phased over a period of 30 months on

A-4

half yearly basis as per enclosure.

Copy of construction schedule and phasing of Civil & HM works finalized in this Division have been enclosed as Annexure-I and Annexure-II respectively for favour of information and further necessary action.

संलग्न - उपरोक्त अनुसार

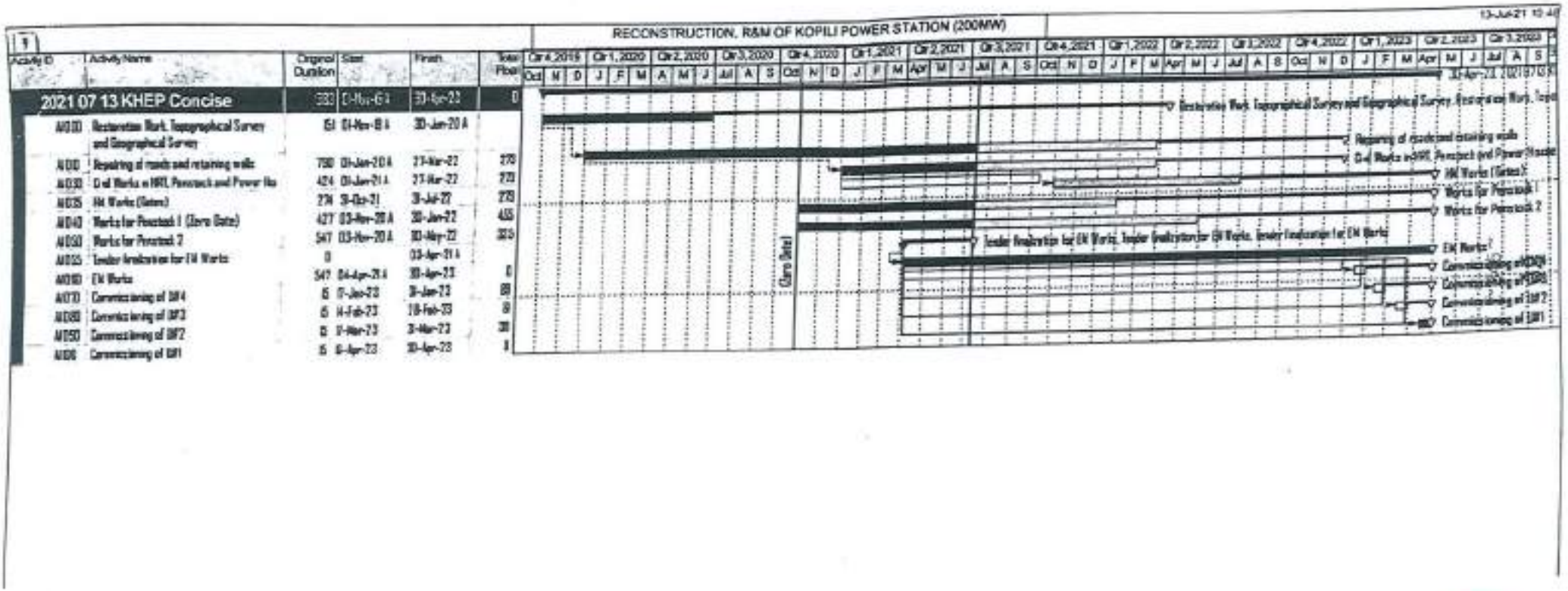
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Date: 2021.07.26 16:56:16 IST

(बालेश्वर ठाकुर)

निदेशक

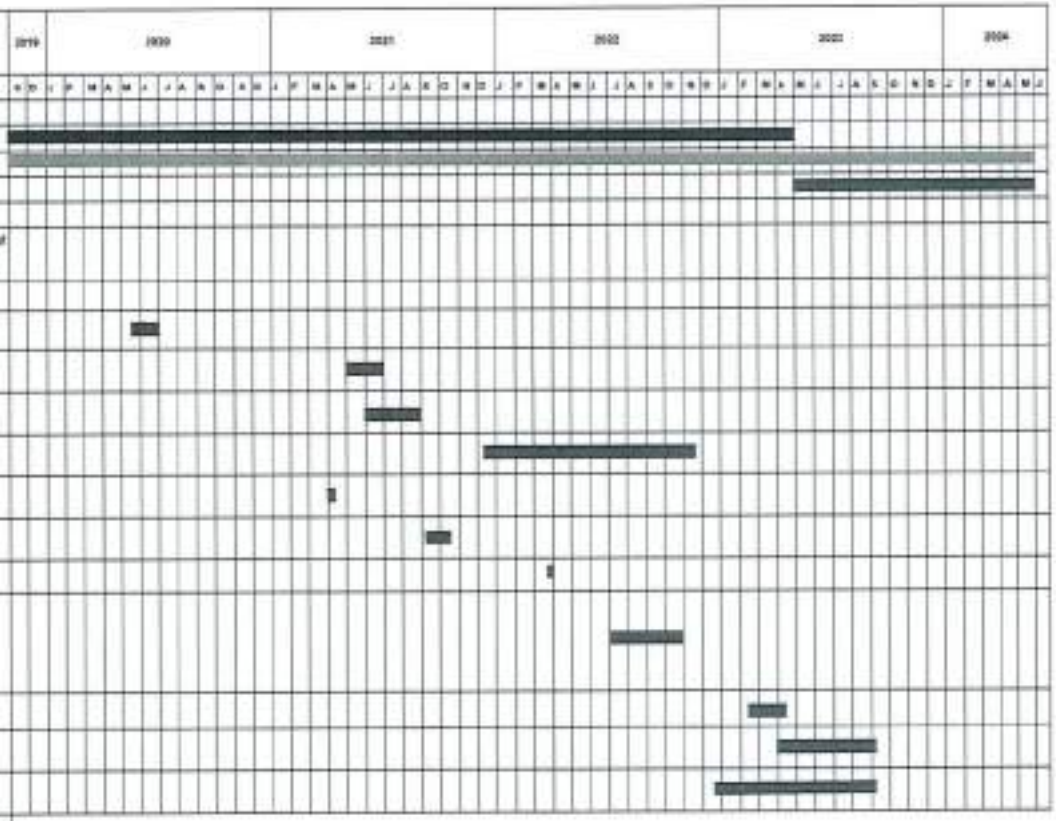
निदेशक (एच.ई.आर.एम.), के0 वि0 प्रा0 दिनांक: 26.07.2021

Copy for information to Member(Thermal), CEA


RECONSTRUCTION, R&M OF KOPILI POWER STATION (200MW)
13-Jul-21 10:40
Activity ID
Activity Name
Original Duration
Start
Finish
Total Float
2021 07 13 KHEP Concise
AD00 Restoration Work, Topographical Survey and Geographical Survey
AD10 Repairing of roads and retaining walls
AD30 Civil Works in HRT, Penstock and Power Ho
AD35 HM Works (Gates)
AD40 Works for Penstock 1 (Zero Date)
AD50 Works for Penstock 2
AD55 Tender finalization for EM Works
AD60 EM Works
AD70 Commissioning of U#4
AD80 Commissioning of U#3
AD90 Commissioning of U#2
AD95 Commissioning of U#1
Qtr 4, 2019
Qtr 1, 2020
Qtr 2, 2020
Qtr 3, 2020
Qtr 4, 2020
Qtr 1, 2021
Qtr 2, 2021
Qtr 3, 2021
Qtr 4, 2021
Qtr 1, 2022
Qtr 2, 2022
Qtr 3, 2022
Qtr 4, 2022
Qtr 1, 2023
Qtr 2, 2023
Qtr 3, 2023
Zero Date
Restoration Work, Topographical Survey and Geographical Survey, Restoration Work, Topo
Repairing of roads and retaining walls
Civil Works in HRT, Penstock and Power Housin
HM Works (Gates)
Works for Penstock 1
Works for Penstock 2
Tender finalization for EM Works, Tender finalization for EM Works, Tender finalization for EM Works
EM Works
Commissioning of U#4
Commissioning of U#3
Commissioning of U#2
Commissioning of U#1

BARCHART SHOWING DELAY: RECONSTRUCTION, RENOVATION & MODERNISATION OF 4x50 MW KOPILI POWER STATION

Sl.No.	Description	Start Date	End Date	Period of Completion (months)	
I	RR&M KOPILI POWER STATION				
a)	Construction period as per Approval	1-11-19	30-4-23	42.00	
b)	Actual period of Completion.	1-11-19	3-6-24	55.20	
c)	Total Delay			13.20	
		Start Date	End Date	Period of Hindrance (months)	Net period of Delay (Months)
II	Reasons of Delays				
1.	Nationwide lockdown due to Covid-19 pandemic	24-03-2020	31-05-2020	2.3	2.3
2	Night curfew and restrictions imposed by district authorities on account of Covid-19 pandemic,(2nd Wave)	01-05-2021	30-06-2021	2.0	1.8
3	Post Covid affect: Delay in supply of major Generator equipment	01-06-2021	31-08-2021	3.0	2.0
4	Post Covid affect: Delay in supply of BF valves	16-12-2021	21-11-2022	11.3	2.8
5	Assam Legislative Assembly election, 2021	01-04-2021	18-04-2021	0.3	0.0
6	Locas fall in Adit-II due to poor geology	10-09-2021	10-10-2021	1.0	0.0
7	Disruption in construction power supply due to inundation of Khanitong.	29-03-2022	31-03-2022	0.2	0.2
8	Heavy seasonal rainfall coupled with deteriorated condition of main project road i.e. Lanka-Umrongso public road due to construction works by PWD partially affected the transportation of construction materials /equipment etc.,	01-07-2022	30-10-2022	4.0	0.0
9	Modification in refurbishment plan of Bifurcations as per suggestion of Report Consultant	18-02-2023	14-04-2023	1.9	0.0
10	Delay in Supply of material by Voith Hydro for Unit one	01-03-2023	09-05-2023	6.4	0.0
11	Surprises in Unit One spiral Casing	24-12-2022	27-05-2023	5.5	4.9
					13.2



~ 347 ~

Appendix 3

Ap3 – 1/85

Govt. Of Assam.
Office Of The Deputy Commissioner
District Disaster Management Authority (DDMA)
Dima Hasao, Haflong-788819.
Tele-03673-236324,(0)9435530412 Email:dcchaflong@gmail.com

Dated: 21st March 2020

DDMA/COVID-19/2020-2019/-E

ORDER

(U/S 34 of Disaster Management Act, 2005)

Whereas it has become essential to restrict public gathering and interaction in order to prevent the possibilities of an outbreak and spread of COVID-19 (Corona Virus) amongst the citizens of the district of Dima Hasao Therefore, exercising power conferred by Section 34 of the Disaster Management Act, 2005, I, Sri. Amitabh Rajkhowa, ACS, Deputy Commissioner & Chairman, District Disaster Management Authority, Dima Hasao District do hereby direct the closure of following w.e.f. 24th of March 2020 from (6.00 A.M.) till 28th March 2020 (09.00 P.M.).

1. **All Govt. Offices, Semi Govt Offices, Private Offices and Institutions.**
2. **All business establishments, Shops and Outlets.**
3. **All weekly or periodical markets and fairs**
4. **All public and provate / commercials vehicles.**

Exemptions are given to the following:

1. **District Administration & DDMA, Health & Family Welfare, Post Office, PHE, BSNL, APDCL, Police, Army, Food and Civil Supplies.**
2. **Pharmacies,Clinical establishments,Grocery and essential item shops, Petrol Pumps, LPG outlets, Printing Press, Vegetable markets (Subject to maintenance of Proper sanitation and hygienic condition by lessees).**
3. **Vehicles registered under the District Administration/ District Disaster Management Authority and related to Emergency, Health Services (Both Govt. & Private), Army/ Military vehicles, Paramilitary vehicles, Police Vehicles, Ambulances, Goods Carrying Essential Commidities vehicles and any other vehicles related to the emergency are exempted from the above restrictions.**

Non-compliance of the above order, will invite penal action U/S 188 of the IPC.

All the OC's /IC's of Police Station / OPs of Dima Hasao District are hereby directed to ensure strict compliance of the above order.

Area of Operation: *Entire Dima Hasao District.*

Deputy Commissioner
&
Chairman,
District Disaster Management Authority,
Dima Hasao,Haflong.

Ap3-2/15

No. 40-3/2020-DM-I(A)
Government of India
Ministry of Home Affairs

North Block, New Delhi-110001
Dated 24th March, 2020

ORDER

Whereas, the National Disaster Management Authority (NDMA), is satisfied that the country is threatened with the spread of COVID-19 epidemic, which has already been declared as a pandemic by the World Health Organisation, and has considered it necessary to take effective measures to prevent its spread across the country and that there is a need for consistency in the application and implementation of various measures across the country while ensuring maintenance of essential services and supplies, including health infrastructure;

Whereas in exercise of the powers under section 6(2)(i) of the Disaster Management Act, 2005, the National Disaster Management Authority (NDMA), has issued an Order no. 1-29/2020-PP (Pt.II) dated 24.03.2020 (Copy enclosed) directing the Ministries/ Departments of Government of India, State/Union Territory Governments and State/ Union Territory Authorities to take effective measures so as to prevent the spread of COVID-19 in the country;

Whereas under directions of the aforesaid Order of NDMA, and in exercise of the powers, conferred under Section 10(2)(I) of the Disaster Management Act, the undersigned, in his capacity as Chairperson, National Executive Committee, hereby issues guidelines, as per the Annexure, to Ministries/ Departments of Government of India, State/Union Territory Governments and State/ Union Territory Authorities with the directions for their strict implementation. This Order shall remain in force, in all parts of the country for a period of 21 days with effect from 25.03.2020.

24/3/2020
Home Secretary

To

1. **The Secretaries of Ministries/ Departments of Government of India**
2. **The Chief Secretaries/Administrators of States/Union Territories**
   (As per list attached)

Copy to.

i. All members of the National Executive Committee.
ii. Member Secretary, National Disaster Management Authority.

Ag 2/15

No. 40-3/2020-DM-I(A)
Government of India
Ministry of Home Affairs

North Block, New Delhi-110001
Dated 14th April, 2020

ORDER

Whereas under directions of the National Disaster Management Authority (NDMA)'s Order dated 24.03.2020, and in exercise of the powers, conferred under Section 10(2)(l) of the Disaster Management Act 2005, the undersigned, in his capacity as Chairperson, National Executive Committee, issued directions vide Order of even number dated 24.03.2020 to all Ministries/ Departments of Government of India, State/ Union Territory Governments and State/ Union Territory Authorities, with the guidelines to implement lockdown measures, to contain the spread of COVID-19, in all parts of the country for a period of 21 days with effect from 25.03.2020;

Whereas, the guidelines to implement lockdown measures were further modified on 25.03.2020, 27.03.2020, 02.04.2020, 03.04.2020 and 10.04.2020 and consolidated guidelines are placed on the website of Ministry of Home Affairs (MHA);

Whereas, NDMA after assessing the situation on COVID-19 epidemic is satisfied that strict social distancing measures need to be implemented for a further period so as to effectively contain the spread of COVID-19 in the country;

Whereas in exercise of the powers under section 6(2)(i) of the Disaster Management Act, 2005, NDMA has issued an Order number 1-137/2018-Mit-II (FTS-10548) dated 14.04.2020 (copy enclosed) directing the Chairperson, National Executive Committee that existing lockdown measures be continued to be implemented in all parts of the Country, upto 03.05.2020.

Whereas under directions of the aforesaid Order of NDMA, and in exercise of the powers, conferred under Section 10(2)(l) of the Disaster Management Act, 2005, the undersigned, in his capacity as Chairperson, National Executive Committee, hereby issues directions to all the all Ministries/ Departments of Government of India, State/Union Territory Governments and State/Union Territory Authorities that the Lockdown measures stipulated in aforesaid Consolidated Guidelines of MHA for containment of COVID-19 epidemic in the country, will continue to remain in force upto 03.05.2020 to contain the spread of COVID-19 in the country.

14/04/2020
Union Home Secretary

To:
1. The Secretaries of Ministries/ Departments of Government of India
2. The Chief Secretaries/Administrators of States/Union Territories
   (As per list attached)

Copy to:
i. All members of the National Executive Committee.
ii. Member Secretary, National Disaster Management Authority.

Ap. - 4/25

Government of India
National Disaster Management Authority
"NDMA Bhawan",
A-1, Safdarjung Enclave, New Delhi-110029.

No.1-137/2018-Mit-II(FTS-10548) Dated, the 13th/14th April, 2020.

ORDER

On 24th March, 2020, the National Disaster Management Authority directed the Ministries/Departments of Government of India, State Governments and State Authorities to take measures for ensuring social distancing so as to prevent the spread of COVID 19 in the country. These measures are in force for a period of 21 days w.e.f. from 25th March 2020. Detailed guidelines and addenda were issued by National Executive Committee from time to time under section 10(2)(l) of the Disaster Management Act 2005.

2. Considering the fact that strict social distancing measures need to be implemented for a further period to contain the spread of COVID 19, the National Authority, in exercise of powers under Section 6 (2) (i) of the Disaster Management Act, 2005, directs the Ministries/Departments of Government of India, State Governments and State Authorities to continue the same measures for social distancing upto 3rd May, 2020. In this regard the guidelines/orders issued by NEC shall continue to be applicable throughout the country. The Authority further directs NEC to issue modifications in the guidelines as necessary, keeping in view the need to contain the spread of COVID 19.

14/4/2020

Member Secretary, NDMA

To

Union Home Secretary,
North Block, New Delhi 110011

Scanned with CamScanner

Ap 5/25

No. 40-3/2020-DM-I(A)
Government of India
Ministry of Home Affairs

North Block, New Delhi-110001
Dated 1st May, 2020

ORDER

Whereas under directions of the National Disaster Management Authority (NDMA), guidelines on lockdown measures to contain the spread of COVID-19 in all parts of the country were issued vide Order of even number dated 24.03.2020 under the Disaster Management Act 2005 for a period of 21 days with effect from 25.03.2020. Under further directions of NDMA, the lockdown period was extended upto 03.05.2020 vide Order of even number dated 14.04.2020 and consolidated revised guidelines were issued vide Order of even number dated 15.04.2020;

Whereas in exercise of the powers under section 6(2)(i) of the Disaster Management Act, 2005, NDMA has issued an Order number 1-29/2020-PP dated 01.05.2020 directing the Chairperson, NEC that lockdown measures be continued to be implemented in all parts of the Country, for a further period of two weeks with effect from 04.05.2020;

Whereas under directions of the aforesaid Order of NDMA dated 01.05.2020, and in exercise of the powers, conferred under Section 10(2)(I) of the Disaster Management Act, 2005, the undersigned, in his capacity as Chairperson, NEC, hereby issues directions to all the Ministries/ Departments of Government of India, State/Union Territory Governments and State/Union Territory Authorities that the lockdown period is extended for a further period of two weeks with effect from 04.05.2020;

Whereas, in exercise of the powers, conferred under Section 10(2)(I) of the Disaster Management Act, 2005, the undersigned, in his capacity as Chairperson, NEC, hereby issues new guidelines on lockdown measures, as annexed, which will come into effect from 04.05.2020 for a period of two weeks, for strict implementation.

1/5/2020
Union Home Secretary

To:
1. The Secretaries of Ministries/ Departments of Government of India
2. The Chief Secretaries/Administrators of States/Union Territories
   (As per list attached)

Copy to:
i. All members of the National Executive Committee.
ii. Member Secretary, National Disaster Management Authority.

A5 6/15

New Guidelines on the measures to be taken by Ministries/ Departments of Government of India, State/ UT Governments and State/ UT authorities for containment of COVID-19 in the country for the extended period of National Lockdown for a further period of two weeks with effect from 4th May, 2020.

[As per Ministry of Home Affairs (MHA) Order No. 40-3/2020-DM-I (A) dated 1st May, 2020]

1. With the extension of the Lockdown period for a further period of two weeks with effect from 4th May 2020, new guidelines, as under, will be applicable based on the risk profiling of the districts into Red (Hotspot), Green and Orange zones.

2. **Identification of Red (Hotspots), Green and Orange Zones**

   I. Based on their risk profile, the criteria for dividing the districts of the country into three zones, viz., **green, red and orange**, will be as follows:

      a. **Green Zones**: Green Zones shall be defined as per the following criteria: districts with zero confirmed case till date; or, districts with no confirmed case in the last 21 days.

      b. **Red Zones or Hotspot Districts**: Districts shall be defined as Red Zones or Hotspot districts, by Ministry of Health and Family Welfare (MoHFW), Government of India (GoI), taking into account total number of active cases, doubling rate of confirmed cases, extent of testing and surveillance feedback.

      c. **Orange Zones**: Districts, which are neither defined as Red nor as Green Zones, shall be Orange Zones.

   II. MoHFW will share the list of Red Zone (Hotspot), Orange Zone and Green Zone districts and related information with State/ UTs on a weekly basis or earlier as required. States/ UTs, on review, may consider inclusion of **additional districts** as Red Zone (Hotspots) and Orange Zone districts depending on the extent of spread of COVID-19 infection. **However, States and UTs may not lower the classification of any district, that is included in the list of Red Zone (Hotspots) and Orange Zone districts by MoHFW.**

   III. Districts classified either as Red or Orange Zones, may have one or more Municipal Corporation (MC) areas. In such cases, States/ UTs and District administrations may make an assessment of the distribution of cases - within the jurisdiction of the MC(s); and the area falling outside the MC(s) boundaries. In such cases, the classification of zones shall be as follows:

      a. In case the district is classified as a Red Zone, and, there is no confirmed case in the last 21 days in the area of the district outside the limits of the MC(s), this area may be labeled as an Orange Zone. However, due caution may be exercised in such areas so that they remain free from COVID-19 cases.

      b. In case the district is classified as an Orange Zone, and, there is no confirmed case in the last 21 days in the area of the district outside the limits of the MC(s), this area may be labeled as a Green Zone. However, due caution may be exercised in such areas so that they remain free from COVID-19 cases.

      c. In case in the area of the district outside the limits of the MC (s) does have one or more confirmed case(s) in the last 21 days, this part of the

district shall continue to be labeled as a Red or Orange Zone, as per the classification of the district.

d. While assessing the classification of a zone, cases should be registered in the zone where the case originates, rather than where it is treated.

3. **Identification of Containment Zones**

i. Containment Zones shall be demarcated within **Red (Hotspots) and Orange Zones** by States/ UTs and District Administrations based on the guidelines of MoHFW. The boundary of the Containment Zone shall be defined by District Administrations taking into account the following factors: mapping of cases and contacts; geographical dispersion of cases and contacts; area with well demarcated perimeter; and enforceability.

ii. The boundary of the Containment Zone will be a residential colony, *mohalla*, municipal ward, municipal zone, Police Station area, towns etc., in case of urban areas; and, a village, cluster of villages, Gram Panchayats, group of Police Stations, blocks etc., in case of rural areas.

Protocol within Containment Zones:

iii. Intensive surveillance mechanism as outlined in the Standard Operating Protocol (SOP) issued by MoHFW is to be established within the Containment Zone. **The local authority shall ensure 100% coverage of *Aarogya Setu* app among the residents of Containment Zones.**

iv. In the Containment Zone, following activities shall be undertaken by the local authorities:

a. Contact Tracing.

b. Home or Institutional quarantining of individuals based on risk assessment by medical officers. This risk assessment will be based on symptoms, contact with confirmed cases, and travel history.

c. Testing of all cases with Severe Acute Respiratory Infection (SARI), Influenza Like Illness (ILI) and other symptoms specified by MOHFW.

d. House to house surveillance by special teams constituted for this purpose.

e. Clinical management of all cases as per protocol.

f. Counselling and educating people; and establishing effective communication strategies.

v. In these **Containment Zones**, within Red (Hotspots) and Orange Zones, **where maximum precaution is required**, there shall be strict perimeter control to ensure that there is no movement of population in or out of these zones except for medical emergencies and for maintaining supply of essential goods and services. The guidelines issued in this regard by MoHFW will be strictly implemented by State/ UT Governments and the local district authorities.

4. **The following activities will continue to remain prohibited across the country, irrespective of the Zone, for a period of two weeks with effect from 4th May, 2020:**

i. All domestic and international air travel of passengers, except for medical services, air ambulance and for security purposes or for purposes as permitted by MHA.

ii. All passenger movement by trains, except for security purposes or for purposes as permitted by MHA.

AP-8/15

iii. Inter-State Buses for public transport, except as permitted by MHA.

iv. Metro rail services.

v. Inter-State movement of individuals except for medical reasons or for activities as permitted by MHA.

vi. All schools, colleges, educational/ training/ coaching institutions etc. However, online/ distance learning shall be permitted.

vii. Hospitality services other than those used for housing health/ police/ Government officials/ healthcare workers, stranded persons including tourists, and those used for quarantine facilities.

viii. All cinema halls, shopping malls, gymnasiums, sports complexes, swimming pools, entertainment parks, theatres, bars and auditoriums, assembly halls and similar places.

ix. All social/ political/ sports/ entertainment/ academic/ cultural/ religious functions/ other gatherings.

x. All religious places/ places of worship shall be closed for public. Religious congregations are strictly prohibited.

5. **Measures for well being and safety of persons**

i. The movement of individuals, for all non-essential activities, shall remain strictly prohibited between 7 pm to 7 am. Local authorities shall issue orders under appropriate provisions of law, such as prohibitory orders [curfew] under Section 144 of CrPC, for this purpose, and ensure strict compliance.

ii. In all zones, persons above 65 years of age, persons with co-morbidities, pregnant women, and children below the age of 10 years, shall stay at home, except for meeting essential requirements and for health purposes, as per the National Directives.

iii. In Containment Zones, Out-Patient Departments (OPDs) and Medical clinics shall not be permitted to operate. However, these may be permitted to operate in Red, Orange and Green Zones, with social distancing norms and other safety precautions.

6. **Activities in Containment Zones**

i. Strict perimeter control.

ii. Establishment of clear entry and exit points.

iii. Movement of persons only for maintaining supply of goods and services; and for medical emergencies.

iv. No unchecked influx of people and transport.

v. Recording of details of people moving in and out of perimeter.

7. **Activities in Red Zones (Hotspots) [Outside Containment Zones]**

i. Apart from the prohibited activities mentioned at Para 4, the following activities shall **not** be permitted:

a. Cycle rickshaws and auto rickshaws.

b. Taxis and cab aggregators.

c. Intra-district and inter-district plying of buses.

d. Barber shops, spas and salons.

ii. The following activities shall be permitted with **restrictions** as specified:

a. Movement of individuals and vehicles, only for permitted activities. Four wheeler vehicles will have maximum two passengers besides the vehicle driver; for two wheelers, pillion rider is not allowed.

b. Industrial establishments in urban areas: Only Special Economic Zones (SEZs), Export Oriented Units (EOUs), industrial estates and industrial townships with access control; Manufacturing units of essential goods, including drugs, pharmaceuticals, medical devices, their raw material and intermediates; Production units, which require continuous process, and their supply chain; Manufacturing of IT hardware; Jute industry with staggered shifts and social distancing; and, Manufacturing units of packaging material are permitted.

   All industrial activities are permitted in rural areas.

c. Construction activities in urban areas: Only in situ construction (where workers are available on site and no workers are required to be brought in from outside) and construction of renewable energy projects are permitted.

   All construction activities are permitted in rural areas.

d. All malls, market complexes and markets shall remain closed in urban areas, i.e., areas within the limits of municipal corporations and municipalities. However, shops selling essential goods in markets and market complexes are permitted.

   All standalone (single) shops, neighborhood (colony) shops and shops in residential complexes are permitted to remain open in urban areas, without any distinction of essential and non-essential.

   All shops in rural areas, except in malls, are permitted to remain open, without any distinction of essential and non-essential.

   Social distancing (*2 Gaz ki doori*) will be maintained in all cases.

e. E-commerce activities will be permitted only in respect of essential goods.

f. Private offices can operate with upto 33% strength as per requirement, with the remaining persons working from home.

g. All Government offices shall function with officers of the level of Deputy Secretary and above to the extent of 100% strength. The remaining staff will attend upto 33% as per requirement. However, Defense and Security services, Health and Family Welfare, Police, Prisons, Home Guards, Civil Defence, Fire and Emergency Services, Disaster management and related services, NIC, Customs, FCI, NCC, NYK and Municipal services shall function without any restrictions; delivery of public services shall be ensured and necessary staff will be deployed for such purpose.

8. **Activities in Orange Zones [Outside Containment Zones]**

i. Apart from the prohibited activities mentioned at Para 4, the following activities shall not be permitted:

   a. Inter-district and Intra-district plying of buses.

ii. The following activities shall be permitted with **restrictions** as are specified:

   a. Taxis and cab aggregators, with 1 driver and 2 passengers only.

   b. Inter-district movement of individuals and vehicles, only for permitted activities. Four wheeler vehicles will have maximum two passengers besides the driver.

Ap-10/15

9. **Activities in Green Zones**

i. All activities are permitted in Green Zones, except those activities that are prohibited under Para 4.

ii. Buses can operate with upto 50% seating capacity.

iii. Bus depots can operate with upto 50% capacity.

10. **All other activities will be permitted activities, which are not specifically prohibited/ permitted with restrictions in the various Zones, under these guidelines. However, States/ UTs, based on their assessment of the situation, and with the primary objective of keeping the spread of COVID-19 in check, may allow only select activities from out of the permitted activities, with such restrictions as felt necessary.**

11. All States/ UTs shall allow inter-state movement of goods/ cargo, including empty trucks.

12. No State/ UT shall stop the movement of cargo for cross land-border trade under Treaties with neighbouring countries.

13. No separate/ fresh permissions are required from authorities for activities already permitted to operate under the guidelines on Lockdown measures up to May 3, 2020. The following Standard Operating Protocols (SOPs) issued by MHA will continue to operate:

i. SOP on transit arrangement for foreign national(s) in India and release of quarantine persons, issued vide Order dated April 02, 2020.

ii. SOP on movement of stranded labour within States/ UTs, issued vide Order dated April 19, 2020.

iii. SOP on sign-on and sign-off of Indian seafarers, issued vide Order dated April 21, 2020.

iv. SOP on movement of stranded migrant workers, pilgrims, tourists, students and other persons, issued vide Order dated April 29, 2020.

v. SOP on movement of stranded migrant workers, pilgrims, tourists, students and other persons by train, issued vide Order dated May 01, 2020.

14. **Strict enforcement of the lockdown guidelines**

State/ UT Governments shall not dilute these guidelines issued under the Disaster Management Act, 2005, in any manner, and shall strictly enforce the same.

15. **Instructions for enforcement of above lockdown measures:**

i. All the district magistrates shall strictly enforce the above lockdown measures and the National Directives for COVID 19 Management, for public and work places, as specified in **Annexure I.**

ii. In order to implement these containment measures, the District Magistrate will deploy Executive Magistrates as Incident Commanders in the respective local jurisdictions. The Incident Commander will be responsible for the overall implementation of these measures in their respective jurisdictions. All other line department officials in the specified area will work under the directions of such Incident Commander. The Incident Commander will issue passes for enabling essential movements as explained.

iii. The Incident Commanders will in particular ensure that all efforts for mobilization of resources, workers and material for augmentation and expansion of hospital infrastructure shall continue without any hindrance.

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Ap-11/3/25

16. **Penal provisions**

Any person violating these lockdown measures and the National Directives for COVID-19 Management will be liable to be proceeded against as per the provisions of Section 51 to 60 of the Disaster Management Act, 2005, besides legal action under Sec. 188 of the IPC, and other legal provisions as applicable. Extracts of these penal provisions are at **Annexure II.**

1/5/2020

Union Home Secretary

NEEPCO
North Eastern Electric Power Corporation
New Delhi

Ap-12/25
3

Annexure I

National Directives for COVID-19 Management

PUBLIC PLACES

1. Wearing of face cover is compulsory in all public places.
2. All persons in charge of public places and transport shall ensure social distancing as per the guidelines issued by Ministry of Health and Family Welfare.
3. No organization/ manager of public place shall allow gathering of 5 or more persons.
4. Marriages related gatherings shall ensure social distancing, and the maximum number of guests allowed shall not be more than 50.
5. Funeral/ last rites related gatherings shall ensure social distancing, and the maximum numbers allowed shall not be more than 20.
6. Spitting in public places shall be punishable with fine, as may be prescribed by the State/ UT local authority.
7. Consumption of liquor, *paan*, *gutka*, tobacco etc. in public places is not allowed.
8. Shops selling liquor, *paan*, *gutka*, tobacco etc. will ensure minimum six feet distance (*2 gaz ki doori*) from each other, and also ensure that not more than 5 persons are present at one time at the shop.

WORK PLACES

9. Wearing of face cover is compulsory in all work places and adequate stock of such face covers shall be made available.
10. All persons in charge of work places shall ensure social distancing as per the guidelines issued by Ministry of Health and Family Welfare, both within the work places and in company transport.
11. Social distancing at work places shall be ensured through adequate gaps between shifts, staggering the lunch breaks of staff, etc.
12. Provision for thermal scanning, hand wash and sanitizer preferably with touch free mechanism will be made at all entry and exit points and common areas. In addition, sufficient quantities of handwash and sanitizer shall be made available in the work places.
13. Frequent sanitization of entire workplace, common facilities and all points which come into human contact e.g. door handles etc., shall be ensured, including between shifts.
14. Persons above 65 years of age, persons with co-morbidities, pregnant women and children below the age of 10 years shall stay at home, except for meeting essential requirements and for health purposes.
15. Use of *Arogya Setu* app shall be made mandatory for all employees, both private and public. It shall be the responsibility of the Head of the respective Organizations to ensure 100% coverage of this app among the employees.
16. Large physical meetings to be avoided.
17. Hospitals/ clinics in the nearby areas, which are authorized to treat COVID-19 patients, should be identified and list should be available at work place all the times. Employees showing any symptom of COVID-19 should be immediately sent for check up to such facilities. Quarantine areas should be earmarked for isolating employees showing symptoms till they are safely moved to the medical facilities.

7

A/F 13/25

18. Arrangements for transport facilities shall be ensured with social distancing, wherever personal/ public transport is not feasible.
19. Intensive communication and training on good hygiene practices shall be taken up.

AP-14/25

Annexure II

Offences and Penalties for Violation of Lockdown Measures

A. **Section 51 to 60 of the Disaster Management Act, 2005**

51. Punishment for obstruction, etc.—Whoever, without reasonable cause —

(a) obstructs any officer or employee of the Central Government or the State Government, or a person authorised by the National Authority or State Authority or District Authority in the discharge of his functions under this Act; or

(b) refuses to comply with any direction given by or on behalf of the Central Government or the State Government or the National Executive Committee or the State Executive Committee or the District Authority under this Act,

shall on conviction be punishable with imprisonment for a term which may extend to one year or with fine, or with both, and if such obstruction or refusal to comply with directions results in loss of lives or imminent danger thereof, shall on conviction be punishable with imprisonment for a term which may extend to two years.

52. Punishment for false claim.—Whoever knowingly makes a claim which he knows or has reason to believe to be false for obtaining any relief, assistance, repair, reconstruction or other benefits consequent to disaster from any officer of the Central Government, the State Government, the National Authority, the State Authority or the District Authority, shall, on conviction be punishable with imprisonment for a term which may extend to two years, and also with fine.

53. Punishment for misappropriation of money or materials, etc.—Whoever, being entrusted with any money or materials, or otherwise being, in custody of, or dominion over, any money or goods, meant for providing relief in any threatening disaster situation or disaster, misappropriates or appropriates for his own use or disposes of such money or materials or any part thereof or wilfully compels any other person so to do, shall on conviction be punishable with imprisonment for a term which may extend to two years, and also with fine.

54. Punishment for false warning.—Whoever makes or circulates a false alarm or warning as to disaster or its severity or magnitude, leading to panic, shall on conviction, be punishable with imprisonment which may extend to one year or with fine.

55. Offences by Departments of the Government.—(1) Where an offence under this Act has been committed by any Department of the Government, the head of the Department shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly unless he proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a Department of the Government and it is proved that the offence has been committed with the consent or connivance of, or is attributable to any neglect on the part of, any officer, other than the head of the Department, such officer shall be deemed to

be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

56. Failure of officer in duty or his connivance at the contravention of the provisions of this Act—Any officer, on whom any duty has been imposed by or under this Act and who ceases or refuses to perform or withdraws himself from the duties of his office shall, unless he has obtained the express written permission of his official superior or has other lawful excuse for so doing, be punishable with imprisonment for a term which may extend to one year or with fine.

57. Penalty for contravention of any order regarding requisitioning.—If any person contravenes any order made under section 65, he shall be punishable with imprisonment for a term which may extend to one year or with fine or with both.

58. Offence by companies.—(1) Where an offence under this Act has been committed by a company or body corporate, every person who at the time the offence was committed, was in charge of, and was responsible to, the company, for the conduct of the business of the company, as well as the company, shall be deemed to be guilty of the contravention and shall be liable to be proceeded against and punished accordingly:

Provided that nothing in this sub-section shall render any such person liable to any punishment provided in this Act, if he proves that the offence was committed without his knowledge or that he exercised due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a company, and it is proved that the offence was committed with the consent or connivance of or is attributable to any neglect on the part of any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also, be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

Explanation.—For the purpose of this section—

i. "company" means any body corporate and includes a firm or other association of individuals; and

ii. "director", in relation to a firm, means a partner in the firm.

59. Previous sanction for prosecution.—No prosecution for offences punishable under sections 55 and 56 shall be instituted except with the previous sanction of the Central Government or the State Government, as the case may be, or of any officer authorised in this behalf, by general or special order, by such Government.

60. Cognizance of offences.—No court shall take cognizance of an offence under this Act except on a complaint made by—

(a) the National Authority, the State Authority, the Central Government, the State Government, the District Authority or any other authority or officer authorised in this behalf by that Authority or Government, as the case may be; or

(b) any person who has given notice of not less than thirty days in the manner prescribed, of the alleged offence and his intention to make a complaint to the National Authority, the State Authority, the Central Government, the State Government, the District Authority or any other authority or officer authorised as aforesaid.

10

Ap-16/25

B. **Section 188 in the Indian Penal Code, 1860**

188. Disobedience to order duly promulgated by public servant.—Whoever, knowing that, by an order promulgated by a public servant lawfully empowered to promulgate such order, he is directed to abstain from a certain act, or to take certain order with certain property in his possession or under his management, disobeys such direction, shall, if such disobedience causes or tends to cause obstruction, annoyance or injury, or risk of obstruction, annoyance or injury, to any person lawfully employed, be punished with simple imprisonment for a term which may extend to one month or with fine which may extend to two hundred rupees, or with both; and if such disobedience causes or trends to cause danger to human life, health or safety, or causes or tends to cause a riot or affray, shall be punished with imprisonment of either description for a term which may extend to six months, or with fine which may extend to one thousand rupees, or with both.

Explanation.—It is not necessary that the offender should intend to produce harm, or contemplate his disobedience as likely to produce harm. It is sufficient that he knows of the order which he disobeys, and that his disobedience produces, or is likely to produce, harm.

Illustration

An order is promulgated by a public servant lawfully empowered to promulgate such order, directing that a religious procession shall not pass down a certain street. A knowingly disobeys the order, and thereby causes danger of riot. A has committed the offence defined in this section.

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NHPC NEEPCO New Delhi North Eastern Electric Power Corporation

E Pybot

Apr 17/5

No. 40-3/2020-DM-I(A)
Government of India
Ministry of Home Affairs

North Block, New Delhi-110001
Dated 17th May, 2020

ORDER

Whereas, the National Disaster Management Authority (NDMA) in exercise of their powers under section 6(2)(I) of the Disaster Management Act, 2005, vide their Orders dated 24.03.2020, 14.04.2020 and 01.05.2020 had directed the National Executive Committee (NEC) to take lockdown measures so as to contain the spread of COVID-19 in the country;

Whereas, Chairperson NEC, in exercise of the powers conferred under Section 10(2)(I) of the Disaster Management Act, 2005, has issued Orders of even number on lockdown measures dated 24.03.2020, 29.03.2020, 14.04.2020, 15.04.2020 and 01.05.2020;

Whereas, save as otherwise provided in the guidelines annexed to this Order, all Orders issued by NEC under Section 10(2)(I) of the Disaster Management Act, 2005, shall cease to have effect from 18.05.2020;

Whereas, in exercise of the powers under section 6(2)(i) of the Disaster Management Act, 2005, NDMA has issued an Order number 1-29/2020 - PP dated 17.05.2020 directing the Chairperson, NEC that lockdown measures to contain the spread of COVID-19 be continued to be implemented in all parts of the Country, for a further period upto 31.05.2020;

Now therefore, under directions of the aforesaid Order of NDMA dated 17.05.2020, and in exercise of the powers, conferred under Section 10(2)(I) of the Disaster Management Act, 2005, the undersigned, in his capacity as Chairperson, NEC, hereby issues directions for strict implementation, to all the Ministries/ Departments of Government of India, State/Union Territory Governments and State/ Union Territory Authorities that lockdown measures to contain the spread of COVID-19 will continue for a period of upto 31.05.2020, as per the guidelines annexed to this Order, which will come into effect from 18.05.2020.

17/05/2020
Union Home Secretary

To:

1. The Secretaries of Ministries/ Departments of Government of India
2. The Chief Secretaries/Administrators of States/Union Territories
   (As per list attached)

Copy to:

i. All members of the National Executive Committee.
ii. Member Secretary, National Disaster Management Authority.

NHPC NEEPCO New Delhi Power Transmission Corporation

Ap- 18/25

Guidelines on the measures to be taken by Ministries/ Departments of Government of India, State/ UT Governments and State/ UT Authorities for containment of COVID-19 in the country upto 31st May, 2020.

[As per Ministry of Home Affairs (MHA) Order No. 40-3/2020-DM-I (A) dated 17th May, 2020]

1. Lockdown shall continue to remain in force upto 31st May, 2020.

2. **The following activities shall continue to remain prohibited throughout the country:**

   i. All domestic and international air travel of passengers, except for domestic medical services, domestic air ambulance and for security purposes or purposes as permitted by MHA.

   ii. Metro rail services.

   iii. Schools, colleges, educational/ training/ coaching institutions etc. will remain closed. Online/ distance learning shall continue to be permitted and shall be encouraged.

   iv. Hotels, restaurants and other hospitality services, except those meant for housing health/ police/ Government officials/ healthcare workers/ stranded persons including tourists and for quarantine facilities; and running of canteens at bus depots, railway stations and airports. Restaurants shall be permitted to operate kitchens for home delivery of food items.

   v. All cinema halls, shopping malls, gymnasiums, swimming pools, entertainment parks, theatres, bars and auditoriums, assembly halls and similar places. Sports complexes and stadia will be permitted to open; however, spectators will not be allowed.

   vi. All social/ political/ sports/ entertainment/ academic/ cultural/ religious functions/ other gatherings and large congregations.

   vii. All religious places/ places of worship shall be closed for public. Religious congregations are strictly prohibited.

3. **The following activities shall be permitted with restrictions, except in the Containment Zones:**

   i. Inter-State movement of passenger vehicles and buses, with mutual consent of the State(s)/ UT(s) involved.

   ii. Intra-State movement of passenger vehicles and buses, as decided by the States and UTs.

   iii. Standard Operating Procedures (SOPs) for movement of persons, as mentioned in **Annexure I,** shall continue to operate.

4. **National Directives for COVID-19 Management**

   National Directives for COVID 19 Management, as specified in **Annexure II,** shall be followed throughout the country.

5. **Containment, Buffer, Red, Green and Orange Zones**

   i. The delineation of Red, Green and Orange Zones will be decided by the respective State and UT Governments, after taking into consideration the parameters shared by Ministry of Health & Family Welfare (MoHFW), Government of India (GoI).

17/5/2020

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ii. Within the Red and Orange Zones, Containment Zones and Buffer Zones will be demarcated by the District authorities, after taking into consideration the guidelines of MoHFW.

iii. In the Containment Zones, only essential activities shall be allowed. There shall be strict perimeter control to ensure that there is no movement of people in or out of these zones, except for medical emergencies and for maintaining supply of essential goods and services. Guidelines of MoHFW shall be taken into consideration for the above purpose.

iv. In the Containment Zones, there shall be intensive contact tracing, house-to-house surveillance, and other clinical interventions, as required.

6. **Night curfew**

The movement of individuals shall remain strictly prohibited between 7.00 pm to 7.00 am, except for essential activities. Local authorities shall issue orders, in the entire area of their jurisdiction, under appropriate provisions of law, such as prohibitory orders [Curfew] under Section 144 of CrPC, and ensure strict compliance.

7. **Protection of vulnerable persons**

Persons above 65 years of age, persons with co-morbidities, pregnant women, and children below the age of 10 years, shall stay at home, except for essential and health purposes.

8. **All other activities will be permitted, except those which are specifically prohibited.**

However, in Containment Zones, only essential activities shall be allowed, as mentioned in para 5(iii) above.

Further, States/ UTs, based on their assessment of the situation, may prohibit certain other activities in the various zones, or impose such restrictions as deemed necessary.

9. **Use of *Aarogya Setu***

i. *Aarogya Setu* enables early identification of potential risk of infection, and thus acts as a shield for individuals and the community.

ii. With a view to ensuring safety in offices and work places, employers on best effort basis should ensure that *Aarogya Setu* is installed by all employees having compatible mobile phones.

iii. District authorities may advise individuals to install the *Aarogya Setu* application on compatible mobile phones and regularly update their health status on the app. This will facilitate timely provision of medical attention to those individuals who are at risk.

10. **Special directions to ensure movement of persons and goods in certain cases**

i. All States/ UTs shall allow inter-State and intra-State movement of medical professionals, nurses and para medical staff, sanitation personnel and ambulances, without any restriction.

ii. All States/ UTs shall allow inter-State movement of all types of goods/ cargo, including empty trucks.

17/5/2020

Ap-20/25

iii. No State/ UT shall stop the movement of any type of goods/ cargo for cross land-border trade under Treaties with neighbouring countries.

11. Strict enforcement of the guidelines

i. State/ UT Governments shall not dilute these guidelines issued under the Disaster Management Act, 2005, in any manner.

ii. All the District Magistrates shall strictly enforce the above measures.

iii. In order to implement these measures, the District Magistrates will deploy Executive Magistrates as Incident Commanders in the respective local jurisdictions. The Incident Commander will be responsible for the overall implementation of these measures in their respective jurisdictions.

12. Penal provisions

Any person violating these measures will be liable to be proceeded against as per the provisions of Section 51 to 60 of the Disaster Management Act, 2005, besides legal action under Sec. 188 of the IPC, and other legal provisions as applicable. Extracts of these penal provisions are at **Annexure III**.

17/05/2020

Union Home Secretary

Annexure I

Standard Operating Procedures (SOPs) issued by MHA

i. SOP on transit arrangement for foreign national(s) in India issued vide Order dated April 02, 2020.

ii. SOP on movement of stranded labour within States/ UTs, issued vide Order dated April 19, 2020.

iii. SOP on sign-on and sign-off of Indian seafarers, issued vide Order dated April 21, 2020.

iv. SOP on movement of stranded migrant workers, pilgrims, tourists, students and other persons, issued vide Order dated April 29, 2020 and Order dated May 01, 2020.

v. SOP on movement of Indian Nationals stranded outside the country and of specified persons to travel abroad, issued vide Order dated May 5, 2020.

vi. SOP on movement of persons by train, issued vide Order dated May 11, 2020.

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Annexure II

National Directives for COVID 19 Management

i. Wearing of face cover is compulsory in all public and work places.

ii. Spitting in public & work places shall be punishable with fine, as may be prescribed in accordance with its laws, rules or regulations by the State/ UT local authority.

iii. Social distancing shall be followed by all persons in public places and in transport.

iv. Marriage related gathering shall ensure social distancing, and the maximum number of guests allowed shall not be more than 50.

v. Funeral/ last rites related gathering shall ensure social distancing, and the maximum numbers allowed shall not be more than 20.

vi. Consumption of liquor, *paan*, *gutka*, tobacco etc. in public places is not allowed.

vii. Shops will ensure minimum six feet distance (*2 gaz ki doori*) among customers and shall not allow more than 5 persons at the shop.

Additional directives for Work Places

viii. As far as possible, the practice of work from home should be followed.

ix. Staggering of work/ business hours shall be followed in offices, work places, shops, markets and industrial & commercial establishments.

x. Provision for thermal scanning, hand wash and sanitizer will be made at all entry and exit points and common areas.

xi. Frequent sanitization of entire workplace, common facilities and all points which come into human contact e.g. door handles etc., shall be ensured, including between shifts.

xii. All persons in charge of work places shall ensure social distancing through adequate distance between workers, adequate gaps between shifts, staggering the lunch breaks of staff, etc.

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13/5/2020

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Annexure III

Offences and Penalties for Violation of Lockdown Measures

A. Section 51 to 60 of the Disaster Management Act, 2005

51. Punishment for obstruction, etc.—Whoever, without reasonable cause —

(a) obstructs any officer or employee of the Central Government or the State Government, or a person authorised by the National Authority or State Authority or District Authority in the discharge of his functions under this Act; or

(b) refuses to comply with any direction given by or on behalf of the Central Government or the State Government or the National Executive Committee or the State Executive Committee or the District Authority under this Act,

shall on conviction be punishable with imprisonment for a term which may extend to one year or with fine, or with both, and if such obstruction or refusal to comply with directions results in loss of lives or imminent danger thereof, shall on conviction be punishable with imprisonment for a term which may extend to two years.

52. Punishment for false claim.—Whoever knowingly makes a claim which he knows or has reason to believe to be false for obtaining any relief, assistance, repair, reconstruction or other benefits consequent to disaster from any officer of the Central Government, the State Government, the National Authority, the State Authority or the District Authority, shall, on conviction be punishable with imprisonment for a term which may extend to two years, and also with fine.

53. Punishment for misappropriation of money or materials, etc.—Whoever, being entrusted with any money or materials, or otherwise being, in custody of, or dominion over, any money or goods, meant for providing relief in any threatening disaster situation or disaster, misappropriates or appropriates for his own use or disposes of such money or materials or any part thereof or wilfully compels any other person so to do, shall on conviction be punishable with imprisonment for a term which may extend to two years, and also with fine.

54. Punishment for false warning.—Whoever makes or circulates a false alarm or warning as to disaster or its severity or magnitude, leading to panic, shall on conviction, be punishable with imprisonment which may extend to one year or with fine.

55. Offences by Departments of the Government.—(1) Where an offence under this Act has been committed by any Department of the Government, the head of the Department shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly unless he proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a Department of the Government and it is proved that the offence has been committed with the consent or connivance of, or is attributable to any neglect on the part of, any officer, other than the head of the Department, such officer shall be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

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56. Failure of officer in duty or his connivance at the contravention of the provisions of this Act.—Any officer, on whom any duty has been imposed by or under this Act and who ceases or refuses to perform or withdraws himself from the duties of his office shall, unless he has obtained the express written permission of his official superior or has other lawful excuse for so doing, be punishable with imprisonment for a term which may extend to one year or with fine.

57. Penalty for contravention of any order regarding requisitioning.—If any person contravenes any order made under section 65, he shall be punishable with imprisonment for a term which may extend to one year or with fine or with both.

58. Offence by companies.—(1) Where an offence under this Act has been committed by a company or body corporate, every person who at the time the offence was committed, was in charge of, and was responsible to, the company, for the conduct of the business of the company, as well as the company, shall be deemed to be guilty of the contravention and shall be liable to be proceeded against and punished accordingly:

Provided that nothing in this sub-section shall render any such person liable to any punishment provided in this Act, if he proves that the offence was committed without his knowledge or that he exercised due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a company, and it is proved that the offence was committed with the consent or connivance of or is attributable to any neglect on the part of any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also, be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

Explanation.—For the purpose of this section—

(a) "company" means anybody corporate and includes a firm or other association of individuals; and

(b) "director", in relation to a firm, means a partner in the firm.

59. Previous sanction for prosecution.—No prosecution for offences punishable under sections 55 and 56 shall be instituted except with the previous sanction of the Central Government or the State Government, as the case may be, or of any officer authorised in this behalf, by general or special order, by such Government.

60. Cognizance of offences.—No court shall take cognizance of an offence under this Act except on a complaint made by—

(a) the National Authority, the State Authority, the Central Government, the State Government, the District Authority or any other authority or officer authorised in this behalf by that Authority or Government, as the case may be; or

(b) any person who has given notice of not less than thirty days in the manner prescribed, of the alleged offence and his intention to make a complaint to the National Authority, the State Authority, the Central Government, the State Government, the District Authority or any other authority or officer authorised as aforesaid.

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B. Section 188 in the Indian Penal Code, 1860

188. Disobedience to order duly promulgated by public servant.—Whoever, knowing that, by an order promulgated by a public servant lawfully empowered to promulgate such order, he is directed to abstain from a certain act, or to take certain order with certain property in his possession or under his management, disobeys such direction, shall, if such disobedience causes or tends to cause obstruction, annoyance or injury, or risk of obstruction, annoyance or injury, to any person lawfully employed, be punished with simple imprisonment for a term which may extend to one month or with fine which may extend to two hundred rupees, or with both; and if such disobedience causes or trends to cause danger to human life, health or safety, or causes or tends to cause a riot or affray, shall be punished with imprisonment of either description for a term which may extend to six months, or with fine which may extend to one thousand rupees, or with both.

Explanation.—It is not necessary that the offender should intend to produce harm, or contemplate his disobedience as likely to produce harm. It is sufficient that he knows of the order which he disobeys, and that his disobedience produces, or is likely to produce, harm.

Illustration

An order is promulgated by a public servant lawfully empowered to promulgate such order, directing that a religious procession shall not pass down a certain street. A knowingly disobeys the order, and thereby causes danger of riot. A has committed the offence defined in this section.

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North Eastern Electric Power Corporation
New Delhi

Appendix_4

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GOVERNMENT OF ASSAM
ASSAM STATE DISASTER MANAGEMENT AUTHORITY
Ancillary Block, Janata Bhawan, Dispur, Guwahati-781006
Phone: 0361-2237221 (O); E-mail: asdmaghy@gmail.com

ORDER

No. ASDMA.28/2021/92 Dated 15th June, 2021

Whereas, the Assam State Disaster Management Authority (ASDMA) has vide orders of May 4, 2021, May 12, 2021, May 15, 2021 and May 17, 2021 have issued certain directives related to Containment Zones, gatherings, work places, educational institutions, public transport, restriction on movement of individuals including night curfew, restriction on inter-district transport services and penal provisions for both rural and urban areas across the State of Assam for containment of COVID-19 pandemic in Assam.

Whereas, the Assam State Disaster Management Authority (ASDMA) has vide order of May 25, 2021 issued directives on restrictive measures for containment of COVID-19 in both rural and urban areas across the State upto June 5, 2021.

Whereas, the Assam State Disaster Management Authority (ASDMA) has vide order of June 4, 2021 issued directives on curfew hours, gatherings, work places and inter-district movement to be uniformly applicable in both rural and urban areas across the State upto 5 AM of June 16, 2021.

Whereas, the Ministry of Home Affairs (MHA) vide order dated 27th May, 2021 has urged the States/ UTs to continue compliance to the containment measures as envisaged in MHA order dated 29th April,2021 till 30th June, 2021.

Whereas, the situation of COVID-19 in the State has been reviewed and observed that, though the number of COVID-19 patients and positivity rate is declining in some districts, the overall situation is still precarious, for which adequate containment measures for both urban and rural areas are still necessary for containment of COVID-19 across the State.

Now, therefore, in exercise of the powers, conferred under Section 22(2) (h) of the Disaster Management Act, 2005, the undersigned, in his capacity as Chairperson, State Executive Committee of the State Disaster Management Authority, Assam, do hereby issues the following directives which will remain in force w.e.f 5 AM of June 16, 2021 till 5 AM of June 22, 2021.

A. Containment Zones-for urban and rural areas:

In case the test positivity of COVID-19 in any area reaches 5% or more in case of urban areas and 10% or more in case of rural areas in the last one week, District Magistrate will notify such areas as containment zone and ensure necessary containment measures for COVID-19 as envisaged in MoHFW, GoI advisory dated 25th April, 2021 annexed with MHA order dated 29th April, 2021 (Annexure-A).

B. Night Curfew

Except for exemptions given in Annexure "B",

1. There shall be total ban on movement of individuals from 2 PM to 5 AM daily in Kamrup Metropolitan district considering the decreasing trend of COVID-19 cases including decrease in the daily case load.

NEEPCO New Delhi North Eastern Electric Power Corporation

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2. In the districts viz. **South Salmara, Majuli, Bongaigaon, Chirang, Udalguri, West Karbi Anglong, Dima Hasao and Charaideo** where the positive cases are showing less than 400 cumulatively in last 10 days, the lockdown like conditions are here by relaxed and movement of individuals will be allowed from 5 AM to 5 PM daily.

3. Districts where the total number of cumulative cases and per day cases are still showing persistently high numbers, especially **Cachar, Tinsukia, Dibrugarh, Sonitpur and Nagaon** will be under close watch till 21st June, 2021. In case there is no improvement in the COVID status in these districts, stricter restrictions may follow.

4. In the districts other than the districts mentioned in 1 and 2 above, restrictions imposed vide order No ASDMA/28/2021/90 dated the 4th June 2021 shall continue to remain in force till June 22, 2021 i.e. total ban in movement of individuals from 1 PM to 5 AM daily.

C. Workplace and business/ commercial establishments:

1. Regulation Timing:

Sl No	Activities	Kamrup Metropolitan district	Districts with less than 400 positive cases in last 10 days (enumerated at B.2 above)	Other districts
1	Functioning of Government and Private Offices/Establishments.	Upto 1PM	Upto 4PM	Upto 12PM
2	Opening of Shops and commercial establishments	Upto 1PM	Upto 4PM	Upto 12PM
3	Dine in Restaurants, Dhabas and other eateries	Upto 1PM	Upto 4PM	Upto 12PM
4	Takeaway of food items from restaurants, dhabas and other eateries	Upto 2PM	Upto 5PM	Upto 1PM
5	Opening of Sale counters, showrooms etc. of cold storages and warehouses	Upto 1PM	Upto 4PM	Upto 12PM

2. All Government and Private Employees who have taken both doses of COVID-19 vaccine have to attend office mandatorily.

3. Government/semi government officers in the rank of Deputy Secretary and above and senior executives in Non-Government sector along with their key support staff will have to attend the office for emergency and urgent works irrespective of their vaccination status.

4. The organizations rendering Essential/Emergency Services, Law Enforcement Services and Election work will continue working without any restrictions.

5. Pregnant women employees and women with children of 5 years or below working under any Government / PSU / Financial Institutions / Private Organizations irrespective of their grade shall be eligible to work from home.

6. Persons with disabilities (PwDs) working in any Government/PSU/ Financial Institutions/Private organizations shall be exempted from attending duties in consonance with the O.M No.11013/9/2014/Estt.(A.III) dated 1st April, 2020 issued by DoPT, GoI. However, they may be encouraged to work from home.

D. Public Transport (Government and Private)-for urban and rural areas:

1. All Public transport authorities shall enforce COVID-19 appropriate behavior and seating inside the vehicles, carriers, containers etc.
2. Auto Rickshaws, cycle rickshaws and taxis shall operate with one driver and two passengers maintaining social distancing.
3. Pillion riding will be totally prohibited in two wheelers, except with women and children.
4. Wearing of face mask is mandatory even for a single person driving a vehicle. In case of persons travelling in any private car, up to 100 % of its seating capacity, wearing of face mask is mandatory for all the persons.

E. Educational Institutions (Government and Private) -for urban and rural areas:

1. All Educational Institutions including Schools/Colleges/Universities shall continue to provide quality virtual options. No physical classes are allowed.

F. Gatherings -for urban and rural areas:

1. No meeting / gathering at any open or closed spaces shall be allowed;
2. For marriages, only religious part will be allowed with presence of maximum of 10 (ten) persons. No reception parties will be allowed post or pre marriage.
3. All Religious places shall remain closed until further orders. However, the religious head of a religious place or his representative may perform minimal religious rituals/prayers
4. Funeral / last rites related gatherings shall not be more than 10 persons for each deceased.
5. In case of hotels/resorts, in-house guests may be allowed to dine-in up to the usual time of operation.
6. Delivery of essential goods through e-Commerce may continue with observance of COVID appropriate behavior.
7. Weekly haats / bazaars shall continue to be not allowed.
8. Pharmacies, Hospitals, Animal Care Centres and Veterinary clinics may operate without restrictions being providers of essential and emergency services.

G. Inter-district movement
All inter-district transport services and movement of people to and from other districts shall remain suspended till 5 AM of 22nd June, 2021.

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H. Miscellaneous

1. Wearing of face mask is compulsory in all public places.
2. Cold storages and warehouses may continue even after the time prescribed in table at item no C-1(5).
3. Shop owners shall ensure minimum six feet distance among customers and shall not allow more than 5 persons inside the shop. In addition, shop owners should compulsorily keep sanitizers and hand wash in their shops.
4. Shopkeepers and customers shall have to wear masks, hand gloves and maintain social distancing. Responsibility of maintenance of social distancing will be on the shop owner and failure to do so will be viewed very seriously and may entail summary closure of defaulting shops.
5. Industrial units and Tea gardens may function subject to observance of COVID appropriate behaviour. Head of the unit/tea garden shall be responsible for ensuring social distancing, mask wearing by workers and staff, sanitization of industrial premises, thermal scanning etc.

Other restrictions including odd- even formula for plying of vehicles, declaration of containment zones etc. as notified vide Order No.ASDMA.28/2021/63 dated 4th May, 2021 and ASDMA.24/2020/Pt-2/241 dated 12th May 2021 and ASDMA.24/2020/Pt-2/253 dated 15th May 2021 for urban and peripheral areas, restriction on inter district movement issued vide ASDMA.24/2020/Pt-2/255 dated 17th May, 2021, ASDMA/28/2021/90, dated the 4th June 2021, ASDMA.28/2021/86 dated 25th May, 2021 and exemptions via clarifications issued vide Order No.ASDMA.24/2020/Pt-2/250 dated 13th May, 2021 shall continue to remain in force except those specifically modified by this order.

(Jishnu Barua, IAS)
Chief Secretary, Assam.

Dated 15th June, 2021

Memo No. ASDMA.28/2021/92-A

Copy forwarded to:

1. All Additional Chief Secretaries to the Govt. of Assam, Dispur,Guwahati-6
2. The Director General of Police, Assam
3. All Principal Secretaries/Commissioner & Secretaries to the Govt. of Assam, Dispur, Guwahati-6
4. Commissioner of Police, Guwahati-6
5. The Principal Secretaries of BTC, NCHAC, KAAC.
6. All Deputy Commissioners
7. The Director, Directorate of Information and Public Relations, Assam
8. All Superintendent of Police
9. S.O to the Chief Secretary, Assam, Guwahati-6
10. PPS to Hon'ble Chief Minister, Assam
11. All P.S to Hon'ble Minister, Assam, Dispur, Guwahati-6

Gyanendra Tripathi 15/6/2021
(Gyanendra Tripathi, IAS)
Chief Executive Officer, ASDMA

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GOVERNMENT OF ASSAM
ASSAM STATE DISASTER MANAGEMENT AUTHORITY
Ancillary Block, Janata Bhawan, Dispur, Guwahati-781006
Phone: 0361-2237221 (O); E-mail: asdmaghy@gmail.com

ORDER

No. ASDMA.24/2020/Pt-2/241 Dated 12th May, 2021

Whereas, the Assam State Disaster Management Authority (ASDMA) has vide order of 04-05-2021 issued consolidated and revised guidelines for all districts for containment of COVID-19 pandemic in Assam.

Whereas, the positivity rate of COVID-19 cases in the urban and adjacent areas have shown significant surge in the COVID -19 cases during last few days and require stricter COVID containment measures.

Now, therefore in exercise of the powers, conferred under Section 22(2) (h) of the Disaster Management Act, 2005, the undersigned, in his capacity as Chairperson, State Executive Committee of the State Disaster Management Authority, Assam, hereby issues the following directives which will be applicable in respect of urban areas and adjacent areas within 5 km radius from the periphery of municipal corporation / municipal boards / revenue towns which shall come into force with effect from 5 AM of May 13, 2021 until further orders.

1. All shops and commercial establishments shall shut down at 1 PM on all days.
2. Weekly haats / bazaars shall not be allowed for 15 days.
3. Restaurants, Dhabas and other eateries can entertain dine-in guest only up to 1 PM after which only home delivery of food will be allowed.
4. Restaurants operating within a Hotel or Resort can allow outside guests up to 1 PM only after which only in-house guests of the Hotel/Resort may be given room service.
5. Delivery of essential goodsthrough e-Commerce may continue with observance of COVID appropriate behavior.
6. Cold storages and warehouses may continue after 1PM. However, sale counters, showrooms etc. attached to these warehouses or cold storages shall not operate after 1PM.
7. Pharmacies, Hospitals, Animal Care Centres and Veterinary clinics may operate without restrictions being providers of essential and emergency services.
8. All Educational Institutions including Schools/Colleges/Universities must provide quality virtual options. No physical classes shall be allowed for 15 days.
9. All offices both Government and Non-Government shall shut down for 15 days.
10. Government / semi government officers in the rank of Deputy Secretary and above and senior executives in Non-Government sector along with their key

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support staff will be allowed to attend office upto 1 PM only for emergency and essential works.

However, 9 and 10 above will not be applicable for organizations rendering Essential/Emergency Services, Law Enforcement Services and Election work.

11. In case the test positivity of COVID-19 in any area reaches 5% or more in the last one week, District Magistrate will notify such areas as containment zone and ensure necessary containment measures for COVID-19 as envisaged in MoHFW, GoI advisory dated 25th April,2021 annexed with MHA order dated 29th April,2021 **(Annexure-A).**
12. Marriages and religious functions will be only private affairs and be allowed with presence of maximum of 10 (ten) persons. No reception parties will be allowed post or pre marriage.
13. Funeral / last rites related gatherings shall not be more than 10 persons.
14. All Religious places shall remain closed for 15 days. However, the religious head of a religious place or his representative may perform minimal religious rituals/prayers
15. All public transport will be allowed to operate only upto 30% of seating capacity.
16. Auto Rickshaws, cycle rickshaws and taxis shall operate with one driver and two passengers.
17. Pillion riding will be totally prohibited in two wheelers, except with women and children.
18. All vehicles other than government vehicles will be allowed to ply in accordance with an odd- even formula to be decided by the jurisdictional District Disaster Management Authority between 5AM to 2PM. However, this restriction shall not apply to personal vehicles used for medical emergencies.
19. There shall be total ban on movement of individuals from 2 PM to 5 AM daily, except for exemptions specified in Order No. ASDMA.28/2021/63 dated 4th May, 2021.
20. **In respect of areas not covered by this order, the regulations given vide order No. ASDMA.28/2021/63 dated 4th May, 2021 shall remain in force.**

12/5/2021

(Jishnu Barua, IAS)
Chief Secretary, Assam.
Dated 12th May, 2021

Memo No. ASDMA.24/2020/Pt-2/241-A
Copy forwarded to:

1. All Additional Chief Secretaries to the Govt. of Assam, Dispur,Guwahati-6
2. The Director General of Police, Assam

Ans 47

3. All Principal Secretaries/Commissioner & Secretaries to the Govt. of Assam, Dispur, Guwahati-6
4. Commissioner of Police, Guwahati-6
5. The Principal Secretaries of BTC, NCHAC, KAAC.
6. All Deputy Commissioners
7. The Director, Directorate of Information and Public Relations, Assam
8. All Superintendent of Police
9. S.O to the Chief Secretary, Assam, Guwahati-6
10. PPS to Hon'ble Chief Minister, Assam
11. All P.S to Hon'ble Minister, Assam, Dispur, Guwahati-6

Gyanendra Tripathi 12/5/2021
(Gyanendra Tripathi, IAS)
Chief Executive Officer, ASDMA

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ANNEXURE-A

No. 40-3/2020-DM-I(A)
Government of India
Ministry of Home Affairs

North Block, New Delhi-110001
Dated 29th April, 2021

ORDER

Whereas, an Order of even number dated 23.03.2021 was issued for effective control of COVID-19 in the country, for a period upto 30.04.2021;

And whereas, considering the unprecedented surge in COVID-19 cases across the country, Ministry of Health & Family Welfare (MoHFW) vide DO No. Z.28015/85/2021-DM Cell dated 25th April 2021, has issued an advisory to all States and Union Territories (UTs), for implementing intensive, local and focused containment framework, in specific districts/ cities/ areas, identified based on a prescribed criterion;

Whereas, in exercise of the powers under section 6(2)(i) of the Disaster Management Act, 2005, National Disaster Management Authority (NDMA) has directed the undersigned to issue an order, for ensuring compliance on the focused containment measures, as mentioned in the aforesaid MoHFW letter dated 25.04.2021, for containment of COVID-19 in the country;

Now, therefore, in exercise of the powers, conferred under Section 10(2)(l) of the Disaster Management Act 2005, the undersigned, hereby directs the State/ Union Territory Governments and State/ Union Territory Authorities to consider the containment measures for COVID-19, as conveyed vide aforesaid MoHFW advisory dated 25.04.2021, as per **Annexure-I**, for immediate implementation in their State/ UT, based on the assessment of the situation, until 31.05.2021. States/ UTs, will take the necessary containment measures, under the relevant provisions of the Disaster Management Act 2005. It is further directed that:

(i) The National Directives for COVID-19 Management, as specified in **Annexure-II**, shall continue to be strictly followed throughout the country.

(ii) All the District Magistrates shall strictly enforce the containment measures taken by States/ UTs and the National Directives.

(iii) Any person violating these measures will be liable to be proceeded against as per the provisions of Section 51 to 60 of the Disaster Management Act, 2005, besides legal action under Section 188 of the IPC, and other legal provisions as applicable.

29/04/2021

Union Home Secretary

and, Chairman, National Executive Committee (NEC)

To:
1. The Secretaries of Ministries/ Departments of Government of India
2. The Chief Secretaries/Administrators of States/Union Territories
   (As per list attached)

Copy to:
i. All Members of the National Executive Committee
ii. Member Secretary, National Disaster Management Authority

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ANNEXURE-I

Containment framework, as mentioned in Ministry of Health & Family Welfare (MoHFW), DO no. Z.28015/85/2021-DM Cell dated 25th April 2021

Annexure – A

Implementation Framework for community containment/large containment areas

Understanding the virus transmission dynamics:

The virus transmits through the human host. It is imperative to understand that in order to contain the transmission of the virus, the strategies involve not just containing the virus but also the human host.

Broadly, the strategies are:

1. **Individual actions** such as wearing of masks, maintaining a distance of 6 feet from others, sanitizing one's hands frequently and not attending any mass gathering; and

2. **Public Health measures** to contain the virus by:

   - quarantining and testing individuals suspected to be positive including contacts of SARS-CoV-2 positive persons, SARI cases, persons with flu like symptoms etc. and ensuring that they are not mobile and thus able to spread the infection
   - isolating all those who are positive, tracing their contacts, quarantining and testing them.
   - where there are clusters of cases, simply quarantining individuals or families will not help. In that case, containment zones with clear boundaries and stringent controls will be required to ensure that the infection does not spread outside. This is in line with the containment strategy followed worldwide and also already enumerated in SOPs of the Ministry of Health. This would mean a large geographical area like a city or district or well defined parts thereof, where cases are high and spiraling up, gets contained physically. However, regulated movement of public transport would be permitted.

3. **Evidence Based Decision:** The decision on where and when to go for large Containment Zone (CZ) has to be evidence based and done at the State/UT level after proper analysis of the situation, such as; the population affected, the geographical spread, the hospital infrastructure, manpower, the ease of enforcing boundaries etc.

4. However, in order to facilitate objective, transparent, and epidemiologically sound decision making, the following broad-based framework is provided to aid States UTs in selection of districts/areas:

S. No.	Parameter	Thresholds
1	Test positivity	Test positivity of 10% or more in the last one week
OR		
2	Bed occupancy	Bed occupancy of more than 60% on either oxygen supported or ICU beds

.....contd/-

Ap. A-10/

5. The areas requiring intensive action and local containment connotes specific and well defined geographical units such as cities/town/part of the towns/district headquarters/semi-urban localities/municipal wards/*panchayat areas* etc.

6. The areas so identified for intensive action and local containment will primarily focus on the following strategic areas of intervention:

A. Containment

i. Focus will be on containment as a major approach to flatten the current curve of the epidemic.
ii. Night curfew: Movement of individuals shall be strictly prohibited during night hours, except for essential activities. Local administration shall decide the duration of the night curfew hours and issue orders, in the entire area of their jurisdiction, under appropriate provisions of law, such as under Section 144 of CrPC, and ensure strict compliance.
iii. The spread of the infection has to be controlled through restricting the interminglingling amongst people, the only known host for the COVID-19 virus.
iv. Social/ political / sports / entertainment / academic / cultural / religious / festival-related and other gathering and congregations shall be prohibited.
v. Marriages (attended by up to 50 persons) and funerals/ last rites (attended by up to 20 persons) may be allowed.
vi. All shopping complexes, cinema halls, restaurants & bars, sports complexes, gym, spas, swimming pool and religious places should remain closed.
vii. Essential services and activities such as healthcare services, police, fire, banks, electricity, water and sanitation, regulated movement of public transport including all incidental services and activities needed for a smooth functioning of these activities shall continue. Such services shall continue in both public and private sector.
viii. Public transport (railways, metros, buses, cabs) to operate at a maximum capacity of 50%
ix. There shall be no restrictions on inter-state and intra-state movement including transportation of essential goods.
x. All offices, both government and private, to function with a maximum staff strength of 50%.
xi. All industrial and scientific establishments, both government and private may be allowed subject to the workforce following physical distancing norms. They shall also be tested through RAT (in case of individuals identified with flu like symptoms) from time to time.
xii. The SOPs already issued by MoHFW, including training manuals for surveillance teams and supervisors are available on the website & must be followed.
xiii. However, these are indicative activities, and States/ UTs should make a careful analysis of the local situation, areas to be covered, and probability of transmission and then take a decision.

contd/

Ap. 1 - 11/

xiv. The restrictions as above shall continue for a period of 14 days.

xv. Before declaring a containment area, make a public announcement, outlining the rationale for the same and the kind of restrictions that will be in place (a leaflet in local language may be distributed highlighting the gravity of the situation and restrictions to be followed)

xvi. Community volunteers, civil society organizations, ex- servicemen, and members of the local NYK/NSS centers etc. should be involved for sustainable management of containment activities, translating the aforementioned leaflets and for encouraging people in the community for sustained behavior change as well as vaccination.

B. Testing and Surveillance

Districts will continue with the strategy of 'Test-Track-Treat-Vaccinate' and implementation of Covid Appropriate Behavior across the district as the ongoing strategy for the management of COVID-19.

i. Ensure adequate testing and door to door case search in the area through adequate number of teams formed for such purpose.

ii. Plan for testing of all clinically resembling cases of Influenza like illness (ILI) & SARI through RAT. All symptomatic individuals turning out to be negative for SARS-CoV-2 infection with RAT need to be retested through RT PCR.

iii. Ensuring compliance of COVID Appropriate Behaviour aggressively both through creation of awareness through involvement of the community based organizations and through stringent regulatory framework.

C. Clinical Management

i. Analysis to be undertaken with respect to requirement of health infrastructure so as to manage the present and projected cases (next one month) and necessary action initiated to ensure sufficient oxygen-supported beds, ICU beds, ventilators, ambulances including creation of makeshift hospitals, as needed. Sufficient quarantine facilities shall also be re-activated.

ii. Leverage government, private health facilities including hospital facilities available with central ministries, railway coaches, temporary field hospitals etc.

iii. Ensure that people satisfying protocol for home isolation only are allowed under home isolation. Create a mechanism for their regular monitoring through Call Centres along with regular visit of surveillance teams to such houses.

iv. Provision of a customized kit for all patients under home isolation, including detailed dos and don'ts to be followed by them.

v. Specific monitoring shall be done for high risk cases and their timely shifting to the health facility. Similarly, elderly and co-morbid contacts of positive cases shall be shifted to quarantine centres and monitored.

.....contd/-

B.A — 12/

vi. Appoint senior district officials as In-charge for all Covid dedicated hospitals and create a mechanism for seamless shifting of patients (including home isolation cases) as per their symptom to the relevant facilities.

vii. Ensure availability of sufficient ambulances for such purpose.

viii. Coordinate availability of oxygen, other related logistics, drugs etc. in collaboration with state officials and ensure their rational use.

ix. Oxygen therapy for the admitted cases shall follow the guidelines issued by Ministry of Health on the rational use of oxygen.

x. Use of investigative drugs (Remdesivir / Tocilizumab etc.) shall also strictly follow the clinical management protocol/advisories issued by Ministry of Health.

xi. Facility wise cases and deaths shall be analyzed on daily basis by the Incident Commander/District Collector/Municipal Commissioner. Death-audit shall be undertaken for all deaths in the hospitals and in the community to provide supportive supervision to field staff/hospitals.

D. Vaccination

100% vaccination for the eligible age-groups shall be undertaken duly creating additional vaccination centres and optimal capacity utilization of existing Centres.

E. Community Engagement

i. Ensure adequate advance information to community, also highlighting the need for stringent containment actions so as to win their involvement and support.

ii. Provide enough time for people movement for essential requirements etc. before announcing the large scale containment.

iii. Take necessary actions to avoid misinformation & panic in the community.

iv. Involve local level NGOs/CBOs/CSOs, Opinion Makers and subject experts to create a positive environment and for sustained dialogue with the community.

v. Create wide publicity on early warning signals and self-reporting so as to identify cases early and to prevent avoidable deaths among home isolation patients.

vi. Give wide publicity on the mechanism whereby people can get themselves tested, details of available health facilities, requisitioning an ambulance etc. (community based organizations should be encouraged to create WhatsApp groups for quick dissemination of information so that the individuals in need of prevention and/or care services do not suffer delay).

vii. Ensure that details of hospital beds and their vacancy status is made available on-line and also released to media on a daily basis.

viii. Details on availability of oxygen, drugs, vaccine and vaccination centres, including the guidelines related with use of Remdesivir/Tocilizumab etc. be also widely publicized so as to create confidence in the community.

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Ap. 4-13

ix. Community should be oriented about the feasibility of managing mild COVID-19 cases at home with appropriate monitoring of vital parameters such as temperature and oxygen saturation with the help of pulse oxymeter.

x. Need for COVID Appropriate Behaviour including regulatory framework for enforcement should be widely publicized.

xi. Build confidence in community duly highlighting the nature of disease, the fact that early identification helps in early recovery and more than 98% people recover to remove fear as well as stigma related with Covid-19. Involvement of civil society organizations to hold such orientations go a long way in this regard.

Ap. A – 14/

Annexure II

NATIONAL DIRECTIVES FOR COVID-19 MANAGEMENT

1. **Face coverings:** Wearing of face cover is compulsory in public places; in workplaces; and during transport.

2. **Social distancing:** Individuals must maintain a minimum distance of 6 feet (*2 gaz ki doori*) in public places.

   Shops will ensure physical distancing among customers.

3. **Spitting in public places** will be punishable with fine, as may be prescribed by the State/ UT local authority in accordance with its laws, rules or regulations.

   Additional directives for Work Places

4. **Work from home (WfH):** As far as possible the practice of WfH should be followed.

5. **Staggering of work/ business hours** will be followed in offices, work places, shops, markets and industrial & commercial establishments.

6. **Screening & hygiene:** Provision for thermal scanning, hand wash or sanitizer will be made at all entry points and of hand wash or sanitizer at exit points and common areas.

7. **Frequent sanitization** of entire workplace, common facilities and all points which come into human contact e.g. door handles etc., will be ensured, including between shifts.

8. **Social distancing:** All persons in charge of work places will ensure adequate distance between workers and other staff.

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Ap.1 – 15/

GOVERNMENT OF ASSAM
ASSAM STATE DISASTER MANAGEMENT AUTHORITY
Ancillary Block, Janata Bhawan, Dispur, Guwahati-781006
Phone: 0361-2237221 (O); E-mail: asdmaghy@gmail.com

ORDER

No. ASDMA.28/2021/63 Dated 4th May, 2021

Whereas, the Assam State Disaster Management Authority (ASDMA) has vide order of 30-04-2021 issued consolidated and revised guidelines for all districts for containment of COVID-19 pandemic in Assam.

Whereas, the positivity rate of COVID-19 cases in the state has shown significant rise increasing necessitating a revisit of the existing directives.

And Whereas, in the context of the continuing surge of infections in the second wave of COVID-19 pandemic, the Hon'ble Supreme Court of India vide its Order dated 30th April, 2021 in Suo Motu Writ Petition (Civil) No.3 of 2021 has directed the State Governments to take measures to curb the spread of the virus and urged to consider imposing a ban on mass gathering and super spreader events in the interest of public welfare.

Now, therefore in exercise of the powers, conferred under Section 22(2) (h) of the Disaster Management Act, 2005, the undersigned, in his capacity as Chairperson, State Executive Committee of the State Disaster Management Authority, Assam, hereby issues the revised and consolidated directives as follows which shall be in supersession of all earlier orders and shall come in force from **5.00 AM of May 5, 2021 and remain in force until further orders.**

A. Containment Zones:

In case the test positivity of COVID-19 reaches 10% or more in the last one week or Bed Occupancy either oxygen supported or ICU beds crosses 60% in a large geographical area or a city or district or well defined parts thereof, jurisdictional district magistrates will decide on declaring such areas as containment zones and ensure necessary containment measures for COVID-19 as envisaged in MoHFW, GoI advisory dated 25th April,2021 annexed with MHA order dated 29th April,2021 **(Annexure-A).**

B. Gatherings

1. No meeting / gathering at any open or closed spaces shall be allowed;
2. For marriages, only religious part will be allowed with presence of maximum of 20 (twenty) persons. No reception parties will be allowed post or pre marriage.
3. At all religious places, congregation of not more than five persons shall be allowed at any time.
4. Funeral / last rites related gatherings shall not be more than 20 persons for each deceased.

Ap 4 – 16/

5. All shops and commercial establishments shall shut down at 2.00 PM on all days.
6. Restaurants, Dhabas and other eateries can entertain dine-in guest only up to 2.00 PM. Takeaway including home delivery of food is allowed till 6.00 PM after which only home delivery of food will be allowed.
7. Restaurants operating within a Hotel or Resort can allow outside guests up to 2.00 PM only. However, in-house guests of the Hotel/Resort may be allowed to dine-in up to the usual time of operation.
8. Delivery of essential goods through e-Commerce may continue with observance of COVID appropriate behavior.
9. Cold storages and warehouses may continue after 2.00 PM. However, sale counters, showrooms etc. attached to these warehouses or cold storages shall not operate after 2.00 PM.
10. Pharmacies, Hospitals, Animal Care Centres and Veterinary clinics may operate without restrictions being providers of essential and emergency services.

C. Work Places (Government and Private)

1. All offices both private and Government shall shut down at 2.00 PM (1400 Hrs) on all days.
2. Except officers, only 50% employees can work from office.

   However, 1 and 2 above will not be applicable for organizations rendering Essential/Emergency Services, Law Enforcement Services and Election work.
3. Pregnant women employees and women with children of 5 years or below working under any Government / PSU / Financial Institutions / Private Organizations irrespective of their grade shall be eligible to work from home.
4. Persons with disabilities (PwDs) working in any Government/PSU/ Financial Institutions/Private organizations shall be exempted from attending duties in consonance with the O.M No.11013/9/2014/Estt.(A.III) dated 1st April, 2020 issued by DoPT, GoI. However, they may be encouraged to work from home.

D. Educational Institutions (Government and Private)

1. All Educational Institutions including Schools/Colleges/Universities must provide quality virtual options.
2. Education Department will issue detail guideline/SOP for uninterrupted education service keeping in view of the COVID-19 precautionary measures.

E. Public Transport (Government and Private)

1. All Public transport authorities shall enforce COVID-19 appropriate behavior and seating inside the vehicles, carriers, containers etc.
2. Auto Rickshaws, cycle rickshaws and taxis shall operate with one driver and two passengers maintaining social distancing.
3. City buses, Intra-district, Inter-district and Inter-state buses will be allowed to operate with 50% of seating capacity.
4. Wearing of face mask is mandatory even for a single person driving a vehicle. In case of persons travelling in any private car, up to 100 % of its seating capacity, wearing of face mask is mandatory for all the persons.

A19-17

F. Night Curfew

There shall be total ban on movement of individuals from 6.00 PM to 5.00 AM daily, except for exemptions as follows:

1. All Officials and persons, both government and private involved in emergency services and all other essential services on production of valid Identity card.
2. All Judicial officers / officials of courts of Assam on production of valid Identity card.
3. All private medical personnel such as doctors, nursing staff, paramedical staff etc. and other hospital services (such as hospitals, diagnostic centres, clinics, pharmacies, pharmaceutical companies and other medical & health services),
4. Pregnant women and patients for getting medical /health services.
5. Person coming from/going to Airports/Railway stations/ISBTs allowed to travel on production of valid ticket.
6. Officers/officials related to functioning of offices of Diplomats of various countries as well as persons holding any constitutional post on production of valid Identity card.
7. Electronic and print Media on production of valid Identity card.
8. There shall be no restriction on inter-state and intra-state movement / transportation of essential / non-essential goods. No separate permission / e-pass will be required for such movements.
9. Movement of persons related to commercial and private establishments providing following essential services/commodities shall be allowed:
   I. Shops dealing with food, groceries, fruits & vegetables, dairy & milk booths, meat & fish, animal fodder, pharmaceuticals, medicines and medical equipments.
   II. Banks, Insurance offices and ATMs.
   III. Telecommunications, Internet services, Broadcasting and Cable services, IT and IT enabled services.
   IV. Delivery of all essential goods including food, pharmaceuticals, medical equipments through e-commerce.
   V. Petrol pumps, LPG, CNG, petroleum and gas retail and storage outlets.
   VI. Power generation, transmission and distribution units and services.
   VII. Cold storage and warehousing services.
   VIII. Private security services.
   IX. Manufacturing units of essential commodities.
   X. Production units or services, which require continuous process
10. Persons who are going for COVID-19 vaccination.
11. All the employees / persons involved in operations related to forestry under the Environment & Forest department on production of valid Identity card.

G. Miscellaneous

1. Wearing of face mask is compulsory in all public places.

Ap.1 — 15/

2. Shop owners shall ensure minimum six feet distance among customers and shall not allow more than 5 persons inside the shop. In addition, shop owners should compulsorily keep sanitizers and hand wash in their shops.
3. Shopkeepers and customers shall have to wear masks, hand gloves and maintain social distancing. Responsibility of maintenance of social distancing will be on the shop owner and failure to do so will be viewed very seriously and may entail summary closure of defaulting shops.
4. Industrial units and Tea gardens may function subject to observance of COVID appropriate behaviour. Head of the unit/tea garden shall be responsible for ensuring social distancing, mask wearing by workers and staff, sanitization of industrial premises, thermal scanning etc.

H. **Penal Provisions:-**

1. Any person violating these measures will be liable to be proceeded against as per provisions of Section 51 to 60 of the Disaster Management Act, 2005, besides legal action under Sec. 188 of IPC and other legal provisions as applicable
2. Any person not wearing face mask and/ or spitting in public places shall be fined to the tune of Rs.1000/- vide ASDMA's earlier Order No. ASDMA/24/2020/Part-1/122 dt. 14/10/2020 which can be imposed by District wise Task Force comprising of District Disaster Management Authority, Magistracy, Police, Enforcement wing of District Transport Officer and Enforcement wing of Guwahati Municipal Corporation in their respective jurisdictions.

4/5/2021

(Jishnu Barua, IAS)
Chief Secretary, Assam.
Dated 4th May, 2021

Memo No. ASDMA.28/2021/53-A
Copy forwarded to:

1. All Additional Chief Secretaries to the Govt. of Assam, Dispur,Guwahati-6
2. The Director General of Police, Assam
3. All Principal Secretaries/Commissioner & Secretaries to the Govt. of Assam, Dispur, Guwahati-6
4. Commissioner of Police, Guwahati-6
5. The Principal Secretaries of BTC, NCHAC, KAAC.
6. All Deputy Commissioners
7. The Director, Directorate of Information and Public Relations, Assam
8. All Superintendent of Police
9. S.O to the Chief Secretary, Assam, Guwahati-6
10. PPS to Hon'ble Chief Minister, Assam
11. All P.S to Hon'ble Minister, Assam, Dispur, Guwahati-6
12. All P.S to Advisor to Hon'ble Chief Minister, Assam

Gyanendra Tripathi 4/5/2021

(Gyanendra Tripathi, IAS)
Chief Executive Officer, ASDMA

Ap.4 -19/

GOVERNMENT OF ASSAM
ASSAM STATE DISASTER MANAGEMENT AUTHORITY
Ancillary Block, Janata Bhawan, Dispur, Guwahati-781006
Phone: 0361-2237221 (O); E-mail: asdmaghy@gmail.com

ORDER

No. ASDMA.28/2021/41 Dated 30th April, 2021

Whereas, the Assam State Disaster Management Authority (ASDMA) has vide order No.ASDMA.28/2021/18 dated 26-04-2021 issued consolidated and revised guidelines for all districts for containment of COVID-19 pandemic in Assam for a period upto 1st May,2021.

Whereas, the Assam State Disaster Management Authority (ASDMA) has vide order No.ASDMA.28/2021/27 dated 27-04-2021 issued directives on total ban on movement of individuals from 8.00 PM to 5.00 AM daily as an emergency measure for well-being and safety of the peopleup to 1st May, 2021

Whereas, the Ministry of Home Affairs (MHA) has vide order No.40-3/2020-DM-I (A) dated 29th April, 2021 issued the guidelines for effective control of COVID-19 to be in force upto 31.05.2021.

Now, therefore in exercise of the powers, conferred under Section 22(2) (h) of the Disaster Management Act, 2005, the undersigned, in his capacity as Chairperson, State Executive Committee of the State Disaster Management Authority, Assam, hereby issues the revised and consolidated directives as follows which shall come in force with immediate effect and remain in force till **May 7, 2021.**

A. Containment Zones:

In case the test positivity of COVID-19 reaches 10% or more in the last one week or Bed Occupancy either oxygen supported or ICU beds crosses 60% in a large geographical area or a city or district or well defined parts thereof, where cases are high and spiraling up drastically, district magistrates will decide on declaring such areas as containment zones and ensure necessary containment measures for COVID-19 as envisaged in MoHFW, GoI advisory dated 25th April,2021 annexed with MHA order dated 29th April,2021 **(Annexure-A).**

B. Gatherings

1. Open functions to be allowed with the permission of the District Authority subject to strict adherence to COVID appropriate behavior, including wearing face mask, maintaining respiratory etiquette, practicing hand hygiene through frequent hand washing or hand sanitizers and maintain social distancing (6 feet). While granting such permission, District Authority will assess the public bearing capacity of the open space and allow gathering of only 50% of its capacity or 400 persons, whichever is lower.
2. In Closed venues like marriage halls and other commercial centres, gatherings up to 50%of the seating capacity to be allowed.

Ap. 4—30/

3. No standing audience shall be allowed in open/ closed venues.
4. Number of guests in Private functions at private venues (non-commercial) including marriages to be restricted to 100 persons.
5. Funeral / last rites related gatherings should ensure not more than 20 persons for each deceased.
6. Religious places/ places of worship should be allowed to be operated with 20 persons per hour, except the iconic religious places where it can be 50 persons per hour. However, if any religious place has only a small area, the management committee of such religious institution shall reduce the number of attendees accordingly.
7. All Market places / supermarkets / shops in the Malls / weekly market should be closed by 6.00 PM every day.
8. Restaurants, Dhabas and other eateries can entertain dine-in guest only up to 6.00 PM. However, takeaway / home delivery of food is allowed up to 8.00 PM. Thereafter, only home delivery of food may be allowed up to usual time of closure as per local regulations.
9. Restaurants operating within a Hotel or Resort can allow outside guests up to 6.00 PM only. However, in-house guests of the Hotel/Resort may be allowed to dine-in up to the usual time of operation.
10. Delivery of goods through e-Commerce may continue after 6.00 PM.
11. Cold storages and warehouses may continue beyond 6.00 PM. However, sale counters, showrooms etc. attached to these warehouses or cold storages shall close after 6.00 PM.
12. Pharmacies, Hospitals, Animal Care Centres and Veterinary clinics may operate without restrictions being providers of essential and emergency services.

C. Work Places (Government and Private)

1. Working from home and virtual working should be encouraged.
2. Except officers, only 50% employees can work from office. However, this will not be applicable for organizations rendering Essential/Emergency Services, Law Enforcement Services and Election work.
3. Meetings in the official chambers to be discouraged.
4. Pregnant women employees and women with children of 5 years or below working under any Government / PSU / Financial Institutions / Private Organizations irrespective of their grade shall be eligible to work from home.
5. Persons with disabilities (PwDs) working in any Government/PSU/ Financial Institutions/Private organizations shall be exempted from attending duties in consonance with the O.M No.11013/9/2014/Estt.(A.III) dated 1st April, 2020 issued by DoPT, GoI. However, they may be encouraged to work from home.
6. Social distancing at work places should be ensured through adequate gaps between shifts, staggering of lunch breaks of staff etc.

Ap 4 – 21/

7. Provision for thermal scanning, hand wash and sanitizer be made at all entry and exit points and common areas. In addition, sufficient quantities of handwash and sanitizer should be made available in the work places.
8. Frequent sanitization of entire workplace, common facilities and all points which come into human contact should be carried out.

D. Educational Institutions (Government and Private)

1. All Educational Institutions including Schools/Colleges/Universities must provide quality virtual options.
2. Not more than 50% students should attend in person on any day.
3. Schools should stagger class timings so that large scale release of students does not arise.
4. There will be no morning assembly/special assembly etc. in the educational institutions.
5. Preference to be given on online mode of teaching for primary classes.
6. Education Department will issue detail guideline/SOP for uninterrupted education service keeping in view of the COVID-19 precautionary measures.

E. Public Transport (Government and Private)

1. All Public transport authorities shall enforce COVID-19 appropriate behavior and seating inside the vehicles, carriers, containers etc.
2. Auto Rickshaws, cycle rickshaws and taxis shall operate with one driver and two passengers maintaining social distancing.
3. City buses, Intra-district, Inter-district and Inter-state buses will be allowed to operate with 50% of seating capacity.
4. No passenger shall be allowed to travel standing in the vehicle.
5. Wearing of mask and observance of COVID-19 appropriate behavior will be mandatory for all passengers.
6. Wearing of face mask is mandatory even for a single person driving a vehicle. In case of persons travelling in any private car, up to 100 % of its seating capacity, wearing of face mask is mandatory for all the persons.

F. Night Curfew

There shall be total ban on movement of individuals from 8.00 PM to 5.00 AM daily, except for exemptions as follows:

1. All Officials and persons, both government and private involved in emergency services such as Health and Family Welfare and all related medical establishments, Police, Prisons, Home Guards, Civil Defence, Fire and emergency services, District Administration, Pay & Account Office, Electricity, Water and Sanitation, Public Transport (Air/Railways/Buses) including all incidental services/activities that are essential for smooth functioning of all modes of public transport (such as handling of cargo, ticketing, air freight station, CFS, ICD etc.), Disaster Management and related services, NIC, NCC and Municipal services, and all other essential services on production of

Ap.9 — 22/

valid Identity card. The uninterrupted delivery of public services shall be ensured by the concerned departments/agencies.

2. All Judicial officers / officials of courts of Assam on production of valid Identity card.
3. All private medical personnel such as doctors, nursing staff, paramedical staff etc. and other hospital services (such as hospitals, diagnostic centres, clinics, pharmacies, pharmaceutical companies and other medical & health services).
4. Pregnant women and patients for getting medical /health services.
5. Person coming from/going to Airports/Railway stations/ISBTs allowed to travel on production of valid ticket.
6. Officers/officials related to functioning of offices of Diplomats of various countries as well as persons holding any constitutional post on production of valid Identity card.
7. Electronic and print Media on production of valid Identity card.
8. There shall be no restriction on inter-state and intra-state movement / transportation of essential / non-essential goods. No separate permission / e-pass will be required for such movements.
9. Movement of persons related to commercial and private establishments providing following essential services/commodities shall be allowed:
   I. Shops dealing with food, groceries, fruits & vegetables, dairy & milk booths, meat & fish, animal fodder, pharmaceuticals, medicines and medical equipments.
   II. Banks, Insurance offices and ATMs.
   III. Telecommunications, Internet services, Broadcasting and Cable services, IT and IT enabled services.
   IV. Delivery of all essential goods including food, pharmaceuticals, medical equipments through e-commerce.
   V. Petrol pumps, LPG, CNG, petroleum and gas retail and storage outlets.
   VI. Power generation, transmission and distribution units and services.
   VII. Cold storage and warehousing services.
   VIII. Private security services.
   IX. Manufacturing units of essential commodities.
   X. Production units or services, which require continuous process
10. Persons who are going for COVID-19 vaccination.
11. All the officials/persons entrusted with election related works either by Government authorities or by private enterprises or by the authorities of any political party or contesting candidate on production of a valid Identity card/ engagement letter / appointment order / work order.
12. All the employees / persons involved in operations related to forestry under the Environment & Forest department on production of valid Identity card.

Ap.4 - 23/

G. Miscellaneous

1. Wearing of face mask is compulsory in all public places.
2. Shop owners shall ensure minimum six feet distance among customers and shall not allow more than 5 persons inside the shop. In addition, shop owners should compulsorily keep sanitizers and hand wash in their shops.
3. Shopkeepers and customers shall have to wear masks, hand gloves and maintain social distancing. Responsibility of maintenance of social distancing will be on the shop owner and failure to do so will be viewed very seriously and may entail summary closure of defaulting shops.
4. Barber shops, salons and parlours shall continue to provide service with strict compliance of COVID-19 appropriate behavior such as wearing of face masks, face cover, hand gloves.
5. Industrial units and Tea gardens may function subject to observance of COVID appropriate behaviour. Head of the unit/tea garden shall be responsible for ensuring social distancing, mask wearing by workers and staff, sanitization of industrial premises, thermal scanning etc.
6. Following Advisories earlier issued by ASDMA shall be strictly enforced
   a. Advisory for Daily & Weekly Markets/ Haat-Bazaars issued vide Order No.ASDMA.20/2020/Pt./217dt.14.07.2020 (Annexure-I)
   b. Advisory for Engagement of Domestic Help issued vide Order No.ASDMA.20/2020/Pt./187 dt. 20.05.2020 (Annexure-II)
   c. Advisory for Apartment Societies for COVID-19 prevention issued vide Order No.ASDMA.23/2020/03 dt. 27.03.2020 (Annexure-III)
   d. Advisory for elderly people issued vide Order No.ASDMA.23/2020/08 dt. 31.03.2020 (Annexure-IV)

H. Community Engagement

District Authorities will coordinate with the local level NGOs/CBOs/CSOs, Opinion Makers ,for effective compliance of the regulations above.

I. Penal Provisions:-

1. Any person violating these measures will be liable to be proceeded against as per provisions of Section 51 to 60 of the Disaster Management Act, 2005, besides legal action under Sec. 188 of IPC and other legal provisions as applicable.
2. Any person not wearing face mask and/ or spitting in public places shall be fined to the tune of Rs.1000/- vide ASDMA's earlier Order No. ASDMA/24/2020/Part-1/122 dt. 14/10/2020 which can be imposed by District wise Task Force comprising of District Disaster Management Authority, Magistracy, Police, Enforcement wing of District Transport Officer and Enforcement wing of Guwahati Municipal Corporation in their respective jurisdictions.

30/4/2021

(Jishnu Barua, IAS)
Chief Secretary, Assam.

Apx — 29/

Memo No. ASDMA.28/2021/41-A Dated 30th April, 2021

Copy forwarded to:

1. All Additional Chief Secretaries to the Govt. of Assam, Dispur,Guwahati-6
2. The Director General of Police, Assam
3. All Principal Secretaries/Commissioner & Secretaries to the Govt. of Assam, Dispur, Guwahati-6
4. Commissioner of Police, Guwahati-6
5. The Principal Secretaries of BTC, NCHAC, KAAC.
6. All Deputy Commissioners
7. The Director, Directorate of Information and Public Relations, Assam
8. All Superintendent of Police
9. S.O to the Chief Secretary, Assam, Guwahati-6
10. PPS to Hon'ble Chief Minister, Assam
11. All P.S to Hon'ble Minister, Assam, Dispur, Guwahati-6
12. All P.S to Advisor to Hon'ble Chief Minister, Assam

(Gyanendra Tripathi 30/4/2021)
(Gyanendra Tripathi, IAS)
Chief Executive Officer, ASDMA

Ap.4-35/-

GOVERNMENT OF ASSAM
ASSAM STATE DISASTER MANAGEMENT AUTHORITY
Ancillary Block, Janata Bhawan, Dispur, Guwahati-781006
Phone: 0361-2237221 (O); E-mail: asdmaghy@gmail.com

ORDER

No. ASDMA.28/2021/27 Dated 27th April, 2021

Whereas, the Assam State Disaster Management Authority (ASDMA) has vide order No.ASDMA.28/2021/18 dated 26-04-2021 issued consolidated and revised guidelines for all districts for containment of COVID-19 pandemic in Assam.

And whereas, the situation of COVID-19 in Assam has been reviewed and it has been observed that there has been a rapid increase in the number of active cases of COVID-19 across the State and therefore, it is felt that night curfew needs to be imposed in all the districts of Assam, except for essential and emergency activities/services, as an emergency measure for well being and safety of the people

And, therefore in exercise of the powers, conferred under Section 22(2) (h) of the Disaster Management Act, 2005, the undersigned, in his capacity as Chairperson, State Executive Committee of the State Disaster Management Authority, Assam, hereby directs that there shall be total ban on movement of individuals from 8.00 PM to 5.00 AM daily, except for exemptions as follows:

1. Officers / officials of Government of India/ Government of Assam, its autonomous/subordinate offices & Public Corporations involved in emergency services such as Health and Family Welfare and all related medical establishments, Police, Prisons, Home Guards, Civil Defence, Fire and emergency services, District Administration, Pay & Account Office, Electricity, Water and Sanitation, Public Transport (Air/Railways/Buses) including all incidental services/activities that are essential for smooth functioning of all modes of public transport (such as handling of cargo, ticketing, air freight station, CFS, ICD etc.), Disaster Management and related services, NIC, NCC and Municipal services, and all other essential services on production of valid Identity card. The uninterrupted delivery of public services shall be ensured by the concerned departments/agencies.
2. All Judicial officers / officials of courts of Assam on production of valid Identity card.
3. All private medical personnel such as doctors, nursing staff, paramedical staff etc. and other hospital services (such as hospitals, diagnostic centres, clinics, pharmacies, pharmaceutical companies and other medical & health services).
4. Pregnant women and patients for getting medical /health services.
5. Person coming from/going to Airports/Railway stations/ISBTs allowed to travel on production of valid ticket.
6. Officers/officials related to functioning of offices of Diplomats of various countries as well as persons holding any constitutional post on production of valid Identity card.

NEEPCO New Delhi

A.4-26/

7. Electronic and print Media on production of valid Identity card
8. There shall be no restriction on inter-state and intra-state movement / transportation of essential / non-essential goods. No separate permission / e-pass will be required for such movements.
9. Movement of persons related to commercial and private establishments providing following essential services/commodities shall be allowed:
   I. Shops dealing with food, groceries, fruits & vegetables, dairy & milk booths, meat & fish, animal fodder, pharmaceuticals, medicines and medical equipments.
   II. Banks, Insurance offices and ATMs.
   III. Telecommunications, Internet services, Broadcasting and Cable services. IT and IT enabled services.
   IV. Delivery of all essential goods including food, pharmaceuticals, medical equipments through e-commerce.
   V. Petrol pumps, LPG, CNG, petroleum and gas retail and storage outlets.
   VI. Power generation, transmission and distribution units and services.
   VII. Cold storage and warehousing services.
   VIII. Private security services.
   IX. Manufacturing units of essential commodities.
   X. Production units or services, which require continuous process
10. Persons who are going for COVID-19 vaccination

Penal Provisions:-

1. Any person violating these measures will be liable to be proceeded against as per provisions of Section 51 to 60 of the Disaster Management Act, 2005, besides legal action under Sec. 188 of IPC and other legal provisions as applicable.

This order shall come into force with immediate effect and will remain in force till **May 1, 2021.**

This order shall operate in continuation and partial modification of Order No.ASDMA.28/2021/18 dated 26-04-2021.

27/4/2021

(Jishnu Barua, IAS)
Chief Secretary, Assam.

NEEPCO New Delhi North Eastern Electric Power Corporation

Memo No. ASDMA.28/2021/27-A Dated 27th April, 2021

Copy forwarded to:

1. All Additional Chief Secretaries to the Govt. of Assam, Dispur,Guwahati-6
2. The Director General of Police, Assam
3. All Principal Secretaries/Commissioner & Secretaries to the Govt. of Assam, Dispur, Guwahati-6
4. Commissioner of Police, Guwahati-6
5. The Principal Secretaries of BTC, NCHAC, KAAC.
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11. All P.S to Hon'ble Minister, Assam, Dispur, Guwahati-6
12. All P.S to Advisor to Hon'ble Chief Minister, Assam

Gyanendra Tripathi

(Gyanendra Tripathi, IAS)
Chief Executive Officer, ASDMA
27/4/2021

Ap.4—28/

GOVERNMENT OF ASSAM
ASSAM STATE DISASTER MANAGEMENT AUTHORITY
Ancillary Block, Janata Bhawan, Dispur, Guwahati-781006
Phone: 0361-2237221 (O); E-mail: asdmaghy@gmail.com

ORDER

No. ASDMA.28/2021/18 Dated 26th April, 2021

Whereas, the Ministry of Home Affairs (MHA) has vide order No.40-3/2020-DM-I (A) dated 23-03-2021 issued the guidelines for effective control of COVID-19 to be in force upto 30.04.2021.

Whereas, the Assam State Disaster Management Authority (ASDMA) has vide order No.ASDMA.28/2021/11 dated 20-04-2021 issued detailed guidelines for the districts where the number of active COVID-19 cases rises to 100 or more to be in force till 30th April,2021 .

And whereas, the active COVID-19 cases have been rapidly increasing in the districts with 24 districts reporting more than 100 cases.

And whereas, COVID-19 cases are likely to surpass this figure in some other districts as well.

Now, therefore in exercise of the powers, conferred under Section 22(2) (h) of the Disaster Management Act, 2005, the undersigned, in his capacity as Chairperson, State Executive Committee of the State Disaster Management Authority, Assam, hereby issues the revised and consolidated directives as follows which shall come in force with immediate effect and remain in force till **1st May, 2021.**

A. Gatherings

1. Open functions to be allowed with the permission of the District Authority subject to strict adherence to COVID appropriate behavior, including wearing face mask, maintaining respiratory etiquette, practicing hand hygiene through frequent hand washing or hand sanitizers and maintain social distancing (6 feet). While granting such permission, District Authority will assess the public bearing capacity of the open space and allow gathering of only 50% of its capacity or 400 persons, whichever is lower.
2. In Closed venues like marriage halls and other commercial centres, gatherings upto 50% of the seating capacity to be allowed.
3. No standing audience shall be allowed in open/ closed venues.
4. Number of guests in Private functions at private venues (non-commercial) including marriages to be restricted to 100 persons.
5. Funeral / last rites related gatherings should ensure not more than 20 persons for each deceased.
6. Religious places/ places of worship should be allowed to be operated with 20 persons per hour, except the iconic religious places where it can be 50 persons

per hour. However, if any religious place has only a small area, the management committee of such religious institution shall reduce the number of attendees accordingly.

7. All Market places / supermarkets / shops in the Malls / weekly market should be closed by 6.00 PM every day.
8. Restaurants, Dhabas and other eateries can entertain dine-in guest only up to 6.00 PM. However, take away/ home delivery is allowed up to the usual time of closure as per local regulations.
9. Restaurants operating within a Hotel or Resort can allow outside guests up to 6.00 PM only. However, in-house guests of the Hotel/Resort may be allowed to dine-in up to the usual time of operation.
10. Delivery of goods through e-Commerce may continue after 6.00 PM.
11. Cold storages and warehouses may continue beyond 6.00 PM. However, sale counters, showrooms etc. attached to these warehouses or cold storages shall close after 6.00 PM.
12. Pharmacies, Hospitals, Animal Care Centres and Veterinary clinics may operate without restrictions being providers of essential and emergency services.

B. Work Places (Government and Private)

1. Working from home and virtual working should be encouraged.
2. Except officers, only 50% employees can work from office. However, this will not be applicable for organizations rendering Essential/Emergency Services, Law Enforcement Services and Election work.
3. Meetings in the official chambers to be discouraged.
4. Pregnant women employees and women with children of 5 years or below working under any Government / PSU / Financial Institutions / Private Organizations irrespective of their grade shall be eligible to work from home.
5. Persons with disabilities (PwDs) working in any Government/PSU/ Financial Institutions/Private organizations shall be exempted from attending duties in consonance with the O.M No.11013/9/2014/Estt.(A.III) dated 1st April, 2020 issued by DoPT, GoI. However, they may be encouraged to work from home.
6. Social distancing at work places should be ensured through adequate gaps between shifts, staggering of lunch breaks of staff etc.
7. Provision for thermal scanning, hand wash and sanitizer be made at all entry and exit points and common areas. In addition, sufficient quantities of handwash and sanitizer should be made available in the work places.
8. Frequent sanitization of entire workplace, common facilities and all points which come into human contact should be carried out.

C. Educational Institutions (Government and Private)

1. All Educational Institutions including Schools/Colleges/Universities must provide quality virtual options.
2. Not more than 50% students should attend in person on any day.

Ap.A – 30/

3. Schools should stagger class timings so that large scale release of students does not arise.
4. There will be no morning assembly/special assembly etc. in the educational institutions.
5. Preference to be given on online mode of teaching for primary classes.
6. Education Department will issue detail guideline/SOP for uninterrupted education service keeping in view of the COVID-19 precautionary measures.

D. Public Transport (Government and Private)

1. All Public transport authorities shall enforce COVID-19 appropriate behavior and seating inside the vehicles, carriers, containers etc.
2. Auto Rickshaws, cycle rickshaws and taxis shall operate with one driver and two passengers maintaining social distancing.
3. City buses, Intra-district, Inter-district and Inter-state buses will be allowed to operate with 50% of seating capacity.
4. No passenger shall be allowed to travel standing in the vehicle.
5. Wearing of mask and observance of COVID-19 appropriate behavior will be mandatory for all passengers.
6. Wearing of face mask is mandatory even for a single person driving a vehicle. In case of persons travelling in any private car, up to 100 % of its seating capacity, wearing of face mask is mandatory for all the persons.

E. Miscellaneous

1. Wearing of face mask is compulsory in all public places.
2. Shop owners shall ensure minimum six feet distance among customers and shall not allow more than 5 persons inside the shop. In addition, shop owners should compulsorily keep sanitizers and hand wash in their shops.
3. Shopkeepers and customers shall have to wear masks, hand gloves and maintain social distancing. Responsibility of maintenance of social distancing will be on the shop owner and failure to do so will be viewed very seriously and may entail summary closure of defaulting shops.
4. Barber shops, salons and parlours shall continue to provide service with strict compliance of COVID-19 appropriate behavior such as wearing of face masks, face cover, hand gloves.
5. Industrial units and Tea gardens may function subject to observance of COVID appropriate behaviour. Head of the unit/tea garden shall be responsible for ensuring social distancing, mask wearing by workers and staff, sanitization of industrial premises, thermal scanning etc.
6. Following Advisories earlier issued by ASDMA shall be strictly enforced
   a. Advisory for Daily & Weekly Markets/ Haat-Bazaars issued vide Order No.ASDMA.20/2020/Pt./217dt.14.07.2020 (Annexure-I)

NESCO New Delhi North Eastern Electric Power Corporation

Ap.4 31

b. Advisory for Engagement of Domestic Help issued vide Order No.ASDMA.20/2020/Pt./187 dt. 20.05.2020 (Annexure-II)

c. Advisory for Apartment Societies for COVID-19 prevention issued vide Order No.ASDMA.23/2020/03 dt. 27.03.2020 (Annexure-III)

d. Advisory for elderly people issued vide Order No.ASDMA.23/2020/08 dt. 31.03.2020 (Annexure-IV)

F. **Penal Provisions:-**

1. Any person violating these measures will be liable to be proceeded against as per provisions of Section 51 to 60 of the Disaster Management Act, 2005, besides legal action under Sec. 188 of IPC and other legal provisions as applicable.

2. Any person not wearing face mask and/ or spitting in public places shall be fined to the tune of Rs.1000/- vide ASDMA's earlier Order No. ASDMA/24/2020/Part-1/122 dt. 14/10/2020 which can be imposed by District wise Task Force comprising of District Disaster Management Authority, Magistracy, Police, Enforcement wing of District Transport Officer and Enforcement wing of Guwahati Municipal Corporation in their respective jurisdictions.

The aforementioned advisories shall be applicable in addition to the guidelines issued by Ministry of Home Affairs (MHA), GoI, Ministry of Health and Family Welfare(MoH&FW), GoI and Health & Family Welfare Department, Government of Assam.

This Order supersedes earlier Order No. ASDMA.28/2021/11 dt. 20th April, 2021, ASDMA.28/2021/12 and ASDMA.28/2021/13 dt. 21st April, 2021.

26/4/2021

(Jishnu Barua, IAS)
Chief Secretary, Assam.

Memo No. ASDMA.28/2021/18-A Dated 26th April, 2021

Copy forwarded to:

1. All Additional Chief Secretaries to the Govt. of Assam, Dispur,Guwahati-6
2. The Director General of Police, Assam
3. All Principal Secretaries/Commissioner & Secretaries to the Govt. of Assam, Dispur, Guwahati-6
4. Commissioner of Police, Guwahati-6
5. The Principal Secretaries of BTC, NCHAC, KAAC.
6. All Deputy Commissioners

NEEPCO New Delhi North Eastern Electric Power Corporation

Ap. 4 - 32/32

7. The Director, Directorate of Information and Public Relations, Assam
8. All Superintendent of Police
9. S.O to the Chief Secretary, Assam, Guwahati-6
10. PPS to Hon'ble Chief Minister, Assam
11. All P.S to Hon'ble Minister, Assam, Dispur, Guwahati-6
12. All P.S to Advisor to Hon'ble Chief Minister, Assam

Gyanendra Tripathi 24/9/2020
(GyanendraTripathi, IAS)
Chief Executive Officer, ASDMA

Appendix-5 1/6

1st Floor, Pancom Chambers, 6-3-1090/1/A,
Raj Bhavan Road, Somajiguda, Hyderabad - 500 082.
Phones : 23311740, 23311194, 44756756 Fax : 23311348
E-mail : info@peseng.net Website : www.peseng.net

PES
Engineers
Private Limited
Mechanical, Electrical, Civil Engineers & Constructors

PESEPL/KHEP/PS-1/2021/079

15.05.2021

HM works

To,
The Chief General Manager / HOP
Kopili Hydro Electric Plant
NEEPCO Ltd., Umrongso,
Dimahasao (District) Assam – 788 931

Dear Sir,

SUB: Design, fabrication, supply, erection, testing & commissioning of penstock and steel in - liners in Umrong system of Kopili Hydro Electric Project (275 MW), Assam – **Hindrances & Delays - Reg.**

REF: 1) Work Order No.NEEPCO/QP/ED/C&P/F/C/KHEP(Restn)-546/Vol-I/ 2020-21/ 1878 dated 13.11.2020.
2) Our Letter No. PESEPL/KHEP/PS-1/2021/035 dated 10.03.2021.

With regards to the above-mentioned works, we wish to inform to you that the progress of work is not as planned. The delay in the nature of works and the reasons are listed below.

1. We were to receive the 1st lot of steel plates at site on 27.03.2021. This has been delayed due to multiple reasons, vessel shortages required for shipment, Lockdown imposed in Maharashtra, hence customs clearance is getting delay which in turn is leading to massive backlogs of clearance from port. The Port authorities have expressed that the backlogs in clearance of shipment from port is due shortage of manpower because of the Covid Pandemic and the lockdown. The shipment is presently at the Mumbai port and awaiting clearance. We are doing everything we can to ensure an early release of the same.

2. The 2nd Lot of material is also delayed and as on date the schedule of the shipment is 17.05.2021. We shall keep you informed in case of any further update in this regard.

3. There have been acute oxygen shortages across the country and the Government has issued multiple directives asking that all supplies of oxygen are to be stopped for non-medical reasons. As you are aware that it is not possible for us to make much work progress with oxygen, which is required in fabrication, however, we are in support of this directive by the Government and hope that you are too, as it is important at this point that the oxygen available is used for medical purposes.

Regd. Office : 6-3-1216/6/2, Umanagar, Begumpet, Hyderabad - 500 016. INDIA
Branch Office : 505, Nilgiri Apartments (Rear Block), 9, Barakhamba Road, New Delhi - 110001, Phone : 23353964
CIN : U74210TG1982PTC003513

Ap 5 - 2/6

4. The welding consumables like welding wires, rods etc. which were to be received at site during end of April are further delayed due to lockdowns.

5. Incessant rains also have delaying development of fabrication & Erection facilities nears ADIT-III and valve house area.

6. With the imposition of curfew / limited hours' operation of business establishment in Assam since 05.05.2021, managing industrial material has become big difficult and we are unable to achieve targets.

Considering the present situation of, lockdowns, SOP guidelines, we hope you understand that progress of works is hindered. These delays are beyond our control and will have direct impact on progress of work. With limited areas in which work can be done a lot of our workforce and machinery became idle. The second wave of the Covid pandemic has created havoc across the country and this has delayed our project progress as planned. We hope you realise that these delays cannot be attributed to us as they are for reasons beyond our control.

Thanking you

Yours faithfully,
For PES Engineers Private Limited

(A.Suresh Kumar)
Authorized Signatory

Copy to the following for information and record please :
1. The General Manager (C), Kopili HE Plant, NEEPCO Ltd., Umrongso
2. The DY.General Manager (C), HSM – I, Kopili HE Plant, NEEPCO Ltd., Umrongso

Ap.5-3/6

1st Floor, Pancom Chambers, 6-3-1090/1/A,
Raj Bhavan Road, Somajiguda, Hyderabad - 500 082.
Phones: 23311740, 23311194, 44756756 Fax: 23311348
E-mail: info@peseng.net Website: www.peseng.net

PES Engineers Private Limited

Mechanical, Electrical, Civil Engineers & Constructors

PESEPL/KHEP/PS-1/2021/083

20.05.2021

The Chief General Manager / HOP Kopili
Hydro Electric Plant NEEPCO Ltd.,
Umrongso, Dimahasao (District), Assam

Dear Sir,

SUB: Design, fabrication, supply, erection, testing & commissioning of penstock and steel in - liners in Umrong system of Kopili Hydro Electric Project (275 MW), Assam –**Delay** in transporting the material from Mumbai port – **Reg.**

REF: 1) Work Order No.NEEPCO/QP/ED/C&P/F/C/KHEP(Restn)-546/Vol-I/ 2020-21/ 1878 dated 13.11.2020.
2) Our Letter No. PESEPL/KHEP/PS-1/2021/035 dated 10.03.2021.
3) Our Letter No. PESEPL/KHEP/PS-1/2021/079 dated 15.05.2021

This is further to our letter under reference (3) above, though we have completed custom clearance of 1st lot of plate material at Mumbai port, we could not lift the material for further transportation from Mumbai to Kopili Project, Umrongso. Main reason being the port is closed due to **Extremely Severe Cyclonic Storm "Tauktae"** . This cyclone was formed along the west coast of Arabian sea on 14.05.2021 and dissipated on 19.05.2021. For your kind information, we have already placed vehicles at Mumbai port on 15.05.2021 for transportation of material which are still waiting at Mumbai port for clearance. These delays are not attributable to us. We are doing everything that we can to ensure an early release of the same. We shall keep you informed once the clearance for transportation of material is given by the port authorities.

This is for your kind information and understanding please.

Thanking you

Yours faithfully,
For PES Engineers Private Limited

(A.Suresh Kumar)
Authorized Signatory

Copy to the following for information and record please :
1. The General Manager (C), Kopili HE Plant, NEEPCO Ltd., Umrongso
2. The DY.General Manager (C), HSM – I, Kopili HE Plant, NEEPCO Ltd., Umrongso.

~ 407 ~

93

Ap.5 - 4/6

1st Floor, Pancom Chambers, 6-3-1090/1/A,
Raj Bhavan Road, Somajiguda, Hyderabad - 500 082.
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E-mail : info@peseng.net Website : www.peseng.net

PES Engineers Private Limited

Mechanical, Electrical, Civil Engineers & Constructors

PESEPL/KHEP/PS-1/2021/104 27.06.2021

The Chief General Manager / HOP Kopili
Hydro Electric Plant NEEPCO Ltd.,
Umrongso, Dimahasao (District), Assam

Dear Sir,

SUB: Design, fabrication, supply, erection, testing & commissioning of penstock and steel in - liners in Umrong system of Kopili Hydro Electric Project (275 MW), Assam – Progress of works and **Delay** in receipt of plate material – **Reg.**

REF: 1) WO No.NEEPCO/QP/ED/C&P/F/C/KHEP(Restn)-546/Vol-I/2020-21/1878 dtd 13.11.2020.
2) Our Letter No. PESEPL/KHEP/PS-1/2021/035 dated 10.03.2021.
3) Our Letter No. PESEPL/KHEP/PS-1/2021/079 dated 15.05.2021.
4) Our Letter No. PESEPL/KHEP/PS-1/2021/083 dated 20.06.2021.

With reference to the subject works, we wish to put the following for your kind information and further necessary action please.

1st LOT Shipment :- The 1st LOT of plate material comprising of 461 MT has been shipped from KOBE, Japan on 15.04.2021 and the same have been reached at Mumbai Port on 10.05.2021. However, further transportation of plate materials could not be taken-up till 20.05.2021 even after custom clearance on 13.05.2021, reason being the port was shut for 4 days due to Super cyclone TAUTE and two days for Ramadan festival. For your kind information, we have mobilized about 15 no's of trailors / trucks on 14.05.2021 for further transportation of plates to Kopili HEP. However, we could able to load material on to the trucks on 20.05.2021 and dispatched from Mumbai for Kopili HEP. On 02.06.2021, we have received 1st load of material at site. While last four vehicles were received at site on 28.06.2021 as the truck drivers suffered from covid and became sick, we had to change drivers from half way. There has been a substantial delay of about 20 days in receiving 1st Lot of plate material at site and this is due to adhering to covid protocols between districts and states. Initially our manufacturer has agreed to supply 500 MT of plates in 1st LOT, but he could able to deliver only 461 MT due to shipping line issues. There is a short supply of 39 MT in 1st Lot.

2nd LOT Shipment :- As per our agreement with manufacturer, we need to receive 500 MT vide 2nd LOT. However, the manufacturer is giving only 431 MT due to shipping line issues as informed. The short fall quantity is 69 MT. As assured, the manufacturer could not ship the material on 07.05.2021 as arrival ship has been delayed by 10 days. The ship commenced from KOBE port, Japan on 17.05.2021 and reached Mumbai port on 14.06.2021 instead of 12.06.2021 as per schedule. However, the ship could park on the berth on 15.06.2021 only due to rough sea conditions. Further, transportation from Mumbai port to Kopili got delayed due to Customs problems.

Ap5 - 5/6

3rd LOT Shipment:- Again there has been a short supply in 3rd Lot quantity. As against 600 MT, the manufacturer could ship only 308 MT due to shipping line issues again. The ship commenced from KOBE, Japan with a delay of 10 days due to delay in arrival ship. As per schedule, the vessel has to start on 07.05.2021, but it has started on 17.06.2021. It is scheduled to arrive at Mumbai port on 10.07.2021.

Fabrication & Erection of In-liners at ADIT – IV:- On 06.06.2021, we have started marking, cutting and rolling of Adit - II in-liner segments and by 10.06.2021 we were ready for erection of same at Adit-IV. But, due to continuous flow of water inside the tunnel we are unable to carryout erection works. Furthermore, NEEPCO has to cut concrete surface all-around by 500mm depth x 1.2 mtr long of HRT at starting and ending location between RD 301.000 - RD 537.408 to enable us fix anti-percolation rings to the first ferrule. This has not done so far. Therefore, we request you to get this concrete cutting work done at the earliest and handover the site in dry conditions. Please take-up these issues on priority and give us clearance at the earliest so that we can go ahead with erection activity. Until then all our activities shall be put on halt and we are not responsible for these delays which kindly note.

Fabrication & Erection of ferrules between AB-3 & 4 and AB-4 & 5:- We have already received certain quantity of plate material against these reaches. Marking of Bend -4 already done. However, further works came to stand still as the cutting of Anchor Block no.4 is still going on, while cutting works on Anchor Block – V are yet to begin it seems. Therefore, we are not able to take-up any activities in these reaches. Request you to expedite in this regard so that the work front in this reach is made available at the earliest.

Fabrication & Erection of Segments at Branch Line Location:- We wish to inform you that we have also received plate material against liners in this reach and we are ready for fabrication and erection. As per drawing, we have to fabricate and erect the pipes in this reach in three segments. We have planned to insert the segments through AB-8A for subsequent lowering into position. However, we cannot gain access at this location at this point of time as other agency works are still under progress and it would take certain time to get the work front at this location. We also wish to invite your attention to the joint site visit along with DGM (C), HSM-1 on 26.06.2021 for inspection on availability of erection work fronts, wherein it was opined that to commence erection activities immediately in this reach, the fabrication of pipe to be made in 04 segments instead of 03 segments as per drawing to facilitate insertion through tunnel upstream i.e. through upstream of MIV from power house for subsequent transportation to the location. However, DGM (C) has expressed that this aspect is subject to the approval of the design wing. Therefore, to avoid any further delay in this regard, we request you to issue communication in this regard to enable us forward the same to our design wing too to resubmit the drawings in this reach duly considering 04 long seam joints. Please be noted that this aspect would attract additional financial implication which we would submit in due course of time.

PES ENGINEERS PRIVATE LIMITED

Continuation Page

All these delays are not attributable to us which kindly note and further request you to treat the matters on PRIORITY and do the needful at the earliest to avoid any further delays.

Thanking you

Yours faithfully,
For PES Engineers Private Limited

(A.Suresh Kumar)
Authorized Signatory

Copy to the following for information and record please :

1. The General Manager (C), Kopili HE Plant, NEEPCO Ltd., Umrongso
2. The DY.General Manager (C), HSM – I, Kopili HE Plant, NEEPCO Ltd., Umrongso.

Ap 6-1/20

Appendix_6

(TURBINE)

The CGM (C)/HOP Kopili
North Eastern Electric Power Corporation Limited,
KOPSY,Kopili Hydro Electric Project
Umrangsu
e-mail: hop_khep@rediffmail.com
Kind Attn. Mr. Dilip Saikia

Imran N Shaikh
ANDRITZ HYDRO

m: +91 7480400474
t: +91 7480403393 / 394
imran.shaikh@andritz.com

Page: 1 (total 2)
October 19, 2022

AH letter No.: INS-KOPILI - 2022 - 143

Subject/Betreff: KOPILI – Request for time extension

Reference:
1. **No. QP/C&P/ F/E/KHEP-E/M Pkg/2093-Vol-I/06 Date: 03.04.2021**
2. **No. QP/C&P//F/E/KHEP-E/M Pkg/2093 - Vol-II 22 Dated: 07/04/2021**

Dear Sir,

This is with reference to the subject mentioned above, our communications regarding time extension and our subsequent meetings with NEEPCO's higher officials we would like to draw your kind attention on the issuance of **time extension for KOPILI project without levied of LD.**

Delay due to force majeure as per contract provision mentioned in **Section III General Terms and conditions clause # 15 Force Majeure**. The impact of Force Majeure due to which Andritz team could not travel to site for performing reverse engineering is considered (from 3rd April 2021 to 20th June 2021 i.e., 78 days) as this is the basic for designing.

Delay due to missing of design inputs and non-identical machines which were found after reverse engineering. Which caused us a loss of almost 04 months from July 2021 to October 2021. As this was beyond our control, we claim this period for time extension as per contract provision mentioned in **Section III General Terms and conditions clause # 10.7 - C**.

Post covid there is huge shortage and capacity constraints of Electrical grade steel raw material (Stator Sheets) which is imported from Europe. Also, there is impact on the transit time of the vessels sailing from Europe to India. The afore mentioned scarcity of electrical grade steel material and logistic issue caused an overall delay of 03 months for sourcing the Stator Core from Europe.

As controlling this is also beyond our control, we add this period for time extension as per contract provision mentioned in **Section III General Terms and conditions clause # 10.7 - C.**

As mentioned above the delivery of supplies extended due to various reasons beyond the genuine control of Andritz. In view of the above you are requested to consider the supply period extension as agreed in our meeting dated 26th August 2022 (Supplies of Unit # 4 by 15th Nov from our works, Unit # 3 by end December 2022, Unit # 2 by end January 2023 and Unit # 1

ANDRITZ

ए.जी. बोरदोलोई / A.J. Bordoloi
महाप्रबंधक(ई/मै) / G.M.(E/M)
कोपिली एच.ई.पी.पी. / Kopili Power House
कोप. नीएचपी लि., उमरांगसो (असम)
KHEP NEEPCO LTD, Umrangso(Assam)

Ap. 6 – 2/

unit-1 spiral case documents

The CGM (C)/HOP Kopili
North Eastern Electric Power Corporation Limited,
KOPSY,Kopili Hydro Electric Project
Umrangsu
e-mail: hop_khep@rediffmail.com
Kind Attn. Mr. Dilip Saikia

Imran N Shaikh
ANDRITZ HYDRO

p: +91 7480400474
f: +91 7480403393 / 394
imran.shaikh@andritz.com

AH letter No.: INS-KOPILI - 2022 - 180

Subject/Betreff: KOPILI – Material deterioration in Unit#1 spiral casing

Reference:

1. No. QP/C&P/ F/E/KHEP-E/M Pkg/2093-Vol-I/06 Date: 03.04.2021
2. No. QP/C&P/F/E/KHEP-E/M Pkg/2093 - Vol-I/ 22 Dated: 07/04/2021
3. NEEPCO email dated 20.01.2022 regarding Health assesment report of Spiral Casing Kopili Unit # I

Dear Sir,

This is in reference to the repair of spiral casing of Unit#1. Repair works are in progress at site. During the weld repair work, high level of deterioration was observed in spiral case in section W17-W18. The deterioration level is such that a through hole of diameter approx 5mm has formed on the spiral surface as soon as the welding electrode touches it (please refer enclosed photo No : 1, 2 and 3). This issue was immediatelly notified to NEEPCO team at site on 24th Dec. 2022. We have kept the welding activity on hold at that particular area (near Stay vane no. 8 to 12) till further decision in this matter.

We would like to inform that as per the "Health assesment report of Spiral Casing of Unit-1" submitted by NEEPCO under reference 3 above, the thickness of various location of spiral casing were in range on 25mm in that particular section (please refer enclosed page from report for location W17-W18). However, actually it is observed very less (less than 3mm) as there is through hole formed during weld repair.

ENGINEERED SUCCESS

ANDRITZ

Registered office: ANDRITZ Hydro Pvt Ltd./D-17, UPSIDC Industrial Area, Dist. Raisen, Near Bhopal / 462038 SAHDOHKAR, Madhya Pradesh / India /
p: +91 (755) 490 4001 / sanjay.hydro.in@andritz.com / andritz.com / CIN - U04010MP1998PTC011430
ANDRITZ Hydro Pvt Ltd./A-24/3, MCIE, Mathura Road / 110044 NEW DELHI / India / p: +91 (11) 4937 3500 / contact-hydro.in@andritz.com / andritz.com
ANDRITZ Hydro Pvt Ltd./46/5, Mathura Road / 121102 Village PRITHLA, Dist. Palwal, Haryana / India / p: +91 (127) 2260 781 / contact-

ए. जे. बोदासिंह / A.J. Bodasing
महाप्रबंधक (सी) / G.M (C)
कोपिली पावर हाउस / Kopili Power House
एन.ई.पी.को. लि., उमरांगसो (असम)

Ap 6 – 3/

You are requested to review the issue and re-verify the thickness of spiral casing so that we can further discuss in this regards. Till then the repair work will be on hold in Unit#1. In addition please provide below documents/information for verification:

- Batch test certificates of original material
- Extent of NDT performed by original manufacturer or during subsequent modification/ repair carried out at site
- History of modifications carried out earlier on this spiral casing since installation, including the details of activities (material replacement/ weld metal build-up, Inspection reports including NDT reports, etc)

Thanking you and assuring you of our best attention and services always.

Yours faithfully,

Imran Shaikh
Project Manager

Imran N Shaikh
Project Manager

Sanjal Yadav
System Engineer

ए.जे. बोरदोलोई / A.J. Bordoloi
महाप्रबन्धक (ई/मे) / G.M. (E/M)
कोपिली पावर हाउस / Kopili Power House
खेप, पीपको लि., उमरांगसो (असम)
KHEP, NEEPCO LTD., Umrangso (Assam)

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App - 4/

Imran N Shaikh
ANDRITZ HYDRO

p: +91 7480400474
f: +91 7480403393 / 394
imran.shaikh@andritz.com

Page: 1 (total 2)
May 18, 2023

The CGM (C)/HOP Kopili
North Eastern Electric Power Corporation Limited,
KOPSY,Kopili Hydro Electric Project
Umrangsu
e-mail: hop_khep@rediffmail.com
Kind Attn. Mr. Dilip Saikia

AH letter No : INS-KOPILI - 2022 – 253

Subject/Betreff: KOPILI – Request for time extension – Generator Portion

Reference:
1. No. QP/C&P/ F/E/KHEP-E/M Pkg/2093-Vol-I/06 Date: 03.04.2021
2. No. QP/C&P//F/E/KHEP-E/M Pkg/2093 - Vol-I/ 22 Dated: 07/04/2021

Dear Sir,

This is with reference to the subject mentioned above, our communications regarding time extension and our subsequent meetings with NEEPCO's higher officials we would like to draw your kind attention on the issuance of time extension for KOPILI project without levied of LD.

Delay due to force majeure as per contract provision mentioned in Section III General Terms and conditions clause # 15 Force Majeure. The impact of Force Majeure due to which Andritz team could not travel to site for performing reverse engineering is considered (from 3rd April 2021 to 20th June 2021 i.e., 78 days) as this is the basic for designing.

Delay due to missing of design inputs and non-identical machines which were found after reverse engineering. Which caused us a loss of almost 04 months from July 2021 to October 2021. As this was beyond our control, we claim this period for time extension as per contract provision mentioned in Section III General Terms and conditions clause # 10.7 - C.

Post covid there is huge shortage and capacity constraints of Electrical grade steel raw material (Stator Sheets) which is imported from Europe. Also, there is impact on the transit time of the vessels sailing from Europe to India. The afore mentioned scarcity of electrical grade steel material and logistic issue caused an overall delay of 03 months for sourcing the Stator Core from Europe.

As controlling this is also beyond our control, we add this period for time extension as per contract provision mentioned in Section III General Terms and conditions clause # 10.7 - C.

As mentioned above the delivery of supplies extended due to various reasons beyond the genuine control of Andritz. In view of the above you are requested to consider the supply period extension (Supplies of Unit # 4 by 10th June 20203 from our works, Unit # 3 by 15th June 2023, Unit # 2 & 1 by end June 2023) from our works while issuing the Time Extension for overall

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Ap 6 - 5/

completion time. The time period for erection and commissioning may kindly be considered from your end as we have only the scope of supervision for erection and commissioning. For any change in E&C timeline later on, Andritz shall be eligible for further time extension.

With the above submission, we earnestly request you to grant us the time extension without levied of LD and support in this hard time.

Thanking you and assuring you of our best attention and services always.

Yours faithfully,

For Andritz Hydro Pvt Ltd.

Imran Shaikh
Project Manager

Sudhir Jain
Commercial Manager

ए.जे. बोरदोलोई / A.J. Bordoloi
महाप्रबंधक(ई/मे) / G.M. (E/M)
कोपिली पावर हाउस / Kopili Power House
कोप, नीलिकां जि. [illegible] (असम)
[illegible]

ENGINEERED SUCCESS

Ap 6 – 6/

NEEPCO Schedule No. II Form No. 18

Application for extension of time

Part 1

1. Name of contractor: - Andritz Hydro Pvt Ltd.
2. Name of work as given in the agreement: - Detailed order for awarding the contract for "Reverse Engineering, Design and Engineering, Manufacture, Supply, Repair/Refurbishment of Runners at works, trial assembly of guide apparatus at works, supervision of erection works at site, Testing and Commissioning of turbine of Kopili Unit II, III and IV of 4X50MW Kopili Power Station at KHPS, NEEPCO Ltd. Umrangso, Dima Hasao, Assam- 788931
3. Estimated amount put to tender: -
4. Agreement No: - NEEPCO/KHPS/C&P/Kopili P.S./W-393/2021-22/4308 dated 06.01.2022
5. w/o No: -
6. Date of commencement of work as per agreement: - 23.12.2021
7. Period allowed as per agreement: - 12 months
8. Date of completion as per agreement: - 23.12.2022
9. Period for which extension granted previously: -

Unit No	Supply date	Erection and Commissioning
4	10th June 2023 from our works	15th July 2023
3	15th June 2023 from our works	15th Aug 2023
2	30th June 2023 from our works	30th Oct 2023
1	30th June 2023 from our works	30th Dec 2023

A.J. Bhakat
Manager (STHE) & GM (EM)
Kopili Power Plant
ANDRITZ HYDRO LTD. Umrangso (Assam)

Ap. 6 - 7/

10. Period for which extension applied for: -

Unit No	Supply date	Erection and Commissioning
4	30th June 2023 from our works	19th Aug 2023
3	15th June 2023 from our works	7th Sept 2023

11. Hindrance on account of which extension is applied for with dates on which hindrance occurred and the period for which these are likely to last.

Sl No.	Nature of Hindrance	Date of occurrence	Period for which it is likely to last	Period for which extension is required	Overlapping Period, if any	Net extension applied for	Remarks
1	Delay in design due to closure in Europe. (Section III General Terms and conditions clause # 10.7 – C) Beyond the control of contractor	23 Dec. 2021	22nd Jan 2022	23rd Dec 2021 to 22nd Jan 2022		30 days	(Section III General Terms and conditions clause # 10.7 – C) Beyond the control of contractor
2	Post covid there was huge shortage and capacity constraints of higher thickness plates which is imported from Europe. Also, there was impact on the transit time of the vessels sailing from Europe to India. (Section III General Terms and conditions clause # 10.7 – C) Beyond the control of contractor	1st April 2022	30th May 2022	1st April to 30th May 2022		60 days	(Section III General Terms and conditions clause # 10.7 – C) Beyond the control of contractor

Ap. 6 – 8/

Total period for which extension is now applied for on account of hindrance mentioned above, 35 days for Unit # 4 and 23 days for Unit # 3.

12. Extension required for extra work (in details) – Same as above.

13. Total extension of time required for 10 & 11 - 35 days for Unit # 4 and 23 days for Unit # 3.

- Unit # 4 FAC received on 19th August 2023 and machine handed over for commercial operation.
- Unit # 3 FAC received on 7th September 2023 and machine handed over for commercial operation.

For Anathz Hydro Pvt Ltd

Project Manager | Commercial Manager

Submitted to Asst. Manager

Signature of Contractor/ Supplier

Ap6 – 9/

Generator Equipment (EM-Works)

NEEPCO Schedule No. II Form No. 18

Application for extension of time

Part 1

1. Name of contractor: - Andritz Hydro Pvt Ltd.
2. Name of work as given in the agreement: -Detailed Design and Engineering, Manufacture, Testing at Works, Despatch, Inland Transportation including Freight and Insurance, Delivery to Project Site, Storage and Preservation of all Equipment at any intermediate locations, Supervision of Complete Assembly, Erection, Testing and Commissioning at site of all Electro-Mechanical Equipment to be installed in the Power House Kopili H.E. Power Plant (4x50MW), Assam, India, including Training of Purchaser's Personnel in Design, Engineering, Operation and Maintenance of Plant."
3. Estimated amount put to tender: -
4. Agreement No: - CP/C&P/F/E/KHEP-E/M Pkg/2093-Vol-I/22 dated 07/04/2021
5. w/o No:-
6. Date of commencement of work as per agreement: - 03.04.2021
7. Period allowed as per agreement: - 21 months
8. Date of completion as per agreement: - 03.01.2023
9. Period for which extension granted previously: -

Unit No	Supply date	Erection and Commissioning
4	10th June 2022 from our works	15th July 2022
3	15th June 2022 from our works	15th Aug 2022
2	30th June 2022 from our works	30th Oct 2022
1	30th June 2022 from our works	30th Dec 2022

Ap, Ex — 10/

10. Period for which extension applied for: -

Unit No	Supply date	Erection and Commissioning
4	16th June 2023 from our works	19th Aug 2023
3	15th June 2023 from our works	7th Sept 2023

11. Hindrance on account of which extension is applied for with dates on which hindrance occurred and the period for which these are likely to last.

Sl No.	Nature of Hindrance	Date of occurrence	Period for which it is likely to last	Period for which extension is required	Overlapping Period, if any	Net extension applied for	Remarks
1	Force Majeure (Section III General Terms and conditions clause # 15)	3rd April 2021	20th June 2021	3rd April 2021 to 20th June 2021	NA	78 days	(Section III General Terms and conditions clause # 15)
2	Mixing of design inputs and non-identical machines which were found after reverse engineering (Section III General Terms and conditions clause # 10.7 – C) Beyond the control of contractor	July 2021	October 2021	July 2021 to October 2021	NA	120 days	(Section III General Terms and conditions clause # 10.7 – C) Beyond the control of contractor
3	Post covid there is huge shortage and capacity constraints of Electrical grade steel raw material (Section III General Terms and conditions clause # 10.7 – C)	June 2021	August 2021	June 2021 to August 2021	Overlapping with Sr No 2 above	90 days	(Section III General Terms and conditions clause # 10.7 – C) Beyond the control of contractor

Ap. 6 – 11/

	Beyond the control of contractor						

Total period for which extension is now applied for on account of hindrance mentioned above, 35 days for Unit # 4 and 23 days for Unit # 3.

12. Extension required for extra work (in details) – Same as above.

13. Total extension of time required for 10 & 11 - 35 days for Unit # 4 and 23 days for Unit # 3.

- Unit # 4 FAC received on 31st August 2023 and machine handed over for commercial operation.
- Unit # 3 FAC received on 7th September 2023 and machine handed over for commercial operation.

For Andritz Hydro Pvt Ltd.

Project Manager Commercial Manager

Signature of Contractor/ Supplier

Submitted to Asst. Manager

Ap.6 – 12/

The CGM (C)/HOP Kopili
North Eastern Electric Power Corporation Limited,
KOPSY,Kopili Hydro Electric Project
Umrangsu
e-mail: hop_khep@rediffmail.com
Kind Attn. Mr. Dilip Saikia

Imran N Shaikh
ANDRITZ HYDRO

p: +91 7480400474
f: +91 7480400393 / 394
imran.shaikh@andritz.com

AH letter No.: INS-KOPILI - 2022 – 270

Subject/Betreff: KOPILI – Request for Final time extension for Unit # 4 & 3 for Generator and Turbine portion.

Reference:

1. **No. QP/C&P/ F/E/KHEP-E/M Pkg/2093-Vol-I/06 Date: 03.04.2021**
2. **No. QP/C&P//F/E/KHEP-E/M Pkg/2093 - Vol-I/ 22 Dated: 07/04/2021**
3. **No. NEEPCO/KHEPS/c&p/Kopili P.S/W-393/2021-22/4308 dated 6th January 2022**

Dear Sir,

This is with reference to the mentioned subject above, our communications regarding time extension and our subsequent meetings with NEEPCO's team, we would like to draw your kind attention on the issuance of **Final Time Extension for Unit # 4 & 3 of KOPILI project without levied of LD**.

Please note that we have already been awarded with provisional time extension for all units.

Further please note that we have successfully commissioned and handed over 02 units for commercial operation as detailed below.

Unit # 4 – FAC issued, and machine handed over for commercial operation on 19th Aug 2023.

Unit # 3 – FAC issued, and machine handed over for commercial operation on 7th Sep 2023.

In view of the above you are earnestly requested to grant us the final time extension without levy of LD for Unit # 4 & 3 and support us in commissioning remaining units at the earliest.

Also note that final time extension for Unit # 2 & 1 will be applied upon commissioning of individual units.

Thanking you and assuring you of our best attention and services always.

Yours faithfully,

For Andritz Hydro Pvt Ltd.

Imran Shaikh
Project Manager

Sachindan
Commercial Manager

ए. जे. बोरदोलोई / A.J. Bordoloi
महाप्रबंधक(ई/मा) / G.M (EIM)
कोपिली जल प्रकाश / Kopili Power House
नेप, नीपको लि., उमरांगसो (असम)
NEEPCO LTD., Umrangso(Assam)

ANDRITZ

Registered office: ANDRITZ Hydro Pvt Ltd, D-11, MPAKVN Industrial Area, Gird, Rajkot, Dist. Rajkot, Gujarat, 360003, Madhya Pradesh/ India/ p: +91 (780)-400 400/contact-hydro.in@andritz.com/andritz.com/CIN - U04010MP1995PTC011430
ANDRITZ Hydro Pvt Ltd./A-2/15, MCIE, Mathura Road/ 110044 NEW DELHI/ India,/p: +91 (11)-4567 2300/contact-hydro.in@andritz.com/andritz.com
ANDRITZ Hydro Pvt Ltd./48/5, Mathura Road/ 121102 Village PALWAL, Dist. Palwal, Haryana /India/ p: +91 (1275)-282 181/contact-hydro.in@andritz.com/andritz.com

ENGINEERED SUCCESS

Ap.6 – 13/

NEEPCO Schedule No. II Form No. 18

Application for extension of time

Part I

1. Name of contractor: - Andritz Hydro Pvt Ltd.
2. Name of work as given in the agreement: - Detailed order for awarding the contract for "Reverse Engineering, Design and Engineering, Manufacture, Supply, Repair/Refurbishment of Runners at works, trial assembly of guide apparatus at works, supervision of erection works at site, Testing and Commissioning of turbine of Kopili Unit II, III and IV of 4X50MW Kopili Power Station at KHPS, NEEPCO Ltd. Umrangso, Dima Hasao, Assam- 788931
3. Estimated amount put to tender: -
4. Agreement No: - NEEPCO/KHPS/C&P/Kopili P.S./W-393/2021-22/4308 dated 06.01.2022
5. w/o No: -
6. Date of commencement of work as per agreement: - 23.12.2021
7. Period allowed as per agreement: - 12 months
8. Date of completon as per agreement: - 23.12.202
9. Period for which extension granted previously: - Not Applicable

Ap.6— 14/

10. Period for which extension applied for: - 23.12.2022 to 30.05.2023

Unit No	Supply date	Erection and Commissioning
4	15th November 2022 from our works	31st March 2023
3	31st December 2022 from our works	31st March 2023
2	31st January 2023 from our works	30th May 2023
1	Not Applicable	Not Applicable

11. Hindrance on account of which extension is applied for with dates on which hindrance occurred and the period for which these are likely to last.

Sl No.	Nature of Hindrance	Date of occurrence	Period for which it is likely to last	Period for which extension is required	Overlapping Period, if any	Net extension applied for	Remarks
1	Delay in design due to closure in Europe. (Section III General Terms and conditions clause # 10.3 – C) Beyond the control of contractor	23 Dec. 2021	22nd Jan 2022	23rd Dec 2021 to 22nd Jan 2022		30 days	(Section III General Terms and conditions clause # 10.7 – C) Beyond the control of contractor
2	Post covid there was huge shortage and capacity constraints of higher thickness plates which is imported from	1st April 2022	30th May 2022	1st April to 30th May 2022		60 days	(Section III General Terms and conditions

Ap. 6 – 15/

	Europe. Also, there was impact on the transit time of the vessels sailing from Europe to India. (Section III General Terms and conditions clause # 10.7 – C) Beyond the control of contractor						clause # 10.7 – C) Beyond the control of contractor

Total period for which extension is now applied for on account of hindrance mentioned above 5 months 1 weeks 0 days

12. Extension required for extra work (in details) – Same as above

13. Total extension of time required for 10 & 11 - 5 months 1 week

For Adani Hydro Pvt Ltd

Project Manager Commercial Manager

Submitted to Asst. Manager

Signature of Contractor/ Supplier

Ap. 6 – 16/

The CGM (C)/HOP Kopili
North Eastern Electric Power Corporation Limited,
KOPSY,Kopili Hydro Electric Project
Umrangsu
e-mail: hop_khep@rediffmail.com
Kind Attn. Mr. Dilip Saikia

Imran N Shaikh
ANDRITZ HYDRO

p: +91 7480400474
f: +91 7480403393 / 394
imran.shaikh@andritz.com

October 19, 2022

AH letter No.: INS-KOPILI - 2022 - 144

Subject/Betreff: KOPILI – Request for time extension – Turbine Portion

Reference:
1. **No. NEEPCO/KHEPS/c&p/Kopili P.S/W-393/2021-22/4308 dated 6th January 2022**

Dear Sir,

This is with reference to the subject mentioned above, our communications regarding time extension and our subsequent meetings with NEEPCO's higher officials we would like to draw your kind attention on the issuance of **Time Extension for KOPILI project without levied of LD.**

Delay due to late receipt of order in end December 2021. As Europe was closed due to Christmas vacation, this affected the design release by almost one month.

Post covid there was huge shortage and capacity constraints of higher thickness plates which is imported from Europe. Also, there was impact on the transit time of the vessels sailing from Europe to India. The afore mentioned scarcity of material and logistic issue caused an overall delay of 02 months for sourcing the material from Europe.

As controlling this is also beyond our control, we add this period for time extension as per contract provision mentioned in **Section III General Terms and conditions clause # 10.7 - C.**

As mentioned above the delivery of supplies extended due to various reasons beyond the genuine control of Andritz. In view of the above you are requested to consider the supply period extension as agreed in our meeting dated 26th August 2022 (Supplies of Unit # 4 by 15th Nov from our works, Unit # 3 by end December 2022, Unit # 2 by end January 2023 and Unit # 1 by end February 2023) from our works while issuing the Time Extension for overall completion time. The time period for erection and commissioning may kindly be considered from your end as we have only the scope of supervision for erection and commissioning. For any change in E&C timeline later on, Andritz shall be eligible for further time extension.

ANDRITZ

ए.जे. बोरदोलोई / A.J. Bordoloi
मुख्य महा प्रबंधक / C.G.M (EIN)
कोपिली पॉवर हाउस / Kopili Power House
नीपको लि. / NEEPCO Ltd.

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Ap-6 - 17/

With the above submission, we earnestly request you to grant us the time extension without levied of LD and support in this hard time.

Thanking you and assuring you of our best attention and services always.

Yours faithfully,

For Andritz Hydro Pvt Ltd.

Imran Shaikh	Sudhir Jain
Project Manager	Commercial Manager

ए.जे. गोरनोलोई / A.J. Goralol
महाप्रबंधक (ई/दा) / G.M (E/M)
कोपिली पावर हाउस / Kopili Power House
एच.ई.ई.पी.सी. लि., उमरोन्दो (असम)
KHEP, NEEPCO Ltd, Umrongso (Assam)

ENGINEERED SUCCESS

Ap 16 – 18/

NEEPCO Schedule No. II Form No. 18

Application for extension of time

Part 1

1. Name of contractor: - Andritz Hydro Pvt Ltd.
2. Name of work as given in the agreement: -Detailed Design and Engineering, Manufacture, Testing at Works, Despatch, Inland Transportation including Freight and Insurance, Delivery to Project Site, Storage and Preservation of all Equipment at any intermediate locations, Supervision of Complete Assembly, Erection, Testing and Commissioning at site of all Electro-Mechanical Equipment to be installed in the Power House Kopili H.E. Power Plant (4x50MW), Assam, India, including Training of Purchaser's Personnel in Design, Engineering, Operation and Maintenance of Plant."
3. Estimated amount put to tender: -
4. Agreement No: - OP/C&P/F/E/KHEP-E/M Pkg/2093-Vol-I/ 22 dated 07/04/2021
5. w/s No:-
6. Date of commencement of work as per agreement: - 03.04.2021
7. Period allowed as per agreement: - 21 months
8. Date of completion as per agreement: - 03.01.2023
9. Period for which extension granted previously: - Not Applicable

A.L. Borbhi / A.L. Borbhi
Executive Engineer (E/M)
Kopili Power House
Dist. Diphu (N. Anglong) Assam
Executive Engineer (E/M)

NEEPCO
New Delhi
North Eastern Electric Power Corporation

E Pybot

Ap6 – 19/21

10. Period for which extension applied for: - 03.01.2023 to 30.06.2023

Unit No	Supply date	Erection and Commissioning
4	15th November 2022 from our works	31st March 2023
3	31st December 2022 from our works	31st March 2023
2	31st January 2023 from our works	30th May 2023
1	28th February 2023 from our works	30th June 2023

11. Hindrance on account of which extension is applied for with dates on which hindrance occurred and the period for which these are likely to last.

Sl No.	Nature of Hindrance	Date of occurrence	Period for which it is likely to last	Period for which extension is required	Overlapping Period, if any	Net extension applied for	Remarks
1	Force Majeure (Section III General Terms and conditions clause # 15)	3rd April 2021	20th June 2021	3rd April 2021 to 20th June 2021	NA	78 days	(Section III General Terms and conditions clause # 15)
2	Missing of design inputs and non-identical machines which were found after reverse engineering (Section III General Terms and conditions clause # 10.7 – C) Beyond the control of contractor	July 2021	October 2021	July 2021 to October 2021	NA	120 days	(Section III General Terms and conditions clause # 10.7 – C) Beyond the control of contractor

Ap 6 – 20/21

3	Post covid there is huge shortage and capacity constraints of Electrical grade steel raw material (Section III General Terms and conditions clause # 10.7 – C) Beyond the control of contractor	June 2021	August 2021	June 2021 to August 2021	Overlapping with Sr No 2 above	90 days	(Section III General Terms and conditions clause # 10.7 – C) Beyond the control of contractor

Total period for which extension is now applied for on account of hindrance mentioned above 05 months 02 weeks 06 days

12. Extension required for extra work (in details) – Same as above

13. Total extension of time required for 10 & 11 - 05 months 03 weeks 06 days

For Andhra Hydro Pvt Ltd

Project Manager Commercial Manager

Signature of Contractor/ Supplier

Submitted to Asst. Manager

AP 6-21/21

BFV

BHEL document

NEEPCO Schedule No. 8 Form No. 19

Application for extension of time
Part-I

1. Name of Contractor: - M/s Bharat Heavy Electricals Ltd, EDRC, Haridwar – 249403
2. Name of Work as given in the Agreement: - SUPPLY OF 2 NOS. BUTTERFLY VALVE FOR KOPILI H.E. POWER PLANT (4X50MW), ASSAM
3. Estimated Contract put to tender :- Rs 13,51,30,283/- (Inclusive GST)
4. Agreement No :- PO/NO : GPIC/PTV/E/BUTTERFLY VALVE-KHEP208/PO/L-IV/3269 Dt: 22.12.2020
5. Date of Communication of work as per Agreement: - 22.12.2020
6. Period allowed as per Agreement: - 12 Months from LOI date-14.12.2020
7. Date of Completion as per Agreement: - 13.12.2021
8. Period for which extension granted previously: -322 days (14.12.2021 to 30.09.2022) & (01.10.2022 to 30.11.2022&01.12.2022 to 28.02.2023)
9. Period for which extension applied for :- 624 Days (01.03.2023 to 30.08.2023)
10. Hindrance on account of which extension is applied for with dates on which hindrance occurred and period for which there are likely to last

SL NO.	Nature of Hindrance	Date of occurrence	Period for which it is likely to last	Period for which extension is required	Over lapping period, if any	Net extension applied for	Remarks
1	Items got delayed due COVID-19 second and third wave country wide which affected manufacturing and procurement of raw materials from our vendors also, which are beyond control of BHEL. Casting blanks of BFV later delayed at our vendor / supplier in Russia Ukraine war (due to shortage of Chromium which is key ingredient of S.G. Casting)	14.12.2021	30.08.2023	624 days		624 days	

Total period for which extension is now applied for on account of Hindrance mentioned above —Month &/or Days.

11. Extension applied for zero work (in details)
12. Total extension of time applied for 10 & 11

Signature of Contractor/ Supplier

Submitted to Asstt. Manager (C) Office .....

A.J. Bordoloi / A.J. Bordoloi
Chief Engineer / C.E. (EM)
Kopili Power House

NEEPCO New Delhi New Delhi Electric Power Corporation

E. Pybot

Appendix-7 Ap 7 - 1/1

E-26

4367 26/3/21 to HOP

Election Urgent

GOVERNMENT OF ASSAM
OFFICE OF THE DISTRICT ELECTION OFFICER::::DIMA HASAO
(ELECTION PERSONNEL CELL)

No.NCH/EL/PERSONNEL/APPTT.11/2021/1075 Date:19/03/2021

To,
CGM
KHEP, NEEPCO,Umrangso

Sub:- Forwarding of Final Appointment Letter in connection with Assembly Election-2021

Sir,

With reference to the above, I am sending herewith 10 nos of **Final Appointment Letter** in connection with **Assembly Election-2021**. You are requested to distribute the same to the respective Officer/Staff under your control and acknowledge the receipt. Details are as follows.

Presiding Officer	9
First Polling Officer	1
Total	10

District Election Officer
Dima Hasao

Ap 7-24

Assembly Election-2021
Signing Sheet for Final Appointment Letter
Name of Establishment: KHEP, NEEPCO, Umrangso

SINo	Polling ID	Name & Designation	Duty Assigned	Signature
1	376	ABDUL NOOR CHOUDHURY A.E	Presiding Officer	20/3/21.
2	366	ANUPAM SAIKIA Dy. Mgr.	Presiding Officer	
3	363	BISHAN THAPA Dy. Mgr.	Presiding Officer	
4	374	DEVID LANGTHASA J.E.	Presiding Officer	
5	365	GOBINDRO SARKAR Dy. Mgr.	Presiding Officer	
6	372	LALRINKIMA A.E	Presiding Officer	20/3/21
7	370	NICKSON TERON Asstt. Manager	Presiding Officer	20/3/21
8	368	RAJU NAIDING JTO	Presiding Officer	20/3/21
9	364	TARUN KR SHAKYA Dy. Manager (M)	Presiding Officer	20/3/21
10	439	SARBANANDA KALITA Supervisor	First Polling Officer	20/3/2021

App-3/4

Diary No./Receipt No. 4244
Dated 15/03/2021
To the HOP
HOP, KLHEP, NEEPCO, Umrangso (Assam)

GOVT.OF ASSAM

OFFICE OF THE DEPUTY COMMISSIONER::::DIMA HASAO :::HAFLONG:::::

(MICRO OBSERVER CELL)

NO.NCH/EL/MICRO OBSRERVER CELL/2021/14. Dated Haflong,the 15th /March,2021.

To:

All Micro Observer,
16-Haflong (ST) L.A. Constituency.

Sub: Meeting.

It is to inform you that a meeting with General Election Observer will be held on 16.3.2021 at 12.00 Noon in the Conference Hall of Deputy Commissioner, Dima Hasao, Haflong in connection with ensuing Assembly Election 2021.

Therefore you are requested to attend the said meeting on the above mentioned date, venue & time positively without fail.

Deputy Commissioner
&
District Election Officer,
Dima Hasao, Haflong

Memo No.NCH/EL/MICRO OBSRERVER CELL/2021/14 Dated Haflong,the 15th /March,2021.

Copy to:

1) The Protocol Officer to General Election Observer for appraisal to the Hon'ble Observer.
2) All AROs 16-Haflong (ST) LAC for information & necessary action.
3) The In-charge, Election Food & Refreshment cell for providing of necessary refreshment.
4) All Micro Observers for information & compliance.
5) Naib. DC's office, Haflong for information & necessary action.

Deputy Commissioner
&
District Election Officer,
Dima Hasao, Haflong

NEEPCO

AP7-4/4

E-26

ELECTION URGENT

GOVT OF ASSAM
OFFICE OF THE DEPUTY COMMISSIONER : DIMA HASAO, HAFLONG
PERSONNEL CELL, ASSAM LEGISLATIVE ASSEMBLY ELECTION, 2021

No. NCH/EL/TRG-ALA /2020-21/468 Dated Haflong the 1st March 2021

To
The G. M.
NEEPCO, Umrangso

Sub :- Distribution of Letters of Presiding / Polling Officers

Sir/Madam,

With reference to the above and in enclosing herewith 12 (Twelve) Nos. of letters of training of the Presiding/Polling Officers in connection with General Election to the Assam Legislative Assembly, 2021, I am to request you to distribute the letters to the officials / staff of your respective department immediately.

Please ensure that the said letters are received by the concerned staff of your department. Non-receipt of the letters by the officials / staff shall be seriously viewed.

Kindly acknowledge receipt of the same

Yours faithfully

Deputy Commissioner
&
District Election Officer
Dima Hasao, Haflong

Enclo :- As stated above

Receipt No. 4104 Dtd 5/3/21
HOP/KHEP/NEEPCO,Umrangso (Assam)

आ.भा.स. / U.O. No. 2893 दिनांक / Dtd 5/3/21
कृपया प्रमुखता सहायिका, जेम, नीपको लि., उमरोंसो
GVD,General Manager/HOP, KHEP, NEEPCO,Umrangso

DGM (HR)

03.03.21

~ 435 ~
121

Apperdix-8 Ap. 8-1/2

AHPL

APS Hydro Pvt. Ltd.

CIN NO. U45203DL2003PTC119375

Ref: APS/NEEPCO/KOPILI/372/2021-140

Dated: 14-09-2021

To,
The.Dy.General Manager (C),HSM-II
Kopili Hydro Electric Plant,
North Eastern Electric Power Corporation Ltd.,
Umrongso, Assam

Sub: Work for "Civil Works pertaining to Restoration of Kopili Hydro Electric Plant Umrongso Assam". Reg: Unplugging of Adit-2 opening.

Dear Sir,

It is to bring to your kind notice that we had taken up the work of unplugging the Adit-2 opening where the opening was plugged with concrete & a large boulder was formed placed at the plug point necessitating its dismantling & removal.

We have now dismantled & removed the boulder but it is noticed that a continuous slip has started occurring at the plug point causing us to stop the work since last four days. The continuous slip & collapse from top of tunnel is posing a danger to the safety of our manpower engaged for the purpose. The works to be taken up in the tunnel are also being delayed as entry into the tunnel has been rendered dangerous on account of the above stated reason.

It is still occurring from time to time & therefore it is necessary to take some safety & preventive measures by the NEEPCO Ltd. It may be required to provide steel supports etc. as deemed fit.

An officer of the NEEPCO Ltd. has inspected the site of collapse & has assured that necessary steps to safeguard to prevent the slide will be decided & taken.

You are requested to expedite the matter to enable us to proceed with the work.

Thanking you

Yours Faithfully

For APS HYDRO PVT. LTD.

Authorised Signatory

Authorised Signatory

App.8-2/2 Appendix-8.

NORTH EASTERN ELECTRIC POWER CORPORATION LTD.

(A Govt. of India Undertaking)

KOPILI HYDRO ELECTRIC PLANT

Umrongso, Dist.: DIMA HASAO, ASSAM

PIN: 788931, Fax NO: 03670288226/240

No: NEEPCO/KHEP/DGM(C)/HSM-II/T-89/2021-22/ 1273 , Dated: 29/09/2021

To

M/s APS HYDRO PVT. LTD
Plot No. 10/58, First Floor, Industrial Area,
Kirti Nagar, New Delhi – 110 015
Mobile No: 9811282589, Tel: 011-47001921
Email: apshydro@gmail.com, info@apshydro.com

Kind Attn: Shri Arun Kumar Soam, Project Manager

Sub: Civil Works pertaining to Restoration of Kopili Hydro Electric Plant, Umrangso, Assam – Fabrication and erection of ribs support system at Adit-II reg.

Ref.: Agreement No: NEEPCO/QP/ED(C&P)/R/C/KHEP/(Civil Restn)/667/2020-21 dtd. 05/02/2021.

Dear Sir,

With reference to the subject mentioned above, please find enclosed fabrication drawing pertaining to Adit-2 support system - Umrong WCS.

You are requested to collect the steel ribs / plate materials immediately and start fabricating the steel rib supports. The work shall be taken up on priority, so that breaking of Adit-II may resume at the earliest possible. The work shall be treated as extra work.

This is for your kind information and needful please.

Thanking you

Yours faithfully

29/9/21

General Manager (C),
HSM, KHEP
NEEPCO Ltd, Umrongso

Memo No: NEEPCO/KHEP/DGM(C)/HSM-II/T-89/2021-22/ 1274-75 Dated 29-Sep-21

Copy to:

1. CGM (C) & HoP, KHEP, Umrongso, for kind information please.
2. GM (C), KHEP, Umrongso, for information please.

29/9/21

General Manager (C),
HSM-II, KHEP
NEEPCO Ltd, Umrongso

D/C

Appendix_ 9

Ap. 9 — 1/3

नॉर्थ ईस्टर्न इलैक्ट्रिक पावर कॉरपोरेशन लि.
(भारत सरकार का उद्यम)
NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED
(A Government of India Enterprise)
कोपिली जल-विद्युत संयंत्र / KOPILI HYDRO ELECTRIC PLANT
संयंत्र प्रमुख के कार्यालय / O/o THE HEAD OF P PLANT

No. NEEPCO/KHPS/HOP/ W-3/2021-22/ Date: 30/03/2022

To
The AGM
APDCL- Haflong
Dima Hasao, Assam

Sub:- Application for emergency restoration and re-construction power to Kopili, Khandong and Khandong Stage-II at 33 KV level at Umrongso.

Sir,

As you are aware of the fact that, Khandong and Khandong Stage-II Power Stations were inundated on 26/03/22 caused by a flash flood, disrupting power supply of NEEPCO in totality.

At this time, reconstruction works of 4X50 MW Kopili Power House is going on, which require a large amount of construction power. Further, we need substantial power for restoration and re-construction of Khandong and Khandong Stage-II power stations .

Therefore, we would like to request you to allow us to draw around 2 MW of Construction power for all the Power Stations mentioned above, through the existing scheme indicated in the enclosed Sketch. As per our preliminary assessment, the existing system can be technically utilized for taking power at 33 KV level with some modification keeping the supply presently made in 11 kV level undisturbed.

Your cooperation and help in this regard is highly solicited.

With Regards

Chinmoy Deka
HOP/ CGM (C)
KHPS, NEEPCO, Umrongso.

Letter ovo. 385 dt-30/3/22

Copy To:

1) The ED (O&M) for Kind information please. This has a reference to the meeting held on 29.03.2022, at KHPS.
2) SDE, APDCL, Umrongso, Dima Hasao, for kind information please.
3) File No. W-18,

29/3/22

Ap.9 – 3/3

10 AM Gmail - Fwd: Electricity connection for Khandong for restoration works of Khandong & Khandong Stage-II Power Station

Gmail [illegible] Director Technical <dte[illegible]

Fwd: Electricity connection for Khandong for restoration works of Khandong & Khandong Stage-II Power Station

Baidyanath Maharana <bmaharana@neepco.co.in> Sat, Apr 2, 2022 at 9:41 AM
To: dtofficeneepco@gmail.com

Dear Diganata,
Agreed as proposed and vetted by the CGMF

Regards,

B MAHARANA
DIRECTOR (FINANCE)
NEEPCO LTD.
BROOKLAND COMPOUND
LOWER NEW COLONY
SHILLONG-793003
9435563039,8860813116
ALT EMAIL: BMAHARANA@YAHOO.COM

Approved.
2/4/2022

From: dtofficeneepco@gmail.com
To: "Baidyanath Maharana" <bmaharana@neepco.co.in>
Cc: "Director Finance NEEPCO" <director.finance@neepco.co.in>
Sent: Friday, April 1, 2022 4:12:49 PM
Subject: Fwd: Electricity connection for Khandong for restoration works of Khandong & Khandong Stage-II Power Station

Sir,
The trailing mail and the endorsement of the Director (Tech) in the Note attached for finance concurrence are forwarded for your kind perusal and needful please.

With Regards:

D. Goswami
General Manager (E/M)

---------- Forwarded message ---------
From: neepco. edonm <neepco.edonm@gmail.com>
Date: Fri, Apr 1, 2022 at 3:06 PM
Subject: Fwd: Electricity connection for Khandong for restoration works of Khandong & Khandong Stage-II Power Station
To: dtofficeneepco <dtofficeneepco@gmail.com>, D(T)OFFICE <dtoffice@neepco.co.in>

We refer to the trailing mail.

Subsequent to inundation of Khandong & Khandong Stage – II Power Stations on 26/03/2022, Khandong Switchyard became inoperative and 33 kV supply system from Khandong was disrupted resulting in complete black out of the entire NEEPCO Colony area.

As restoration of the power system shall take considerable time, an electricity connection of 700 kW through 11 kV line has been restored on 30/03/2022 from M/s APDCL for NEEPCO Colony, Umrongso, against payment of load security deposit (refundable) of Rs. 21,12,352.00 with approval of the competent authority.

It has been proposed to make an arrangement for additional power connection on emergency from M/s APDCL for restoration works of Khandong & Khandong Stage-II Power Station, as decided in the meeting with the site officials on 30/03/2022. This service shall be discontinued with the earliest restoration of our system.

1/7

https://mail.google.com/mail/u/0/?ik=[illegible]

NEEPCO New Delhi North Eastern Electric Power Corporation

E Gyabet

Ap. 9 – 3/2

Gmail

Director Technical <dtofficeneepco@gmail.com>

Fwd: Electricity connection for Khandong for restoration works of Khandong & Khandong Stage-II Power Station

1 message

neepco. edonm <neepco.edonm@gmail.com> Fri, Apr 1, 2022 at 3:06 PM
To: dtofficeneepco <dtofficeneepco@gmail.com>, "D(T)OFFICE" <dtoffice@neepco.co.in>

We refer to the trailing mail.

Subsequent to inundation of Khandong & Khandong Stage – II Power Stations on 26/03/2022, Khandong Switchyard became inoperative and 33 kV supply system from Khandong was disrupted resulting in complete black out of the entire NEEPCO Colony area.

As restoration of the power system shall take considerable time, an electricity connection of 700 kW through 11 kV line has been restored on 30/03/2022 from M/s APDCL for NEEPCO Colony, Umrongso, against payment of load security deposit (refundable) of Rs. 21,12,352.00 with approval of the competent authority.

It has been proposed to make an arrangement for additional power connection on emergency from M/s APDCL for restoration works of Khandong & Khandong Stage-II Power Station, as decided in the meeting with the site officials on 30/03/2022. This service shall be discontinued with the earliest restoration of our system.

Sub Divisional Engineer, APDCL, after a joint site visit with NEEPCO officials has confirmed that supply of 700 kW of power through the 11 kV line can be extended.

HoP, KHPS has submitted the proposal for payment of Rs. 21,12,353.00 (refundable) as security deposit for an additional connection of 700 kW from M/s APDCL for restoration works of Khandong & Khandong Stage-II Power Station in line with the recent invoices raised by M/s APDCL for providing connection to NEEPCO Colony, Umrongso. Same has been confirmed by the SDE, M/s APDCL verbally and the invoices are expected to be raised by today.

Payment for an amount of Rs. 70,501.00 (Rupees Seventy Thousand Five Hundred One) has already been processed at site with the approval of HoP, KHPS against requirement of materials for providing the HT Bulk connection against 700 kW connecting load.

In view of the urgent requirement, the proposal has been processed in anticipation of invoices raised by M/s APDCL.

Approval of the CMD is required for payment of Rs. 21,12,353.00 (Rupees Twenty One Lakh Twelve Thousand Three Hundred Fifty Three) only to M/s APDCL as security deposit for getting connection from M/s APDCL.

The proposal has been concurred by CGM, Finance)

The instant proposal requires approval of the CMD with recommendation of Director (Tech) and concurrence of Director (Fin).

Recommended for approval of competent authority please.

D(F) Fix A.C → 01/04/2022

Director (Technical) Saamarjit Chakravarty, ED-O&M

---------- Forwarded message ----------
From: Dwijen Kumar <dwijenkumar@neepco.co.in>
Date: Fri, 1 Apr 2022 at 14:49
Subject: Fwd: Electricity connection for Khandong for restoration works of Khandong & Khandong Stage-II Power Station
To: neepco edonm <neepco.edonm@gmail.com>

E Rybot

Appendix – 10 Ap. 10 — 1/5

T-26

नॉर्थ ईस्टर्न इलैक्ट्रिक पावर कॉरपोरेशन लिमिटेड
भारत सरकार का उपक्रम

NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED.
(A GOVT. OF INDIA ENTERPRISE)
OFFICE OF THE EXECUTIVE DIRECTOR(C), SURVEY & INVESTIGATION
NEEPCO BHAWAN, R.G. BARUAH ROAD, SUNDARPUR, GUWAHATI-781005, ASSAM
Email id: neepco.sni.ghy@gmail.com

No. NEEPCO/ED/S&I/GHY/2022-23/T- 26/ 124 Dated: 11/08/2022

To,

The Chief Engineer., PWD,
Border Roads & NEC Works,
Chandmari, Guwahati, Assam

Sub: **Improvement of road for transportation of Power House equipment and materials for reconstruction of . Kopili Hydro Power Station (275 MW) via Lanka-Umrongso Road – Reg.**

Sir,

You may be aware that the 275 MW Kopili Hydro Power Station (KHPS) under North Eastern Electric Power Corporation (NEEPCO) located at Umrongso, under Dima Hasao District of Assam is contributing to the infrastructure of this region, which is presently under shut down. Activities of the restoration, renovation & modernization works of the project are going on in full swing to bring back the project into operation within the current financial year. Road communication via Lanka to Umrongso is being used for transportation of heavy machineries and materials for this restoration and recommissioning activities.

The reconstruction/improvement of the above stretch of road including bridges has been taken up by PWD, Assam and under various stages of completion. On this road, approaches to Lengri bridge (29 Km from Lanka) and Kala Nallah bridge (40 Km from Lanka), in and around Panimur are not yet completed. It is anticipated that transportation of heavy power house equipments scheduled to be started from Sept 2022 shall be highly affected, which will have adverse effect on timely commissioning of the project.

Moreover, the stretch from 12 Km to 8 Km point of Umrongso-Garampani road is used for transportation of heavy Hydro Mechanical components from fabrication yard to Penstock/Power House erection sites. This existing road stretch is damaged to great extent, for which transportation is becoming near impossible.

The above matter has already been taken up by our Head of Plant, KHPS with the S.E. & EE PWD Roads, Haflong NEC (Copy of the letters is enclosed).

In view of the above, your kind intervention for expediting the improvement/reconstruction of the road along with the approaches to the bridges mentioned above and at least temporary repair of the stretch from 12 Km to 8 Km on urgent basis is requested. This will help in timely re-commissioning of the project. It will be appreciated that early re-commissioning of the plant will greatly benefit all the beneficiary's states under NE Region including Assam.

With Regards.

Yours faithfully,

Enclo: as above.

(Ashok Negi)
Executive Director(S&I)
NEEPCO, Guwahati

NEEPCO/ED/S&I/GHY/2022-23/T-26/ 125 - 26 Dated: 11/8/2022

Copy to:

1. The Director (Tech), NEEPCO, Shillong for kind information.
2. The HOP, KHPS, NEEPCO, Umrongso, Assam for information & necessary action.

Executive Director(S&I)
NEEPCO, Guwahati

Ap.10 -2/5

ISO 9001: 2015
ISO 14001: 2015
OHSAS 45001: 2018

नॉर्थ ईस्टर्न इलेक्ट्रिक पावर कॉरपोरेशन लि.
(भारत सरकार का उद्यम)
NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED
(A Government of India Enterprise)
कोपिली जल-विद्युत संयंत्र / KOPILI HYDRO ELECTRIC PLANT
संयंत्र प्रमुख का कार्यालय/ O/o THE HEAD OF PLANT

No: NEEPCO/HOP/KHEP/T-17/2022-23/ Dated: 11/07/2022

To
The Suprintendant Engineer
PWD Roads, Haflong NEC Circle
Dist:- Dima Hasao

SUB: Road communication to Kopili Hydro Electric Plant for heavy consignments via Lanka- Umrongso Road

Sir,

The Kopili Hydro Power Station (275MW) of North Eastern Electric Power Corporation Ltd. (*A Govt. of India CPSU*) is located at Umrongso, Dima Hasao, Assam. Presently, various construction activities for restoration of the project are in progress and the project uses the Lanka-Umrongso Road for all purposes.

We are aware that the Lanka- Umrongso Road is being reconstructed and presently, the road is at various stages of improvements at different stretches.

In the interest of timely re-commissioning of Kopili Hydro Power Station (275MW), it is requested for expediting the road work along with bridges for early completion so that the restoration work of the power station can be completed as per schedule..

Thanking You

Yours faithfully

Head of Plant
Kopili H.P.Station, NEEPCO Ltd.
Umrangso

Ap.10 – 3/5

ISO 9001:2015
ISO 14001:2015
ISO 45001:2018

नॉर्थ ईस्टर्न इलेक्ट्रिक पावर कॉरपोरेशन लि.
(भारत सरकार का उद्यम)
NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED
(A Government of India Enterprise)
कोपिली जल-विद्युत संयंत्र / KOPILI HYDRO POWER STATION
संयंत्र प्रमुख का कार्यालय/ O/o THE HEAD OF PLANT

No.NEEPCO/KHPS/HOP/T-17/2022-23/ Date: 06.08.2022

To

The Executive Engineer, PWD (Roads)
Umrangso NEC Division
Dima Hasao, Assam

Sub: **Repair of the stretch of road from12 KM, Umrangso to 8 KM Point.**

Sir,

It is to intimate that, the reconstruction work of water conductor system of Kopili 200MW P.S. is going on. The penstock ferrules and fabricated steel in-liners are to be shifted from the fabrication shop at Umrangso 12 KM to the erection site. The transportation of Penstock ferrules and fabricated steel in-liners is badly affected because of bad condition of the stretch of road from 12KM to 8 KM point.

You are requested to arrange for the minimum repairing work required for the above stretch of road so as not to affect the erection work in the water conductor system. It may please be noted that, unless the repair work is done urgently, the erection work in water conductor system may come to halt.

Anticipating your co-operation,

Thanking you,

Yours faithfully,

D.K Saikia
Head of Plant
Kopili Hydro Power Station
NEEPCO, Umrangso.
Date: 06.08.2022

No.NEEPCO/KHPS/HOP/T-17/2022-23/ 173-75

Copy to:

1) The Superintending Engineer, PWD (Roads), Haflong NEC Circle, Haflong, Dima Hasao, Assam, for favour of kind information please.
2) The ED (S&I) for favour of kind information please.
3) The GM (C), KHPS, for information and necessary action please.

06/8/22

Head of Plant
KHPS, NEEPCO.

Apl0- 4/5

ISO 9001: 2015
ISO 14001: 2015
ISO 45001: 2018

नॉर्थ ईस्टर्न इलेक्ट्रिक पावर कॉरपोरेशन लि.
(भारत सरकार का उद्यम)
NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED
(A Government of India Enterprise)
कोपिली जल-विद्युत संयंत्र / KOPILI HYDRO POWER STATION
संयंत्र प्रमुख का कार्यालय/ O/o THE HEAD OF PLANT

No: NEEPCO/KHPS/ HOP/ T-17 /2022-23/ Date: 13/07/2022

To
The Executive Engineer
NEC , Umrangso
Dist:- Dima Hasao, Assam

SUB: Road communication to Kopili Hydro Power Station for heavy consignments via Lanka- Umrongso Road

Sir,

The Kopili Hydro Power Station (275MW) of North Eastern Electric Power Corporation Ltd. (*A Govt. of India CPSU*) is located at Umrongso, Dima Hasao, Assam. Presently, various construction activities for restoration of the project are in progress and the project uses the Lanka- Umrongso Road for all purposes.

We are aware that the Lanka- Umrongso Road is being reconstructed and presently, the road is at various stages of improvements at different stretches.

In the interest of timely re-commissioning of Kopili Hydro Power Station (275MW), it is requested for expediting the road work along with bridges for early completion so that the restoration work of the power station can be completed as per schedule.

Thanking You

Yours faithfully

Head of Plant
Kopili H.P.Station, NEEPCO Ltd.
Umrangso

Memo No: NEEPCO/HOP/KHEP/T-17/2022-23/ 122-123 Dated 13/07/2022

Copy to:

1. The executive Director (S&I), NEEPCO Ltd. Guwahati, Assam for favour of kind information please.
2. The GM(C), KHPS, NEEPCO Ltd., Umrongso, Assam for information and needful please.

13/7/22

Head of Plant
Kopili H.P.Station, NEEPCO Ltd.
Umrangso

AP. 10 – 5/5

NEEPCO
New Delhi

Appendix - 11

Ap II - 1/10

NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED NOTE

(Mini Ratna, Category-I, Government of India Enterprise)

File Number: Note Sheet/CW/HSM - I/T-129/8/KHEP/18/01/2024

Basic Details

FileType: Note Sheet	
Subject: Refurbishment of 3 (Three) nos of Bifurcation, one at upstream of Valve house an	
Created On : 18/01/2024 Time :18:26:36	Status: In Process
Created By: Anand Prakash	Last Changed By: Utpal Borah

File Workflow

Creator : Anand Prakash (18/01/2024 18:35:24)

Processor - 1: Utpal Borah (27/01/2024 16:49:03)
Processor - 2: Dilip Kumar Saikia (28/01/2024 12:23:39)
Processor - 3: Chandra Prasad Saikia (29/01/2024 19:40:33)
Processor - 4: Biswajit Sinha (30/01/2024 17:08:08)
Processor - 5: Chandra Prasad Saikia (30/01/2024 21:40:51)
Processor - 6: Utpal Borah (31/01/2024 09:38:58)
Processor - 7: Anand Prakash (01/02/2024 17:20:59)
Processor - 8: Utpal Borah (01/02/2024 17:35:50)
Processor - 9: Chandra Prasad Saikia (01/02/2024 20:09:24)
Processor -10: Biswajit Sinha (02/02/2024 11:26:22)
Processor -11: Chandra Prasad Saikia (02/02/2024 12:19:06)
Processor -12: Biswajit Sinha (02/02/2024 17:38:40)
Processor -13: Chandra Prasad Saikia (02/02/2024 21:23:52)
Processor -14: Ajay Kr Shaw (22/02/2024 10:50:40)
Processor -15: Chandra Prasad Saikia (24/02/2024 20:02:22)
Processor -16: Dilip Kumar Saikia (25/02/2024 21:53:48)
Processor -17: Parag Saikia (29/02/2024 11:54:27)
Processor -18: Utpal Borah (29/02/2024 12:11:14)
Processor -19: Dilip Kumar Saikia (29/02/2024 13:15:46)
Processor -20: Utpal Borah (01/03/2024 21:15:55)
Processor -21: Shashank Singh (02/03/2024 12:59:15)
Processor -22: Utpal Borah (02/03/2024 21:27:28)
Processor -23: Susanta Deka (05/03/2024 10:41:30)
Processor -24: Bijit Kr. Goswami (09/03/2024 19:41:10)
Processor -25: Siddhartha Sankar Adhikari (10/03/2024 10:29:38)
Processor -26: Silangshu Dhar (12/03/2024 20:57:07)
Processor -27: Sujeet Kumar Jha (05/04/2024 11:37:16)
Processor -28: Silangshu Dhar (08/04/2024 17:17:25)
Processor -29: Siddhartha Sankar Adhikari (09/04/2024 10:57:42)
Processor -30: Bijit Kr. Goswami (09/04/2024 13:12:09)

1/29

Processor -31: Dwijen Kumar (09/04/2024 16:00:46)
Processor -32: Cathleen Rupa Ranee (17/04/2024 17:09:38)
Processor -33: Bijit Kr. Goswami (17/04/2024 17:48:16)
Processor -34: Susanta Deka (18/04/2024 09:45:29)
Processor -35: Chandra Prasad Saikia (18/04/2024 10:48:24)
Processor -36: Utpal Borah (18/04/2024 11:31:40)
Processor -37: Shashank Singh (18/04/2024 16:15:48)
Processor -38: Utpal Borah (18/04/2024 22:31:40)
Processor -39: Chandra Prasad Saikia (19/04/2024 20:38:54)
Processor -40: Susanta Deka (20/04/2024 09:49:40)
Processor -41: Chandra Prasad Saikia (24/04/2024 21:04:47)
Processor -42: Biswajit Sinha (25/04/2024 11:08:11)
Processor -43: Chandra Prasad Saikia (03/05/2024 18:45:16)
Processor -44: Utpal Borah (03/05/2024 19:09:44)
Processor -45: Shashank Singh (00/00/0000 00:00:00)

File Description

- Regarding claim of for Refurbishment of 3 (Three) nos of Bifurcation, one at upstream of Valve house and Two Nos on Upstream of MIV under R & M work of KHPS- Regarding claim of for Refurbishment of 3 (Three) nos of Bifurcation, one at upstream of Valve house and Two Nos on Upstream of MIV under R & M work of KHPS

Created By : Anand Prakash
Created On :18/01/2024 18:35:14
Forwarded To: Utpal Borah

File Attachments

Attachments :

AnnexureY; **Created By** :Shashank Singh; **Uploaded on** :02/03/2024 12:05:15
AnnexureX; **Created By** :Shashank Singh; **Uploaded on** :02/03/2024 12:04:53
AnnexureJ; **Created By** :Shashank Singh; **Uploaded on** :02/03/2024 12:04:11
AnnexureI; **Created By** :Shashank Singh; **Uploaded on** :02/03/2024 12:03:51
AnnexureH; **Created By** :Shashank Singh; **Uploaded on** :02/03/2024 12:03:17
AnnexureG; **Created By** :Shashank Singh; **Uploaded on** :02/03/2024 12:02:34
AnnexureF; **Created By** :Shashank Singh; **Uploaded on** :02/03/2024 12:00:30
AnnexureE; **Created By** :Shashank Singh; **Uploaded on** :02/03/2024 12:00:10
AnnexureD; **Created By** :Shashank Singh; **Uploaded on** :02/03/2024 11:59:54
AnnexureC; **Created By** :Shashank Singh; **Uploaded on** :02/03/2024 11:59:37
AnnexureB; **Created By** :Shashank Singh; **Uploaded on** :02/03/2024 11:59:10
AnnexureA; **Created By** :Shashank Singh; **Uploaded on** :02/03/2024 11:58:37
statementnew; **Created By** :Anand Prakash; **Uploaded on** :01/02/2024 17:19:24
statement; **Created By** :Anand Prakash; **Uploaded on** :01/02/2024 17:15:26
notesheet; **Created By** :Anand Prakash; **Uploaded on** :18/01/2024 18:33:44
notesheet; **Created By** :Anand Prakash; **Uploaded on** :18/01/2024 18:29:44

File Notings

NOTESHEET

Sub: - Regarding claim of for Refurbishment of 3 (Three) nos of Bifurcation, one at upstream of Valve house and Two Nos on Upstream of MIV under R & M work of KHPS

Ref: - 1) Agreement no. NEEPCO/QP/ED (C&P)/R/C/KHEP (Restn)-666/2020-21 dated 28-01-2021.

2020

2) Work order no. NEEPCO/ED/C&P/F/C/KHEP (Restn)-546/Vol-1/2020-21/1878 dated 13-11-2020

3) Record notes of Discussion held on 18th Feb 2023 regarding repair methodology for Bifurcations of Kopili Power

4) M/S PES letter no. PESEPL/KHEP/PS/2023/155 dated 28.09.2023

M/S PES was awarded a work of **"DESIGN, FABRICATION, SUPPLY, ERECTION, TESTING & COMMISSIONING OF PENSTOCK AND STEEL IN -LINERS IN UMRONG SYSTEM OF KOPILI HYDRO ELECTRIC PROJECT (275 MW), ASSAM** vide agreement & work order no. under ref. (1) & (2) above. During the execution of the works it was noticed that Bifurcation area of penstock i.e. at the upstream of valve House & Upstream of MIV of Penstock-1 & 2 were highly corroded or damaged. And methodology of refurbishment for such areas was not mentioned in the scope of the work. The concern was intimated to the NEEPCO, D&E, Guwahati and subsequently a meeting was held on the 18th Feb 2023 in the office chamber of GM(C), HSM-1 to decide the methodology for repairing of the bifurcation of Kopili HPS. The engineers from the Project, D&E and the Expert Consultant Mr. Ashok sharma participated in the meeting.

After various deliberation on the methodology of repair/refurbishment of the bifurcation areas prior to cladding following were decided as per the record notes under ref. (3) above:

1) A thorough visual inspection of the area to be carried out and the pitted area be identified.

2) Suitable NDT to be done to ascertain extent of damage.

3) After identification of the damage, the repair of the same shall be done by filling up the groove with the welding.

4) The filling shall commence after removing of the corroded metal and making grooves on the plate and subsequently filling up of the same with electrode confirming to E-9018

5) The WPS qualified earlier for the penstock works shall be adopted for weld layup.

During the discussion, M/S PES raised the concern of payment because above procedure was neither covered in the scope of the works of R&M of penstock nor in the work of SS cladding of Bifurcation. After detailed deliberation, it was mutually agreed by NEEPCO & M/S PES, that refurbishment work would be compensated on the basis of actual expenditure including contractor profit and overhead profit as admissible. All the refurbishment has been completed successfully on 11th November 2023 with the commissioning of Unit-2.

M/S PES vide their letter no. under ref (4) above have submitted details of their financial involvement for the refurbishment works of 3 (Three) Nos of Bifurcation along with the supporting documents. The total financial involvement as claimed by M/S PES including a) cost of manpower 2) cost of materials, tools & tackle 3) other applicable charges is **₹30485565.89 (Three Crore Four Lakhs Eighty-Five Thousand Five Hundred Sixty-Six Only)** without GST. The claim has been scrutinised as per the available joint record of manpower, consumable material and ivoices, pertaining to 3 nos of Bifurcation under Umrong water conductor system. The details of the same is as tabulated below:

Sl. No.	Description	Amount (Excl. GST)	Remarks
1	Financial involvement pertaining to Manpower.	23717930.63	**ANNEXURE: - "X "**
2	Financial involvement pertaining to Consumable Materials Expenditure	5237635.27	**ANNEXURE: - "Y "**

3	Financial Involvement for NDT Test	1530000.00	**ANNEXURE: - "E "**
	Total Financial Involvement =	**30485565.89 Say 30485566.00**	**(Without GST)**
Say (Rupees Three Crore Four Lakhs Eighty-Five Thousand Five Hundred and Sixty-Six Only)			

Total no. of Welding Rod consumed for 3 no. refurbishment work at VH, U-1&2 and U-3 & 4 is tabulated as below: -

Sl. No.	Description of Welding Rod	Location			Total (in No.)	Total (in KG)	Remarks
		Valve House	Unit-1 & 2	Unit -3 &4			
1	Electrode 9018-2.5 MM	414	0	13283	13697	326.12	1KG@42 Piece as per site record
2	Electrode 9018-3.15 MM	14838	29912	7869	52619	2630.95	1KG@20 Piece as per site record
3	Electrode 9018-4.0 MM	10663	4494	10008	25165	1756.11	1KG@14.33 Piece as per site record
Total Consumption of Welding Rod for Refurbishment work in KG						**4713.18**	
Total Financial Involvement for Refurbishment work in Rs						**30485566.00**	
Rate of Refurbishment work per KG						**Rs 6468.16 Per KG**	

Hence Rate for refurbishment of 3 (Three) no. of Bifurcation is **Rs 6468.16** Per KG. So, Total financial Involvement for Manpower & Consumable Materials for refurbishment or weld build up at VH, U-1&2 & U-3 & 4 including applicable overhead profit is Rs **30485566.00** excluding GST.

All the supporting documents like rate of labour, invoices of all consumables materials utilised at all the 3 (Three) location are enclosed herewith. It is to mention that OT (overtime) & Double OT on Sunday has also been considered as per site record. Rates of manpower has been taken from the approved rates of M/S PES. Since there was no scope of the any refurbishment of HM work in the contract of the R&M work of Kopili. Hence the above work should be treated as extra item work under the same.

Put up for kind perusal and further needful please.

4/26

09/07/2024, 21:34

Encl.

1) Utilization & invoices of Buffing wheels--- **ANNEXURE "A"**

2) Utilization & invoices of Acetylene/LPG --- **ANNEXURE- "B"**

3) Utilization & invoices of DPT Test--- **ANNEXURE- "C"**

4) Utilization & invoices of Welding Electrode--- **ANNEXURE- "D"**

5) Invoice & test report of NDT Test--- **ANNEXURE- "E"**

6) Utilization & invoices of Oxygen Gas--- **ANNEXURE- "F"**

7) a copy MOM--- **ANNEXURE- "G"**

8) a copy of approved rates--- **ANNEXURE- "H"**

9) Details of Manpower Expenditure--- **ANNEXURE- "X"**

10) Details of Consumable Expenditure--- **ANNEXURE- "Y"**

11) a copy of M/S PES Bill--- **ANNEXURE- "I"**

12) Photographs of Weld Build up works--- **ANNEXURE- "J"**

GM (C), HSM-1

DGM (C), HSM-1

ID: 001
Noted By: Anand Prakash
Noted On: 18/01/2024 Time : 18:34:22

Forwarded To : Utpal Borah

Trailing note of DGM(C) pl.

The proposal is about execution of extra item for refurbishment of 3 (three) nos. of bifurcation, 1(one) no. at upstream of Valve House and 2(two) nos. on Upstream of MIV under the work 'Design, fabrication, supply, erection, testing & commissioning of penstock and steel in -liners in Umrong system of Kopili Hydroelectric Project (275 mw), Assam "of Umrong WCS.

During reconstruction of penstock, it was observed that all the bifurcation areas of penstock at upstream of Valve House & upstream of MIV of Penstock-1 & 2 were under highly corroded / pitted /damaged condition. The refurbishment work was instantly required for which method of refurbishment for such areas was not envisaged in the extant contract. However, with the support of D&E wing & the Expert Consultant Mr. Ashok Sharma the methodology of repair/refurbishment for the bifurcation areas prior to cladding were finalised (Ref.3, Annexure G) and works were accordingly carried out. In terms of MOM dtd. 18.02.2023, it is was also decided that the refurbishment work would be compensated to M/s PESL on the basis of actual expenditure including contractor's profit and overhead profit as admissible.

On the basis of above facts and with available joint record of manpower, consumable materials and invoices pertaining to refurbishment work of 3 nos. of Bifurcation at the penstock, the actual expenditure is worked out as ₹. 3,04,85,566.00 (Three Crore Four Lakh Eighty-Five Thousand Five Hundred Sixty-Six Only) exclusive of GST.

The rate of refurbishment derived is Rs. 6468.16 per kg for all 3 (three) no. of bifurcations and the total consumption of Welding Rod for the all refurbishment work is 4713.18 kg. All supporting

5/20

documents are scrutinised and attached. The work was completed successfully on 11th Nov' 2023 prior to the commissioning of Unit-2.

As technical clearance deemed to be accorded by D&E Wing, technical approval of the Head of Project may kindly be accorded towards execution of the aforesaid extra work.

Put up for kind perusal and approval.

ID: 002
Noted By: Utpal Borah
Noted On: 27/01/2024 Time : 16:45:11

Forwarded To : Dilip Kumar Saikia

Please examine and put up

ID: 003
Noted By: Dilip Kumar Saikia
Noted On: 28/01/2024 Time : 12:22:40

Forwarded To : Chandra Prasad Saikia

Please examine and put up a note for further processing of this proposal.

ID: 004
Noted By: Chandra Prasad Saikia
Noted On: 29/01/2024 Time : 19:39:56

Forwarded To : Biswajit Sinha

Trailing notes may please be seen.

HSM may be requested to indicate the variation w.r.t. the original contract sum in terms of Cl:14, Sec-I of DOP and resubmit the same along with the deviation statement.

ID: 005
Noted By: Biswajit Sinha
Noted On: 30/01/2024 Time : 17:07:30

Forwarded To : Chandra Prasad Saikia

Instant proposal is submitted for obtaining **technical approval of Competent Authority** against execution of " **Refurbishment work of 3 (three) nos. of bifurcation, 1(one) no. at upstream of Valve House and 2(two) nos. on Upstream of MIV**" carried out through M/s PES who is already under the contract "**Design, fabrication, supply, erection, testing & commissioning of penstock and steel in -liners in Umrong system of Kopili Hydroelectric Project**" awarded vide order no.: NEEPCO/ED/C&P/F/C/KHEP (Restn)-546/Vol-1/2020-21/1878 dated 13-11-2020.

It appears that instant case is " **Variance during post award execution of work over award price in respect of contracts awarded by Corporate C&P**", executing authority may submit a deviation estimate indicating the variance w.r.to original contract sum in order to obtain technical approval of Competent Authority in terms of clause no. 14.1 ,Section – I of DOP .

May be resubmitted accordingly for further processing.

ID: 006
Noted By: Chandra Prasad Saikia
Noted On: 30/01/2024 Time : 21:39:37

Forwarded To :Utpal Borah

As desired by C&P Wing , pl. provide the deviation statement.

ID: 007
Noted By: Utpal Borah
Noted On: 31/01/2024 Time : 09:38:09

Forwarded To :Anand Prakash

As desired a deviation statement pertaining to HM works under R&M of KHPS up to last RA i.e. 39th RA bill is attached herewith for your information and further needful please.

GM (C) HSM DGM (C), CSD

ID: 008
Noted By: Anand Prakash
Noted On: 01/02/2024 Time : 17:20:45

Forwarded To :Utpal Borah
Attachments :statementnew; **Uploaded on** :01/02/2024 17:19:24
Attachments :statement; **Uploaded on** :01/02/2024 17:15:26

As desired ,the deviation statement pertaining to HM works under R&M of KHPS up to last RA i.e. 39th RA bill is attached for further needful.

ID: 009
Noted By: Utpal Borah
Noted On: 01/02/2024 Time : 17:32:02

Forwarded To :Chandra Prasad Saikia

Trailing notes -

Proposal may be examined and put up for further processing

ID: 010
Noted By: Chandra Prasad Saikia
Noted On: 01/02/2024 Time : 20:08:07

Forwarded To :Biswajit Sinha

Trailing notes may please be seen.

The proposal duly recommended by GM(C), HSM, seeking approval for **"Payment for procurement of extra quantity of material (fabricated stainless-steel plates) by M/S PES against the work: Repair of Hydro-Mechanical components under R&M of Khandong Power Station (2×23MW), Dist-Dima Hasao, Assam"**, involves the following:

1. In the meeting taken by ED (O&M) on 15.11.2021 pertaining to " Repair of HM Components (Gates) under R&M of Khandong Power Station (2 X 25 MW)" under Sl No: of the MOM it was decided as under:

"It has been decided that, the preliminary design of Embeded Parts shall be done on the basis of information available in the Technical Specification and procurement of materials by M/s PES shall be done on the basis of the same. However, final design & fabrication drawings shall be prepared after necessary exposure of smaller portion of the embeded parts through breaking of concrete. There is likelihood of excess procurement, since it will be based on tender documents without actual measerment for the for the interest of work. The excess quantity if any shall be taken into the account of the Corporation and the contractor shall be compensated suitably."

2. Subsequently, the contractor M/S PES procured 66.149 MT of Stainless-Steel Plates for 2nd stage embedded parts of gates to execute the work **"Repair of Hydro-Mechanical components under R & M of Khandong Power Station (2X 25 MW), Dist-Dima Hasao, Assam"** (vide Agreement No. NEEPCO/KHPS/C&P(C)/F-06/2022-2023/114, Dt. 07.07.2022 & Work order no. NEEPCO/KHEP/C&P(C)/F-05/Kopili P.S./2021-22/4070 dated 17/12/2021)

3. And out of the 66.149 MT of Stainless-Steel Plates procured 36.332 MT remained un-utilised. Now M/s PES has claimed compensation for the excess quantity of 32.611 MT of Stainless-Steel Plates procured by them. The same has already been taken into NEEPCO's account.

4. HOP vide U.O No: 963, dtd 18.08.2023 of o/o HOP has agreed in-principal to the proposal for payment against the excess procured material by M/S PES.

5. Payment was made to M/s PES under the above refered work orders as per SoP (Schedule of Payment) accepted pertaining to the work **"Design, Fabrication, Supply, Erection, Testing & Commissioning of Penstock and Steel In-Liners in Umrong System of Kopili Hydro Electric Project (275 MW), Dist-Dima Hasao, Assam"** (vide W.O No.NEEPCO/QP/ED/C&P/F/C/KHEP(Restn)-546/Vol-I/2020-21/1878, dtd. 13.11.2020 and Agreement No. NEEPCO/QP/ED(C&P)/R/C/KHEP(Restn)-666/2020-21, dtd. 28.01.2021) as indicated below:

Sl No.	Description	% of BOQ Rate	Remarks
1	Milestone- A	50%	For Supply of Material
2	Milestone-B	20%	For Fabrication of Material
		i) 75% of 20%	For completion of Fabrication
		ii) 25% of 20%	For testing of Fabricated material
3	Milestone-C	20%	For erection of Fabricated material
4	Milestone-D	10%	For commissioning & Trial run of Penstock & in liner.

and in same way total compensation worked out for the cost of supply & fabrication of 32.611 MT stands at ₹.1,16,59,654.00 (Rupees One Crore Sixteen lakh fifty-nine thousand six hundred fifty-four) only including GST as indicated in the FLM Note 001.

However, HSM may be requested to review the variation w.r.t. the original contract sum in terms of Cl. 15(a) or 15(b) and forward the proposal along with the deviation statement for further processing of the proposal.

Submitted please.

ID: 011
Noted By: Biswajit Sinha
Noted On: 02/02/2024 Time : 11:25:39

Forwarded To :Chandra Prasad Saikia

09/07/2024, 21:34

As discussed, fresh note may be put up with necessary correction .

ID: 012
Noted By: Chandra Prasad Saikia
Noted On: 02/02/2024 Time : 12:18:19

Forwarded To : Biswajit Sinha

Note: FLM Note 0011 was inadvertently posted. Therefor, the same may be ignored.

Trailing notes may please be seen.

The proposal forwarded by GM(C), HSM, KHPS, Umrongso, seeking technical approval for **one no Extra item:** ***"Refurbishment / Weld Build up of 3 (Three) nos of Bifurcation VH, Unit-1,2 & Unit-3,4 of KHPS"*** and variance thereof pertaining to the work **"Design, Fabrication, Supply, Erection, Testing & Commissioning of Penstock and Steel In-Liners in Umrong System of Kopili Hydro Electric Project (275 MW), Dist-Dima Hasao, Assam"** (vide W.O No.NEEPCO/QP/ED/C&P/F/C/KHEP(Restn)-546/Vol-I/2020-21/1878, dtd. 13.11.2020 and Agreement No. NEEPCO/QP/ED(C&P)/R/C/KHEP(Restn)-666/2020-21, dtd. 28.01.2021) involves the following:

1. M/s PES Engineers Pvt. Ltd. is executing the above refered work.
2. During the execution of the works it was noticed that Bifurcation area of penstock i.e. at the upstream of valve House & Upstream of MIV of Penstock-1 & 2 were highly corroded or damaged.
3. The matter was intimated to the D&E. Subsequently in the meeting was held on the 18.02.2023 in the office chamber of GM(C), HSM the methodology for repairing of the bifurcation of Kopili HPS was decided as below:
   i. A thorough visual inspection of the area to be carried out and the pitted area be identified.
   ii. Suitable NDT to be done to ascertain extent of damage.
   iii. After identification of the damage, the repair of the same shall be done by filling up the groove with the welding.
   iv. The filling shall commence after removing of the corroded metal and making grooves on the plate and subsequently filling up of the same with electrode confirming to E-9018
   v. The WPS qualified earlier for the penstock works shall be adopted for weld layup.
4. M/S PES vide their letter no. PESEPL/KHEP/PS/2023/155 dated 28.09.2023 submitted details of their financial involvement for the refurbishment works of 3 (Three) Nos of Bifurcation along with the supporting documents. The total financial involvement as claimed by M/S PES is found to be Rs 35,973,011.00 including GST. The claim has been scrutinised by HSM as per the available joint record of manpower, consumable material and ivoices.
5. The total financial implication along with deviation is indicated below:

Sl. No.	Details	Amount including GST (INR)	Remarks
1	Original Contract sum	2,541,995,502.00	
2	Total value of works executed (BOQ items)	2,535,788,053.00	(Ref:Deviation Statement)
3	Total value of works executed (Extra items)	316,503,127.00	(Ref:Deviation Statement)
4	Total value of works executed (BOQ, extra/substituted items)	2,852,291,180.00	(Ref:Deviation Statement)
3	Value of works executed (BOQ, Extra/substituted items) in excess of Contract Sum (4-5)	310,295,678.00	

9/20

4	Variance during post-award execution of work over original contract sum (BOQ, extra/substituted items) in terms of Cl:14(b), Sec-I of DOP	(+) 12.21%	

ED (O&M) is empowered to accord Technical approval in consultation with D&E in terms of Cl. 14.1, Sec-I of DOP.

The proposal may be forwarded to finance for further scrutiny and concurrence prior to approval of competent authority.

Submitted for perusal and farther needful please.

ID: 013
Noted By: Biswajit Sinha
Noted On: 02/02/2024 Time : 17:32:28

Forwarded To : Chandra Prasad Saikia

Instant Proposal submitted from HSM-I, KHPS, seeking approval technical approval against execution of **Extra item: *"Refurbishment / Weld Buildup of 3 (Three) nos of Bifurcation VH, Unit-1,2 & Unit-3,4 of KHPS"*** and variance thereof pertaining to the work "**Design, Fabrication, Supply, Erection, Testing & Commissioning of Penstock and Steel In-Liners in Umrong System of Kopili Hydro Electric Project (275 MW), Dist-Dima Hasao, Assam**" awarded to M/s PES (vide W.O No. NEEPCO/QP/ED /C&P/F/C/KHEP(Restn)-546/Vol-I/2020-21/1878 dtd.13.11.2020) is examined at C&P.

In this connection, detail evaluation note no. 0013 submitted by Sr. Manager (C), C&P may please be seen-

Concurrence of Finance is required for **obtaining technical approval of Competent Authority** to regularize the variation in BOQ against work order no. NEEPCO/QP/ED/C&P/F/C/KHEP(Restn)-546/Vol-I/2020-21/1878 dtd.13.11.2020 as per provision of clause no. **14.1 Section -I of DOP.**

Forwarded for scrutiny and concurrence please.

ID: 014
Noted By: Chandra Prasad Saikia
Noted On: 02/02/2024 Time : 21:22:23

Forwarded To : Ajay Kr Shaw

As referred proposal, the value of extra work executed to tune Rs.310,295,678.00 including GST against the original sum of Rs.254,19,95,502.00 which is about 12.21% in positive variance.

Now, the executing authority is proposed for regularization including extra executed work as per provision of clause no. **14.1 Section -I of DOP for technical approval which is agreed as proposed indeed with the recommendation by the project authority.**

Submitted please

DGM(E), C&P **DGM(F)**

ID: 015
Noted By: Ajay Kr Shaw
Noted On: 22/02/2024 Time : 10:50:06

10/20

App II - b/

09/07/2024, 21:34

Forwarded To :Chandra Prasad Saikia

Instant Proposal submitted from HSM-I, KHPS, seeking technical approval against execution of **Extra item: *"Refurbishment / Weld Buildup of 3 (Three) nos. of Bifurcation VH, Unit-1,2 & Unit-3,4 of KHPS"*** and variance thereof pertaining to the work **"Design, Fabrication, Supply, Erection, Testing & Commissioning of Penstock and Steel In-Liners in Umrong System of Kopili Hydro Electric Project (275 MW), Dist-Dima Hasao, Assam"** awarded to M/s PES (vide W.O No. NEEPCO/QP/ED /C&P/F/C/KHEP(Restn)-546/Vol-I/2020-21/1878 dtd.13.11.2020) is examined at C&P.

The salient points of the proposal are as under **(detail evaluation (note no. 005) submitted by Sr. Manager (C), C&P)** .

1. M/s PES is already executing a contract awarded vide NEEPCO/QP/ED /C&P/F/C/KHEP(Restn)-546/Vol-I/2020-21/1878 dtd.13.11.2020 for **"Design, Fabrication, Supply, Erection, Testing & Commissioning of Penstock and Steel In-Liners in Umrong System of Kopili Hydro Electric Project (275 MW)"**. Total contract value of the order is 25,41,995,502/- **only inclusive of applicable GST.**

2. As stated in the proposal, during the execution of the work, it was noticed that Bifurcation area of penstock i.e. at the upstream of valve House & Upstream of MIV of Penstock-1 & 2 were highly corroded or damaged. The details furnished by site engineer at pg. no. 1.

   The matter was intimated to the D&E. Subsequently in presence of engineers from the Project, D&E and the Expert Consultant Mr. Ashok sharma meeting was held on the 18.02.2023 in the office chamber of GM(C),HSM-1 to decide the methodology for repairing of the bifurcation of Kopili HPS.

3. Upon a realizing a methodology repair/refurbishment of the bifurcation areas, M/s PES has submitted that the said refurbishment was neither covered in the scope of the works of R&M of penstock nor in the work of SS cladding of Bifurcation. After detailed deliberation, it was mutually agreed by NEEPCO & M/S PES, that refurbishment work would be compensated on the basis of actual expenditure including contractor profit and overhead profit as admissible. All the refurbishment has been completed successfully on 11th November 2023 with the commissioning of Unit-2.

4. Accordingly, M/S PES vide their letter no. PESEPL/KHEP/PS/2023/155 dated 28.09.2023 submitted details of their financial involvement for the refurbishment works of 3 (Three) Nos of Bifurcation along with the supporting documents. The total financial involvement as claimed by M/S PES stands at **Rs 35,973,011/-** including GST. The claim has been scrutinized by HSM as per the available joint record of manpower, consumable material and invoices.

4. Accordingly, It is proposed to include the **refurbishment works of 3 (Three) Nos of Bifurcation** by considering it as extra work to the scope of main work awarded to M/s PES vide work order no. NEEPCO/QP/ED /C&P/F/C/KHEP(Restn)-546/Vol-I/2020-21/1878 dtd.13.11.2020 .

   The executing Authority / GM(E/M), I/c Kopili P.S has recommended for the same stating that technical clearance deemed to be accorded by D&E Wing, technical approval of the Head of Project may kindly be accorded towards execution of the aforesaid extra work

5. The amount for the additional work is treated as variation during post award execution of the original contract. The Percentage (%) Variance is worked out during post-award execution of work over original contract sum which stands at **(+) 12.21%.** Details of the calculation is furnished at note no. 013

11/20

6. Subsequently, instant proposal has been examined by site Finance and based on the recommendation of executing authority concurrence has been accorded for regularization of additional work with a percentage variance of **(+) 12.21%.** w.r.to original contract sum for obtaining technical **approval of the Competent Authority** as per provision of clause no.**14.1 Section -I of DOP.**

In view of the above, instant proposal is found to be considerable for obtaining approval of Competent Authority as per provision of clause no. 14, Section -I of DOP (2023) (**Variance during post award execution of work in respect of contracts awarded by Corporate C&P**) for regularization against execution of extra work by issue of a change order to the original contract.

Accordingly, the following approvals may please be obtained for issue of change order -

i) A technical approval, against Variation during post award execution of work/ supply over award price may be obtained in terms of clause no. 14.1, under Section – I of DOP (2023) wherein **GM and above is** empowered to accord technical approval for regularization of extra items under consideration of this proposal. (**15% of the contract value or Rs 15Crore whichever is lower**)

ii) Based on the technical approval, for issue of change order, approval may also be obtained as per provision of clause no.14.2 Under Section -I DOP (2023) wherein ED and above is empowered to accord approval for regularization of extra items with 15% of variation wr.t to original contract sum limited to 20Crores.

Submitted for obtaining necessary approval for regularization of the extra works as proposed.

DGM(E/M),C&P

HOP, KHPS

ID: 016
Noted By: Chandra Prasad Saikia
Noted On: 24/02/2024 Time : 19:59:12

Forwarded To : Dilip Kumar Saikia

Please examine and put up

ID: 017
Noted By: Dilip Kumar Saikia
Noted On: 25/02/2024 Time : 21:52:57

Forwarded To : Parag Saikia

As discussed.

Submitted please.

ID: 018
Noted By: Parag Saikia
Noted On: 29/02/2024 Time : 11:50:08

Forwarded To : Utpal Borah

App-II - 7

09/07/2024, 21:34

Trailing note at ID 002 may please be seen.

The instant work has been completed by M/s PESEPL satisfactorily under the main HM package as extra work. The variation 12.21 percentage is within the delegation power of GM for Technical approval in terms of DOP cl. 14.1 ,sec-I. Further,under the cl.no.33 (iii) of the contract, 50% of the rates of the executed quantity is payable to the contractor till finalisation of the rate.

Considering above HOP may kindly agree to the above.

Put up for kind perusal and approval.

ID: 019
Noted By: Utpal Borah
Noted On: 29/02/2024 Time : 12:05:20

Forwarded To : Dilip Kumar Saikia

Agreed

ID: 020
Noted By: Dilip Kumar Saikia
Noted On: 29/02/2024 Time : 13:15:03

Forwarded To : Utpal Borah

Trailing note.

1. HOP has agreed release of 50% of the rates of the executed quantity of the extra item. Accordingly, M/s PESEPL may be asked for raising the invoice.
2. The proposal is required to be routed through D&E wing for approval of the rates finally by the competent authority. Please resubmitted the proposal with required document, if any.

ID: 021
Noted By: Utpal Borah
Noted On: 01/03/2024 Time : 21:14:22

Forwarded To : Shashank Singh

Trailing notes may please be seen.

Vide Note under ID#001 a proposal was initiated by DGM(C) for seeking approval of the competent authority pertaining to execution of extra item for refurbishment of 3 (three) nos. of bifurcation, 1(one) no. at upstream of Valve House and 2(two) nos. on Upstream of MIV under the work **'Design, fabrication, supply, erection, testing & commissioning of penstock and steel in - liners in Umrong system of Kopili Hydroelectric Project (275 mw), Assam".**

The proposal was recommended by the EIC/CGM(C) under ID#002 for technical clearance of D&E and for further technical approval.

As desired by C&P, the variation statement was attached indicating a variation of 12.21% w.r.to original contract sum.

The proposal was further examined by C&P wing under ID#0013 & ID#0014 and was recommended for finance concurrence. The proposal was concurred by site finance at ID#0015.

The proposal was further recommended by DMG(E/M), C&P under ID#0016 for obtaining technical approval and approval of issue of change order as per DoP.

HoP under ID#0020 has accorded technical approval to the instant extra work and for release of 50% of the payable amount to the contractor.

13/20

09/07/2024, 21:34

In view of the above, the proposal may now be forwarded for Technical clearance of D&E and for accord of approval for issuance of change order.

Enclosed:- All Annexures are attached separately.

Submitted please.

ID: 022
Noted By: Shashank Singh
Noted On: 02/03/2024 Time : 12:36:43

Forwarded To : Utpal Borah
Attachments : AnnexureY; **Uploaded on :**02/03/2024 12:05:15
Attachments : AnnexureX; **Uploaded on :**02/03/2024 12:04:53
Attachments : AnnexureJ; **Uploaded on :**02/03/2024 12:04:11
Attachments : AnnexureI; **Uploaded on :**02/03/2024 12:03:51
Attachments : AnnexureH; **Uploaded on :**02/03/2024 12:03:17
Attachments : AnnexureG; **Uploaded on :**02/03/2024 12:02:34
Attachments : AnnexureF; **Uploaded on :**02/03/2024 12:00:30
Attachments : AnnexureE; **Uploaded on :**02/03/2024 12:00:10
Attachments : AnnexureD; **Uploaded on :**02/03/2024 11:59:54
Attachments : AnnexureC; **Uploaded on :**02/03/2024 11:59:37
Attachments : AnnexureB; **Uploaded on :**02/03/2024 11:59:10
Attachments : AnnexureA; **Uploaded on :**02/03/2024 11:58:37

Trailing notes pl.

The proposal may please be forwarded to D&E wing to obtain Technical Clearance and subsequently approval of the competent authority for issuance of change order in terms of DOP cl. 14.1 ,sec-I.

Submitted please.

ID: 023
Noted By: Utpal Borah
Noted On: 02/03/2024 Time : 21:25:50

Forwarded To : Susanta Deka

Kindly ref. trailing notes,

The proposal is forwarded for obtaining Technical Clearance from the D&E wing to accord approval please.

ID: 024
Noted By: Susanta Deka
Noted On: 05/03/2024 Time : 10:38:07

Forwarded To : Bijit Kr. Goswami

Trailing notes are referred.

Technical Clearance is sought on the proposal, please.

ID: 025
Noted By: Bijit Kr. Goswami
Noted On: 09/03/2024 Time : 19:40:00

App-II - B/

09/07/2024, 21:34

Forwarded To :Siddhartha Sankar Adhikari

PI examine and put up

ID: 026
Noted By: Siddhartha Sankar Adhikari
Noted On: 10/03/2024 Time : 10:28:23

Forwarded To :Sitangshu Dhar

Please examine and put up.

ID: 027
Noted By: Sitangshu Dhar
Noted On: 12/03/2024 Time : 20:55:32

Forwarded To :Sujeet Kumar Jha

The trailing FLM note may please be referred.

The proposal of Project Authority has been examined and it is observed that the work has been executed by the Project Authority in line with advice of the Expert Consultant. The proposal is found to be technically in order and may be recommended for technical concurrence by the competent authority. It may be noted that the financial/contractual/quantity are not examined by the undersigned.

Submitted for kind perusal and further needful please.

ID: 028
Noted By: Sujeet Kumar Jha
Noted On: 05/04/2024 Time : 11:36:52

Forwarded To :Sitangshu Dhar

The proposal is recommended for technical concurrence please.

ID: 029
Noted By: Sitangshu Dhar
Noted On: 08/04/2024 Time : 17:15:54

Forwarded To :Siddhartha Sankar Adhikari

Technical clearance accorded please

ID: 030
Noted By: Siddhartha Sankar Adhikari
Noted On: 09/04/2024 Time : 10:56:25

Forwarded To :Bijit Kr. Goswami

Trailing notes are referred.

The instant proposal is regarding execution of extra work against the contract "Design, Fabrication, Supply, Erection, Testing & Commissioning of Penstock and Steel In-Liners in Umrong System of Kopili HPS".

On receipt of technical clearance of D&E department, Technical Approval is hereby accorded for the above.

15/20

NEEPCO New Delhi

09/07/2024, 21:34

In the context, the following points are noted:

1. The work has been carried out by M/S PES Engineers Private Limited as extra work against W.O No. NEEPCO/QP/ED /C&P/ F/C/ KHEP(Restn)-546/ Vol-I/2020-21/1878 dtd.13.11.2020.
2. Variation w.r.t. the Contract Sum is 12.21%.
3. Executive Director is empowered for approval towards issue of change order.

The proposal for issue of change order is recommended for examination and concurrence of finance department, please.

ID: 031
Noted By: Bijit Kr. Goswami
Noted On: 09/04/2024 Time : 13:08:33

Forwarded To : Dwijen Kumar

Please vet.

ID: 032
Noted By: Dwijen Kumar
Noted On: 09/04/2024 Time : 15:59:39

Forwarded To : Cathleen Rupa Ranee

The work for Design, Fabrication, Supply, Erection, Testing & Commissioning of Penstock and Steel In-Liners in Umrong System of Kopili HEP (275 MW) was awarded to M/s PESEPL vide W.O. dated 13.11.2020 at a contract value of Rs.25,41,995,502 including GST.

It has been recorded that during the execution of the work, it was noticed that the bifurcation areas of the penstock upstream of the Valve House and MIV of Penstocks 1 & 2 were highly corroded or damaged and the matter was intimated to the D&E Dept. Subsequently, a meeting was held by the plant authority on 18.02.2023 with the D&E Dept. and the Expert Consultant, Mr. Ashok Sharma, to decide the methodology for repairing of the 3 (three) bifurcations (one upstream of the Valve House and two upstream of the MIV).

M/s PESEPL informed that the said refurbishment was not covered in the scope of the works of R&M of penstock or in the work of SS cladding of bifurcation. After detailed deliberation, it was mutually agreed by NEEPCO and M/s PESEPL that refurbishment work would be compensated on the basis of actual expenditure including contractor profit and overhead profit as admissible. It is recorded that all the refurbishment work has been completed successfully on 11.11.2023 with the commissioning of Unit-2.

M/s PESEPL has submitted a financial involvement of Rs.35,973,011 including GST for the refurbishment of the 3 (three) bifurcations along with supporting documents which are stated to have been scrutinised at site. It has been recorded that the claim has been scrutinized by HSM as per the available joint record of manpower, consumable material and invoices. It has been stated that OT (overtime) & double OT on Sunday has also been considered as per site record and rates of manpower has been taken from the approved rates of M/S PESEPL.

It has been proposed to include the refurbishment of the 3 (three) bifurcations as an extra work in the scope of main work awarded to M/s PESEPL. The instant proposal is shown as Extra Item No.9 in the Deviation/Variation Statement.

It is seen that there are 2 (two) other items of extra work (Extra Item No.7 & 8) in the Deviation/Variation Statement. The total cost of the three extra items including the instant proposal, over and above the contract value, is Rs.31,02,95,678 with a total post-award variation of (+)12.21%.

The executing authority has recommended the proposal and Technical Clearance has been accorded by ED(D&E) as per Clause 14, Remarks at (a), Section-I of the DoP. ED(O&M) has also accorded Technical Approval for the proposal in terms of Clause 14.1, Section-I of the DoP.

The Remarks at (c) and (d) against Clause 14.1, Section-I of the DoP may be ensured.

16/20

09/07/2024, 21:34

The proposal for issue of change order is agreed in Finance for approval of ED(O&M) in terms of Clause 14.2, Section-I of the DoP.

Submitted please.

ID: 033
Noted By: Cathleen Rupa Ranee
Noted On: 17/04/2024 Time : 16:09:58

Forwarded To : Bijit Kr. Goswami

Trailing notes are referred.

On receipt of concurrence of finance department, the proposal is approved for issue of change order.

As suggested by CGM(F) Concurrence at workflow 0033, Remarks at (c) and (d) under Clause No. 14.1, Section I of DOP may please be referred for needful action.

ID: 034
Noted By: Bijit Kr. Goswami
Noted On: 17/04/2024 Time : 17:44:51

Forwarded To : Susanta Deka

Preceding notes be referred to,

On receipt of the approval of the ED (O&M), necessary action for issue of change order please.

As suggested by CGM(F) Concurrence at workflow 0033, Remarks at (c) and (d) under Clause No. 14.1, Section I of DOP may please be referred for compliance/ needful please.

ID: 035
Noted By: Susanta Deka
Noted On: 18/04/2024 Time : 09:44:27

Forwarded To : Chandra Prasad Saikia

Trailing notes may kindly be referred .

Concurrence of Corporate Finance is accorded at note no. 0033 subject to a confirmation regarding condition no. c & d in the remarks column of clause no 14.1 of DOP.

Accordingly, it is requested to record clarification from executing authority for obtaining approval of Competent Authority please.

ID: 036
Noted By: Chandra Prasad Saikia
Noted On: 18/04/2024 Time : 10:47:19

Forwarded To : Utpal Borah

For needful as suggested at trailing note .

ID: 037

17/20

09/07/2024, 21:34

Noted By: Utpal Borah
Noted On: 18/04/2024 Time : 11:29:37

Forwarded To : Shashank Singh

May kindly refer the trailing notes.

Since the work had already been completed in Sept'23 hence there are no more monthly variations, therefore submission of monthly statement of all variations including financial implications to D(T) is now not required.

However, variation statement earlier submitted by DGM(C) at ID#008 is attached herewith for reference please. statementnew

50% of the payment for the instant extra work had already been released to the contractor after approval of HoP at ID#0020.Balance 50% will be released after issuance of change order/extra work approval order by C&P.

Submitted please.

ID: 038
Noted By: Shashank Singh
Noted On: 18/04/2024 Time : 15:44:51

Forwarded To : Utpal Borah

Trailing note.

Clarification of the executing wing is furnished at ID 0038 and found to be acceptable.

Forwarded for further needful please.

ID: 039
Noted By: Utpal Borah
Noted On: 18/04/2024 Time : 22:27:21

Forwarded To : Chandra Prasad Saikia

Approval of ED(O&M), NEEPCO has already been obtained for issue of change order as per provision of clause no.14 Under Section -I DOP (2023) for issue of change order.

As desired, it has been recorded from HSM, KHPS at note no. 0038 regarding condition no. c & d in the remarks column of clause no 14.1 of DOP and same may please be seen.

In view of the above, change order may be prepared to convey approval against execution of **Extra item: *"Refurbishment / Weld Buildup of 3 (Three) nos. of Bifurcation VH, Unit-1,2 & Unit-3,4 of KHPS"*** and variance thereof pertaining to the work **"Design, Fabrication, Supply, Erection, Testing & Commissioning of Penstock and Steel In-Liners in Umrong System of Kopili Hydro Electric Project (275 MW), Dist-Dima Hasao, Assam"** awarded to M/s PES (vide W.O No. NEEPCO/QP/ED /C&P/F/C/KHEP(Restn)-546/Vol-I/2020-21/1878 dtd.13.11.2020).

Submitted for further instruction.

DGM(E/M),C&P

HOP,KHPS

18/20

09/07/2024, 21:34

ID: 040
Noted By: Chandra Prasad Saikia
Noted On: 19/04/2024 Time : 20:29:20

Forwarded To : Susanta Deka

Preceding notes and recommendations at note #0039 and #0040.

Agreed as proposed for issue of change order.

The total variation needs to be incorporated in reports.

ID: 041
Noted By: Susanta Deka
Noted On: 20/04/2024 Time : 09:47:25

Forwarded To : Chandra Prasad Saikia

Change order may be prepared to convey approval against execution of **Extra item: *"Refurbishment / Weld Buildup of 3 (Three) nos. of Bifurcation VH, Unit-1,2 & Unit-3,4 of KHPS"*** and variance thereof pertaining to the work **"Design, Fabrication, Supply, Erection, Testing & Commissioning of Penstock and Steel In-Liners in Umrong System of Kopili Hydro Electric Project (275 MW), Dist-Dima Hasao, Assam"** awarded to M/s PES (vide W.O No. NEEPCO/QP/ED /C&P/F/C/KHEP(Restn)-546/Vol-I/2020-21/1878 dtd.13.11.2020).

ID: 042
Noted By: Chandra Prasad Saikia
Noted On: 24/04/2024 Time : 21:03:45

Forwarded To : Biswajit Sinha

Draft order conveying approval of extra item no 8 is placed for signing.

ID: 043
Noted By: Biswajit Sinha
Noted On: 25/04/2024 Time : 11:07:11

Forwarded To : Chandra Prasad Saikia

Trailing notes may be seen-

As per the order issued , PR may be submitted for generating change order at SAP.

ID: 044
Noted By: Chandra Prasad Saikia
Noted On: 03/05/2024 Time : 18:43:15

Forwarded To : Utpal Borah

Trailing note.

PR may please be created.

ID: 045
Noted By: Utpal Borah
Noted On: 03/05/2024 Time : 19:08:23

19/20

09/07/2024, 21:34

Forwarded To :Shashank Singh



20/20

Appendix_12. Ap12-1/3

VOITH HYDRO documents

Re: Kopili Unit one erection schedule/ Updated Manufacturing schedule and previous progress events in respect of Delivery.

From: Ashimjyoti Bordoloi [ashimjyoti@neepco.co.in]

To: gaurav.saxena@voith.com

Cc: [illegible]

Date: Thursday, March 2, 2023 at 09:47 AM GMT+5:30

Kind Attn : Mr Gaurav Saxena,

Dear sir,

With reference to trailing emails, you may kindly generate meeting link and share with us as per proposed listing.

Regards,

A.J Bordoloi

From: "Gaurav Saxena" <Gaurav.Saxena@voith.com>
To: "Ashimjyoti Bordoloi" <ashimjyoti@neepco.co.in>
Cc: [illegible]
Sent: Thursday, March 2, 2023 9:05:56 AM
Subject: RE: Kopili Unit one erection schedule/ Updated Manufacturing schedule and previous progress events in respect of Delivery.

To,

D. General Manager (E/M)

North Eastern Electric Power Corporation Ltd.,

Umrongso, Dima Hasao,

Assam - 788931

Reference : Work order No. NEEPCO/NHEP/CAP/Kopili P.S./W-380/2021-22/4712 dated 07.02.2022.

: Project Progress status submitted to Neepco dated 23- March-2022

: Kick off Meeting & Minutes of Meeting dated – 04- April -2022.

: Project Progress status submitted to Neepco dated – 28-07-2022

: Minutes of Meeting for Interface meeting containing various inputs dated :30-08-2022, submitted vide email dated 15-09-2022

: Project Progress status submitted to Neepco dated – 03-10-2022 .

: Project Progress status submitted to Neepco dated – 22-02-2023

Sub: Kopili Unit one erection schedule/ Updated Manufacturing schedule and previous progress events in respect of Delivery

Dear Sir

We hope this email letter finds you in good health and high spirits. This letter serves as a response to your recent email regarding the review meeting for the project.

We would like to confirm that the review meeting can be conducted on 03-Mar-23, i.e. coming Friday at 11:00 AM. We understand the importance of keeping our clients updated on the progre and we look forward to discussing the current status with you during the meeting. Please confirm the timeline to arrive the Team Meeting purpose.

In addition, we would like to address your concerns regarding our responsiveness to your requirements. We would like to assure you that we have always followed Neepco of the project stat provided important updates on a quarterly basis. We have also tabulated the updates in chronological order for your convenience.

Neepco placed the LOI on 31st Jan 2022, and as per the LOI's terms, all items should be delivered by 30-March 2023 (14 months from the date of LOI) including interfacing and final drawing accordingly we have started our system engineering and 1st Progress update submitted to Neepco on 23-Mar 22, containing the detailed scope and interfacing with other parts/stakeholders.

Project kick-off meeting/Interface meeting was conducted on 04-April-2022, and based on the Action log prepared, Voith submitted the design/drawings to Neepco for review and approval. interfacing with various stakeholders, taking all interfaces into consideration the final design was frozen on 10-August22,. Prior to the final design, Voith had submitted the project upda informing that due to delays in interfacing, all items would be dispatched by May 2023. However, to minimize the delays, Voith had already placed a casting order/ raw material orders at our r

As mentioned above, the design was finalized only after 10-Aug-2022, which was six months after the issuance of LOI. Initially, we had only considered one month for design, interfacing, fin however procurement and manufacturing time for the Runner & Associated items was estimated at 13 months. Given the above scenario, considering 10-Aug-22 as the start of manufacturin be delivered to the site within 13 months, i.e., by 09-Sep-2023.

We are putting all our efforts to maintain the manufacturing time and interfacing to deliver the equipment by June 2023. However, in case of any commercial consideration, the contractual da 09-Sep-2023.

We value our relationship with Neepco and are committed to ensuring that we meet your expectations. We appreciate your feedback and look forward to addressing any concerns you may h review meeting.

Best Regards

Gaurav Saxena

A.J. Bordoloi
महाप्रबंधक (ई/मे) / G.M (E/M)
कोपिली पावर स्टेशन (Kopili Power House
नेप, एनईएल) नि., उमरांगसो (असम)
NEEPCO LTD., Umrangso(Assam)

Ap.12 - 2/3

Voith Hydro demands

NEEPCO Schedule No. II Form No. 15

Application for extension of time

Part I

1	Name of contractor Name of work as given in the agreement	Voith Hydro Private limited Design, engineering, manufacturing, supply, erection and commissioning of Runner and other Turbine Parts of Unit#3 matching of 40.00 MW Kopili Power Station at NEEPS, NEEPCO Ltd. Umrangso, Dima Hasao, Assam -788822"
	Estimated amount put to tender	
	Agreement No.	
	W/o No.	NEEPCO/CONTRACTS/P.S.(W)/KOPILI P.S.(W)-UNIT#3/21-22/4170 dated 07.07.2021
	Date of commencement of work as per agreement	NEEPCO/NEEPS/Kopili P.S.(W)-UNIT#3/21-22/4170 dated 07.07.2021
	Period allowed as per agreement	21.07.2021
	Period for which extension granted previously	14 months from date of commencement – 31-March-2023
	Period for which extension applied for	N.A.
	Date on which extension applied for Hindrance on account of which extension is applied for with dates on which hindrance occurred and the period for which there are likely to last	28-Sep-2022 Refer below reason

Sl No	Nature of Hindrance	Date of occurrence	Period for which it is likely to last	Period for which extension is required	Overlapping Period, if any	Ext extension applied for	Remarks
1	Refer e-mail dated 02-Nov-2022, Neepco placed the LOI on 31st Jan 2022, and as per the LOI's terms, all items should be delivered by 10-March 2023 (14 months from the date of LOI) including interfacing and final drawing approval, , accordingly we have started our system engineering and 1st Progress update submitted to Neepco on 23-Mar 22, confirming the detailed scope and interfacing with other parts/stakeholders. Project kick-off meeting/Interface meeting was conducted on 04-April-2022, and based on the Action log prepared, Voith submitted the design/drawings to Neepco for review and approval. Due to criticality in interfacing with various stakeholders, taking all interfaces into consideration the final design was frozen on 10-August22,. Prior to the final design, Voith had submitted the project status on 28-July-2022, informing that due to delays in interfacing, all items would be dispatched by May 2022. However, to minimize the delays, Voith had already placed a casting order/ raw material orders at our risk and cost.	02-Nov-2022		31st March to 08 Sep 2023		162 Days	Delay not attributable to contractor hence Extension to be granted

Chief Engineer (Civil) / C.E. (I/S)
office of the CE / Kopili Power Stations
NEEPCO Ltd. / Assam (India)

Ap 12 - 3/3

	As mentioned above, the design was finalized only after 18-Aug-2022, which was six months after the issuance of LOI. Initially, we had only considered one month for design, interfacing, Nagpur approval, however procurement and manufacturing time for the Runner & Associated items was estimated at 13 months. Given the above scenario, considering 16-Aug-22 as the start of manufacturing, all items should be delivered to the site within 13 months, i.e., by 09-Sep-2023.						

Total period for which extension is required for on account of hindrances mentioned above

1. Description required for same wish (in details)
   Total extension of time required for (i) & (ii)

Submitted as Manager

Signature of Contractor/ Supplier

(A.J. Dandale)

1

AP.12-4/8

NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
(A Govt of India Enterprise)
KOPILI HYDRO ELECTRC PLANT
UMRONGSO, DIMA HASAO, ASSAM. PIN-788931.

NO: NEEPCO/KHPS/CSD/B-1/2023-24/ 1092 Dated. 17.02.2024

To,

The Deputy General Manager (F&A)
F & A Wing, KHPS
NEEPCO Ltd., Umrongso

Sub: Forwarding of Verified Tax Invoice against Design, engineering, manufacturing, supply, erection and commissioning of Runner and other Turbine Parts of Unit#1 machine of 4x50 MW Kopili Power Station at KHPS.

Sir,

Please find enclosed herewith Verified Tax Invoice against Design, engineering, manufacturing, supply, erection and commissioning of Runner and other Turbine Parts of Unit#1 machine of 4x50 MW Kopili Power Station at KHPS.

Sl. No.	Name of Firm	P.O No. & Date	Invoice No.	Verified amount	Remarks.
1.	M/s Voith Hydro Private Limited, Naida.	NEEPCO/KHEP/C&P/Kopili P.S/W-380/2021-22/4712 dtd.07/02/2022.	421124101272/A dtd.30/11/2023.	Rs. 74,55,682.50	15% MRC payment with GST

Enclosure(s): -

O/C

1. Verified Invoice No: 421124101272/A dtd.30/11/2023.
2. Consignment Note No: 23164, 23165 and 23168.
3. e-Way Bill No: 6516 3197 5405.
4. Copy of Previously verified 65% Invoice.
5. Packing List.
6. SES No: 1000033324, 1000033316, 1000033317, 1000033311, 1000033318, 1000033313, 1000033319, 1000033314.
7. Technical Inspection Report.

Thanking you.

Yours faithfully,

16/2/24

Deputy General Manager(C),
Central Store, KHPS,
NEEPCO Ltd., Umrongso

+Memo No.: NEEPCO/KHPS/CSD/B-1/2023-24/ Dated.

Copy to:

1. The HoP, KHPS for favour of kind information please.
2. The GM(E/M), Kopili PS, KHPS for kind information please.

16/2/24

Deputy GeneralManager(C),
Central Store, KHPS,
NEEPCO Ltd., Umrongso

TAX INVOICE

VOITH

Address :-	Invoice No.	Date	SAP Ref No.
VOITH HYDRO PRIVATE LIMITED Plot No.107, GIDC, Savli, Manjusar,Vadodara - 391775 Gujarat GSTIN :24AABCV5045112G	4211241912721/A	30.11.2023	7004461715/A
	Sales Order No :	2010215	IEC NO # 0910007091
	Customer Code	6933807	CIN U40109DL2002PTC152516
	LOI Ref :NEEPCo/JOHEP/C&S/W-360/21-22/4400 dt. 31.01.2022 PO Ref :NEEPCO/JOHEP/C&S/Koppli P.S./W-360/2021-22/4713 dt.03.03.2022		

Buyer : Bill to party	Ship to Party
North Eastern Electric Power Corporation Limited Umiongsu, Dima Hasao Umiongsu Assam - 788931 GST No. : 18AAACN0985J2ZQ	North Eastern Electric Power Corporation Limited The Sr. Manager (C) Central Store,JOHPC NEEPCO Ltd.Dima Hasao Umiongsu,Assam -788931 GSTIN No. 18AAACN0985J2ZQ

Project Name : Kopli Turbine Parts

LR No.	Transporter Name	Letter of Credit	INCOTERMS 2020
		Not Applicable	Kopli HEP site
Advising Bank Details :	BNP PARIBAS, East Towers (Good Earth), 6th & 9th Floor, 25, Barakhamba Road, New Delhi-110001, INDIA. Account 00935155620001N, IFSC - BNPA0000005 , SWIFT- BNPAINBBDEL		Dispatch from Vadodara /GJ

Quantity	UoM (as per HSN Tariff)	WBU No.	Description of Goods as per WBU	HS Code (8 or 8 digit)	Currency	Unit Price	Total Price
1	Set	3.3	Guide Vane + Template	84109000	INR	12,332,500	12,332,500
1	Set	3.4	Regulating Ring Without Servomotor	84109000	INR	6,695,000	6,695,000
1	Set	3.5	Bush Housing + Self Lubricated Bush + Seals + O Rings / Circlips	84109000	INR	3,830,000	3,830,000
1	Set	3.6	Lever And Linkages	84109000	INR	2,865,000	2,865,000
1	Set	3.7	Thrust Relief Pipe	84109000	INR	2,490,000	2,490,000
1	Set	3.8	Air Fasteners of Distributor	84109000	INR	3,342,500	3,342,500
1	Set	4	Upper & Lower Draft tube Cone With Frigid For Air Admission including Dismantling Joints Manhole	84109000	INR	3,830,000	3,830,000
1	Set	5.1	Wear/facing plates for head cover	84109000	INR	955,000	955,000
1	Set	5.2	Wear/facing plates for bottom ring	84109000	INR	955,000	955,000
1	Set	5.3	Labyrinths at Runner (moving)	84109000	INR	573,000	573,000
1	Set	5.4	Labyrinths at Head cover (Stat.)	84109000	INR	955,000	955,000
1	Set	5.5	Labyrinths at Bottom ring (Stat.)	84109000	INR	955,000	955,000
1	Set	5.6	Bearing Sub	84109000	INR	293,500	293,500
1	Set	5.7	Bushes for top and bottom stems of guide vanes	84109000	INR	955,000	955,000
1	Set	5.8	Bushes for regulating ring	84109000	INR	573,000	573,000
1	Set	5.9	Air seals (top seal, rubber cord, O-Rings, packing, gaskets etc.) For runner, guide vanes & other components	84109000	INR	573,000	573,000
						Taxable Total	INR 42,122,500
Packages	16 Package					IGST	INR 2,582,050
						CGST	
						SGST	
						CESS	
						Less: LUT	
						Gross Amount	INR 48,704,550

PAYMENT TERMS

a) 10% Advance down payment on submission of BG	4,731,750	
b) 65% of supply price with applicable taxes on dispatch	31,301,918	
c) 15% of Supply price due on receipt of material at site	7,455,683	
d) 10% of supply price due on commissioning	5,735,680	
25% of supply price with applicable taxes due more		Amount to be Paid 7,455,683

TOTAL INVOICE AMOUNT IN WORDS Indian Rupees Forty eight million seven hundred four thousand five hundred fifty only

AMOUNT TO BE PAID IN WORDS Indian Rupees Seven million four hundred fifty five thousand six hundred eighty three only

Declaration :We declare that this invoice shows the actual price of the goods described and that all particulars are true and correct.

QR Code

IRN: 39c7d792d66bb02f033f9dd05435aeb173da8f5b1700900d3e02035fa6a83c5c

For Voith Hydro Private Limited

(Authorised Signatory)

Voith Hydro Pvt. Ltd., Registered Office :- UF-3/C, 2nd Floor, Rikhabh Ipex Mall, IP Extension, Delhi - 110092

North Eastern Electric Power Corporation New Delhi

दिवाकर Bill No: 218 dtd: 12-02-2024

AP.12-5/8

Ref: - 1. P.O No.: NEEPCO/KHEP/C&P/Kopili P.S/W-380/2021-22/4712 Dtd.07/02/2022.
2. Delivery Time Extension No: NEEPCO/KHPS/C&P/Kopili P.S/W-380/2023-24/1284 dtd.23/08/2023.
3. Invoice No: 421124101272 dtd. 20/10/2023 previously verified for 65% payment.
4. Invoice No: **421124101272/A dtd.30/11/2023**
5. SAP P.O. No: 3700006629
6. SES No: 1000033324 (10% Advance)
1000033316 (10% Advance)
1000033317 (65% Despatch)
1000033311 (65% Despatch)
1000033318 (15% MRC)
1000033313 (15% MRC)
1000033319 (10% Commissioning)
1000033314 (10% Commissioning)

Bill for Item Nos: 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 3, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9.

Bill for 15% of supply price on receipt of materials as per Clause No: 8.A)(iii) of Payment terms of referred P.O. Materials were received in full & in good condition on 06/11/2023 at site vide Consignment Note No: 23164, 23165 & 23168 by K7 Transporter.

A) Gross Invoice Value	= Rs. 4,97,04,550.00
B) Ex-Works Price	= Rs. 4,21,22,500.00
C) 15% of Ex-Works price	= Rs. 63,18,375.00
D) Corresponding GST	= Rs. 11,37,307.50
Now, payable 15% with taxes (C+D)	= Rs. 74,55,682.50 (as per SES No: 1000033318+ 1000033313)

(Rupees Seventy-four lakhs fifty-five thousand six hundred eighty-two & paisa fifty) only

Chargeable to Kopili P.S., KHPS for the F.Y 2023-24.

13/02/2024

16/2/24

NEEPCO New Delhi

Receipt No. 539
7/11/23
Power House
NERP, NEEPCO Ltd., Umrangso, Assam

e-Way Bill

E-Way Bill No:	6516 3197 5405
E-Way Bill Date:	20/10/2023 05:45 PM
Generated By:	24AAB CV504 1J1ZG - VOITH HYDRO PVT LTD
Valid From:	20/10/2023 05:45 PM [3900Kms]
Valid Until:	18/03/2024 [ODC-MultiVehicle]
Part - A	
GSTIN of Supplier	24AABCV5041J1ZG,VOITH HYDRO PVT LTD
Place of Dispatch	Vadodara,GUJARAT-391775
GSTIN of Recipient	18AAA CN999 1J22Q ,NORTH EASTERN ELECTRIC POWER CORPORATION LTD
Place of Delivery	Umrangso,ASSAM-788931
Document No.	421124101272
Document Date	20/10/2023
Transaction Type:	Regular
Value of Goods	49704550
HSN Code	84109000 - GUIDE VANE + TEMPLATE(+15)
Reason for Transportation	Outward - Supply
Transporter	24AGCPT0333M2Z2 & K 7 TRANSPORT
Part - B	

For NEEPCO Ltd.

Manager

05/11/23

Ap. 12-6/8

Mode	Vehicle / Trans Doc No & Dt.	From	Entered Date	Entered By	CRWB No. (If any)	Multi Veh.Info (If any)
Road	GJ06AZ8649 & 23168 & 20/10/2023	VADODARA	20/10/2023 05:49 PM	24AABCV5041J1ZG	-	VADODARA-ASSAM (1.00 SET)
Road	HR73B3529 & 23165 & 20/10/2023	VADODARA	20/10/2023 05:48 PM	24AABCV5041J1ZG	-	VADODARA-ASSAM (1.00 SET)
Road	HR73B9070 & 23164 & 20/10/2023	Vadodara	20/10/2023 05:45 PM	24AABCV5041J1ZG	-	-

65152875405

539
7/11/23

e-Way Bill

E-Way Bill No.	6516 3197 5405
E-Way Bill Date:	20/10/2023 05:45 PM
Generated By:	24AAB CV504 1J1ZG - VOITH HYDRO PVT LTD
Valid From:	20/10/2023 05:45 PM [3000Kms]
Valid Until:	16/03/2024 [ODC-MultiVehicle]
Part - A	
GSTIN of Supplier	24AABCV0041J1ZG,VOITH HYDRO PVT LTD
Place of Dispatch	Vadodara,GUJARAT-391775
GSTIN of Recipient	18AAA CN359 1J2ZQ ,NORTH EASTERN ELECTRIC POWER CORPORATION LTD
Place of Delivery	Umrangso,ASSAM-788831
Document No.	421124161272
Document Date	20/10/2023
Transaction Type:	Regular
Value of Goods	49704550
HSN Code	84109000 - GUIDE VANE + TEMPLATE(+15)
Reason for Transportation	Outward - Supply
Transporter	24AGCPT0333M2Z2 & K 7 TRANSPORT
Part - B	

For [illegible]

[illegible]

07/11/23

AP.12 – 7/8

Mode	Vehicle / Trans Doc No & Dt.	From	Entered Date	Entered By	CEWB No. (If any)	Multi VehInfo (If any)
Road	GJ06AZ9849 & 23168 & 20/10/2023	VADODARA	20/10/2023 05:49 PM	24AABCV5041J1ZG	-	VADODARA-ASSAM (1.00 SET)
Road	HR73B3529 & 23165 & 20/10/2023	VADODARA	20/10/2023 05:48 PM	24AABCV5041J1ZG	-	VADODARA-ASSAM (1.00 SET)
Road	HR73B6070 & 23164 & 20/10/2023	Vadodara	20/10/2023 05:45 PM	24AABCV5041J1ZG	-	-

K7 TRANSPORT

II-वी प्रतिलिपि क्रमांक : II

Email : k7transport@gmail.com
Tiwari Compound, Kakaji Farm, Harni-Kotali Road, Baroda - 390 022
Gujarat. Tel.: 0265-2541000. Mob. :9428977737, 9727080212
Branch Office : Om Sai Pump Parking, Ambapwadi Phata, N.H.No. 4, Vadgaon, Kolhapur, Maharashtra. Mob.: 9890360036

CAUTION
This consignment will not be detained diverted rerouted or rebooked without consignee Bank's written permission, it will be diverted at destination
Address of Delivery Office :

AT OWNER'S RISK

CONSIGNEE COPY

INSURANCE
The customer has stated that :
- He has not insured the consignment OR
- He has insured the consignment
  Company.....
  Policy ..... Date .....
  Amount ..... Risk O/R

NOTICE
The consignment Covered by this set of special Lorry receipt form shall be store at the destination under the control of the transport operates and shall be delivered to or to the order the consignee Bank whose name is mentioned in the Lorry receipt will under no circumstances be delivered to any one without the written authority from the consignee's bank or its order endorsed on the or consignee copy or on a seperate letter or authority.

TRUCK NO. : HR73B9070

Consignor's Name & Address: Voith Hydro Pvt Ltd. Plot NO-107, KIDC, Usauli, Manjwar

G. R. No. 23164 Date 20/10/2023

Consignee's Name & Address: North Eastern Electric Power Corp. Ltd. The Sr. Manager (C) Central Store, KHEP, NEEPCO, Dimahasao

From Manjwar

To Dimahasao Assam

Pckgs.	DESCRIPTION (Said to Contain)	WEIGHT Actual	WEIGHT Charged	RATE	AMOUNT TO PAY / PAID Rs.	AMOUNT TO PAY / PAID Ps.	Remarks
	Material as per Invoice Attached	32FT open ODC Truck load		Freight	T.B.B		
				Hamali	at		
				St. Charge			
	Invoice No.: 4211241 01272	VALUE Rs.		Total	V.T.W		
	GST NO. : 24AGOPT0333M2Z2			A. O. C.			
	GST PAYABLE BY : CONSIGNOR / CONSIGNEE / TRANSPORTER			G.TOTAL			

- Subject to Baroda Jurisdiction
- Booking as per terms and conditions printed overleaf.
- Not responsible for Leakage & Breakage

For K7 TRANSPORT

E-Ticket

~476~
162

Ap.12 - 8/8

॥ श्री गणेशाय नमः ॥

K7 TRANSPORT

Email : k7transport@gmail.com
Tiwari Compound, Kakaji Farm, Harni-Kotali Road, Baroda - 390022
Gujarat. Tel.: 0265-2541000. Mob. :9428977737, 9727060812
Branch Office : Om Sai Pump Parking, Ambapwadi Phata, N.H.No. 4,
Vadgaon, Kolhapur, Maharashtra. Mob.: 9890360036

CAUTION
This consignment will not be detained diverted rerouted or rebooked without consignee Bank's written permission, it will be diverted at destination
Address of Delivery Office :
Door Delivery

AT OWNER'S RISK

CONSIGNEE COPY

INSURANCE
The customer has stated that :
- He has not insured the consignment OR
- He has insured the consignment
  Company.....
  Policy ..... Date .....
  Amount ..... Risk .....

NOTICE
The consignment Covered by this set of special Lorry receipt form shall be store at the destination under the control of the transport operates and shall be delivered to or to the order the consignee Bank whose name is mentioned in the Lorry receipt will under no circumstances be delivered to any one without the written authority from the consignee's bank or its order endorsed on the or consignee copy or on a seperate letter or authority.

TRUCK NO. : HR 738352 G

Consignor's Name & Address: Vaith Hydro Pvt Ltd.
Plot NO-107, GIDC, Savli, Manjusar

Consignee's Name & Address: North Eastern Electric Power Corp
The Sr. Manager (c) Central Store, NHPC, Dimapur

G. R. No 23165 Date 20/10/2023

From Manjusar

To Dimapur Nagaland

Pckgs.	DESCRIPTION (Said to Contain)	WEIGHT Actual	WEIGHT Charged	RATE	AMOUNT TO PAY / PAID Rs.	Ps.	Remarks
	Material as per Invoice Attchd	32 MT Truck	open	Frieght	T.B.B		
				Hamali	A/-		
				St. Charge			
	Invoice No.: 42/12410/272	VALUE Rs.		Total	U/H		
	GST NO. : 24AGOPT0333M2Z2			A. O. C.			
	GST PAYABLE BY : CONSIGNOR / CONSIGNEE / TRANSPORTER			G. TOTAL			

- Subject to Baroda Jurisdiction
- Booking as per terms and conditions printed overleaf.
- Not responsible for Leakage & Breakage

For K7 TRANSPORT

~ 477 ~
163

K7 TRANSPORT

॥श्री गणेशाय नमः॥

Email : k7transport@gmail.com
Tiwari Compound, Kakaji Farm, Harni-Kotali Road, Baroda - 390 022
Gujarat. Tel.: 0265-2541000. Mob. :9428977737, 9727080212
Branch Office : Om Sai Pump Parking, Ambapwadi Phata, N.H.No. 4, Vadgaon, Kolhapur, Maharashtra. Mob.: 9890360036

CAUTION
This consignment will not be detained diverted rerouted or rebooked without consignee Bank's written permission, it will be diverted at destination
Address of Delivery Office :

AT OWNER'S RISK

CONSIGNOR COPY

INSURANCE
The customer has stated that :
- He has not insured the consignment OR
- He has insured the consignment
  Company.....
  Policy ..... Date .....
  Amount ..... Risk .....

NOTICE
The consignment Covered by this set of special Lorry receipt form shall be store at the destination under the contrl of the transport operates and shall be delivered to or to the order the consignee Bank whose name is mentioned in the Lorry receipt will under no circumstances be delivered to any one without the written authority from the consignee's bank or its order endorsed on the or consignee copy or on a seperate letter or authority.

TRUCK NO. : GJ06A2664

Consignor's Name & Address: Voith Hydro Pvt Ltd. Plot No 107, GIDC, Manjusar.

Consignee's Name & Address: North Eastern Electric Power Corp. The Sr. Manager (c) Central Stay. KHPC, Dima Hasao

G. R. No. 23168 Date 20/10/2023

From Manjusar

To Dima Hasao, Ass

Pckgs.	DESCRIPTION (Said to Contain)	WEIGHT Actual	WEIGHT Charged	RATE	AMOUNT TO PAY / PAID Rs.	AMOUNT TO PAY / PAID P.s.	Remarks
	Material as per Invoice Attached,	open Truck Load		Frieght	T-B-B		
				Hamali	At		
				St. Charge			
	Invoice No.: 4211241012	VALUE Rs.		Total	VHV		
	GST NO. : 24AGOPT0333M2Z2			A. O. C.			
	GST PAYABLE BY : CONSIGNOR / CONSIGNEE / TRANSPORTER			G. TOTAL			

- Subject to Baroda Jurisdiction.
- Booking as per terms and conditions printed overleaf.
- Not responsible for Leakage & Breakage

For K7 TRANSPORT

~ 478 ~ 164

ANDRITZ	KOPILI R&M

Report

on

Unit#1 spiral casing present condition

and recommendation for its

Replacement/Repair



PROJECT	KOPILI HYDRO ELECTRIC PLANT (4X50 MW) R&M, ASSAM, INDIA	
PURCHASER		NORTH EASTERN ELECTRIC POWER CORPORATION LTD (A GOVT. OF INDIA ENTERPRISE)
CONTRACTOR	ANDRITZ	ANDRITZ HYDRO PVT. LTD.

1

1.1. PURPOSE

The purpose of the report is to elaborate the spiral casing present condition and recommendation for its replacement/ repair.

2. METHODOLOGY

Thickness mapping of complete spiral casing conducted through UT method. Detail study of the measurement report by Andritz expert. Analytical calculation is performed for the minimum required thickness of spiral casing segments at various sections.

3. OBSERVATION

A. Material loss observed in complete spiral casing. Major material loss is in the bottom area of various sections where support plates are welded.

B. Thickness of base material below these support plate deteriorates up to 60% of original thickness.

C. From section 16-19 material loss is on whole spiral area. In addition, surface condition in all these areas are also very bad.

D. W19-W18 is the section in which puncture was observed during repair

E. Round hole found in section- 3 of dia. almost 12 mm and depth 20-22 mm

F. From performed thickness measurement it is noted that high deterioration occurred due to acidic water.

G. Mainly bottom side repair indicates that, higher sediment load might be during monsoon increased the wear rate. To protect the deterioration, first weld repair (overlay) was done on base material and further support plate welding. Integrity and structural behaviour of spiral case with civil and base material unrepaired zone might impacted due to stresses developed by multiple repairs.

H. As no past operational data/ history available, cannot be calculated start / stop cycle per day. This information directly links to fatigue life of spiral case

Ap13-2/16

Sr. No.	Ferrule No.	Thickness	Thickness below support plate	Original design Thickness
1	W0-W20	64.2mm – 2.8mm	NA	35mm
2	W20-W19	40.6mm-7.9mm	NA	35mm
3	W19-W18	24.9mm-12.5mm	NA	25mm
4	W18-W17	27.9mm-10.8mm	NA	25mm
5	W17-W16	30.2mm-14.5mm	NA	25mm
6	W16-W15	28.5mm-21.4mm	NA	25mm
7	W15-W14	34.4mm-29.4mm	23.2mm-20.3mm	32mm
8	W14-W13	34.4mm-30.2mm	21.3mm-20.1mm	32mm
9	W13-W12	32.7mm-30.1mm	26mm-21.2mm	32mm
10	W12-W11	33.9mm-31.1mm	25.5mm-23.0mm	32mm
11	W11-10	33.8mm-30.6mm	24.6mm-22.7mm	32mm
12	W10-W09	33.3mm-31.9mm	27.3mm-26mm	32mm
13	W09-W08	42mm-39.8mm	32.7mm-30.8mm	40mm
14	W08-W07	42.6mm-39.2mm	35mm-30.3mm	40mm
15	W07-W06	42.5mm-38.4mm	34.4mm-30.8mm	40mm
16	W06-W05	42.4mm-39.5mm	30.7mm.28.9mm	40mm
17	W05-W04	43.1mm-39.7mm	31.9mm-30.5mm	40mm
18	W04-W03	43.2mm-39.6mm	30.7mm-23mm	40mm
19	W03-W02	42.6mm-38.2mm	34.7mm-33.1mm	40mm
20	W02-W01	40.8mm-38.0mm	34.4mm-32.8mm	40mm
21	W01-W00	42.2mm-39.1mm	34.4mm-33.5mm	40mm
22	W00-W(-1)	57.0mm-10.0mm	28mm-15mm	40mm
23	W0(-1)-W0(-2)	41.9mm-33.0mm	NA	40mm

Table -1: Range of thickness at different section of spiral casing

3

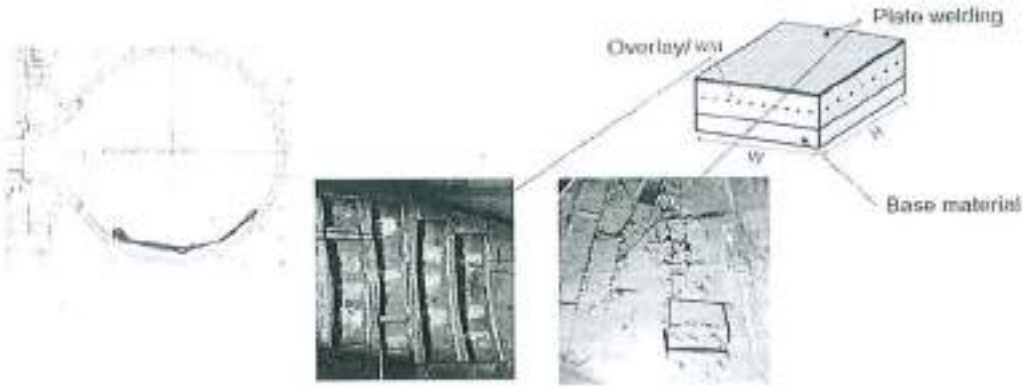


Fig.-1: Support plate welding on base material



Fig.-2: Spiral section no. 20 (Ferrule no. W20-W0)



Fig.-3: Hole in Section no. 3



Fig.-4: After removal of plate support

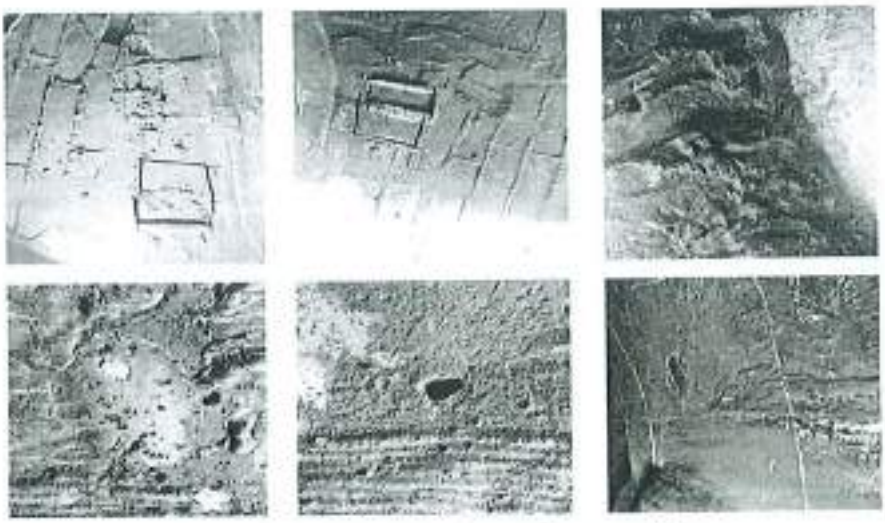


Fig.-5: Spiral casing surface condition

4. RECOMMENDATION

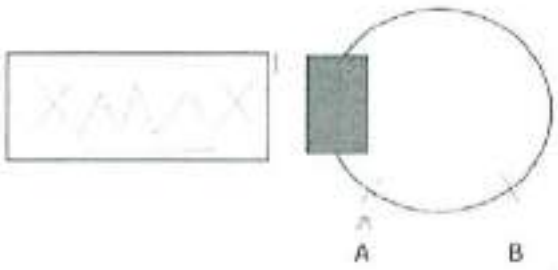
4.1 Option -1

Recommendation	Replacement of spiral casing
Procedure	→ Removing complete existing spiral case with stay ring including servo foundation and PRV pit (limited area due to spiral extension pipe) by demolishing complete concrete. → Same design spiral case, stay ring and regulating and servomotor foundations manufacturing. (Hydraulic and Mechanical design for the new units already complete. We could not restart the hydraulic design processes). → Design a spiral case considering installation limitations and transport limitations. → Manufacturing of spiral casing, pressure testing of spiral case at Workshop. → Rebuilding the foundations for spiral case at site. → Installation of spiral case with stay ring. → First stage concreting. → Second stage concreting building, servo foundations, PRV pit and turbine pit. → After proper soaking time, Reinstallation of unit. → Tentative timeline: Design (3.5 months), procurement (9-11 months) and installation (3 months).

New Delhi Electric Power Division

Pros	→ Proper use of opportunity, as unit in dismantled condition. → Safe future operations and long life, As all core components new for this unit (MIV, PRV, turbine and generator). → New spiral case and stay ring, and headcover/ bottom ring seal rings can be design taking more / best preventive measures for acidic water problem. Which shift the current break down, generation loss and maintenance for long period. → Increased man/machine safety and reliable operation during deigned overload. Which add value in better generation.
cons	→ Designing and planning will be time consuming with existing boundary limits. → Significant concrete demolishing, challenging and time taken installation procedures. → Approach for excavation/ concrete removal machine. → Pressure test cannot be done at site. → U#2 generation will impact for period due to vibrations from concrete removal. → Challenging manufacturing due to site installation constraints.

4.2 Option - 2

Recommendation	Repair of spiral casing
Procedure	→ All the remaining support plates are to be removed and new support plate cut to size and should be welded on the bottom part of sections (between point A -B in below sketch). The welding to be done in staggered welding proposed for better fusion with base plate.  → Weld repair on all other area of the spiral → Below quality test should be performed on the weld area a. Root DP b. Final DP c. Ultrasonic flaw detection as per ASME SEC VIII-DIV-1 acceptance criteria for class A and class B joint.

Pros	→ Time effective solution. → No concrete removal etc. → No impact on regulating foundation.
Cons	→ Impact on spiral casing hydraulic profile, as it follow the base material, if weld overlay done earlier disturbed same will reflect during plate welding. → There will not be any functional guarantee, as cannot be predict behavior of base material and remaining area where plate work is not performed. → Always carry a risk of safety. → Tentative Timeline: Removal of support plate 1.5month, Material procurement (hydraulic pressed by template) 4 months, Plate installation, grinding, UT and painting 2 months



Ap13 - 5/10

The CGM (C)/HOP Kopili
North Eastern Electric Power Corporation Limited,
KOPSY,Kopili Hydro Electric Project
Umrangsu
e-mail: hop_khep@rediffmail.com
Kind Attn. Mr. Dilip Saikia

Imran N Shaikh
ANDRITZ HYDRO

p: +91 7480400474
F:+91 7480403393 / 394
imran.shaikh@andritz.com

AH letter No.: **INS-KOPILI - 2022 - 180**

Subject/Betreff: KOPILI – Material deterioration in Unit#1 spiral casing

Reference:

1. **No. QP/C&P/ F/E/KHEP-E/M Pkg/2093-Vol-I/06 Date: 03.04.2021**
2. **No. QP/C&P//F/E/KHEP-E/M Pkg/2093 - Vol-I/ 22 Dated: 07/04/2021**
3. **NEEPCO email dated 20.01.2022 regarding Health assesment report of Spiral Casing Kopili Unit # I**

ENGINEERED SUCCESS

Dear Sir,

This is in reference to the repair of spiral casing of Unit#1. Repair works are in progress at site. During the weld repair work, high level of deterioration was observed in spiral case in section W17-W18. The deterioration level is such that a through hole of diameter approx 5mm has formed on the spiral surface as soon as the welding electrode touches it (please refer enclosed photo No : 1, 2 and 3). This issue was immediatelly notified to NEEPCO team at site on 24th Dec. 2022. We have kept the welding activity on hold at that particular area (near Stay vane no. 8 to 12) till further decision in this matter.

We would like to inform that as per the "Health assesment report of Spiral Casing of Unit-1" submitted by NEEPCO under reference 3 above, the thickness of various location of spiral casing were in range on 25mm in that particular section (please refer enclosed page from report for location W17-W18). However, actually it is observed very less (less than 3mm) as there is through hole formed during weld repair.

You are requested to review the issue and re-verify the thickness of spiral casing so that we can further discuss in this regards. Till then the repair work will be on hold in Unit#1. In addition please provide below documents/information for verification:

- Batch test certificates of original material
- Extent of NDT performed by original manufacturer or during subsequent modification/ repair carried out at site
- History of modifications carried out earlier on this spiral casing since installation, including the details of activities (material replacement/ weld metal build-up, Inspection reports including NDT reports, etc)

Thanking you and assuring you of our best attention and services always.

Yours faithfully,

Imran Shaikh
Project Manager

Imran N Shaikh
Project Manager

Sanjai Yadav
System Engineer

ENGINEERED SUCCESS

Ap13 - 6/10



Photo No : 1

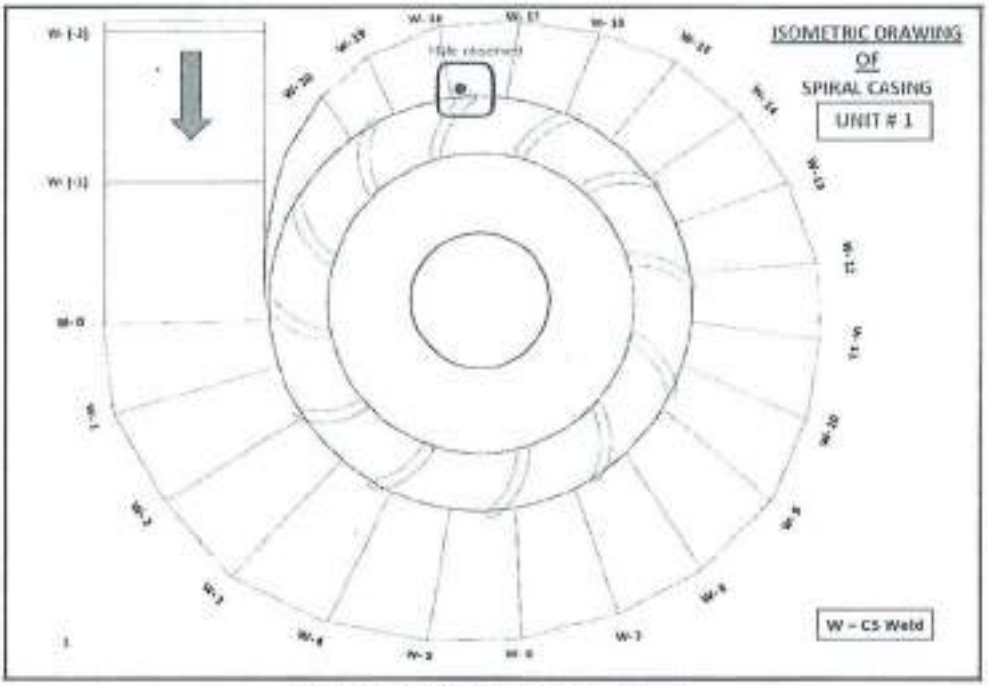


Photo No : 2



Photo No : 3

ENGINEERED SUCCESS



Location of hole on Spiral Casing

ENGINEERED SUCCESS

Ap13 - 7/10

Health assessment report of Spiral casing (W17-W18)

ISO 9001:2015	*Gulachi* Engineers Pvt. Ltd. 45/7 Asset Industrial Estate Nehar Nagar, Ghaziabad-201007 (U.P) India Email: info@gulachi.com, www.gulachi.com	Thickness/Corrosion Mapping Report (Spiral Casing U#1)	NEEPCO
Client: M/s NORTH EASTERN ELECTRIC POWER CORPORATION LTD.			Report No.
Site: -Kopili Hydro Electric Plant, Umrangso, Dima Hasao, Assam 788931			[illegible]
Plant: NEEPCO Stage-I (4X50MW)			
W. O. No. & Date:- NEEPCO/KHEP/C&P(E)W-217/2021-22/4411 & 18/01/2022			Duration Of Inspection
Work: Health assessment of Spiral Casing from inside of Unit# 1, 2, 3 and 4			29/09/2021 to 25/10/2021

JOB DESCRIPTION			
Equipment Name	Spiral Casing U#1	Wall Thickness (WT)	25MM
Insulation/ Coating Thickness (CT)	5MM	Material:	Carbon steel





Location	Mode	Probe	Status	Width	Height
(W-17 To W-18) U#1(ZONE-2)	Grid Mapping	PEC-089-G2-XXXX	Started	600mm	650mm

WALL THICKNESS VALUE COLOR PALETTE LEGEND

SCANNING IMAGE

	63.0	121.7	182.3	242.0	301.7	361.3	421.0	480.7	540.3
591.2	24.9	[illegible]	24.6	[illegible]	24.2	[illegible]	[illegible]	24.6	24.7
532.6	[illegible]	24.5	24.3	24.1	24.5	[illegible]	24.9	24.7	[illegible]
473.9	[illegible]	25.2	24.9	[illegible]	[illegible]	[illegible]	24.5	[illegible]	[illegible]
415.2	[illegible]	[illegible]	[illegible]	[illegible]	24.8	[illegible]	[illegible]	[illegible]	[illegible]
356.5	[illegible]	25.1	[illegible]	25.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
297.8	[illegible]	25.1	[illegible]	[illegible]	24.9	[illegible]	[illegible]	[illegible]	[illegible]
239.1	[illegible]	[illegible]	24.5	[illegible]	[illegible]	[illegible]	24.6	24.6	24.6
180.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	24.6	[illegible]	[illegible]
121.7	[illegible]	24.6	24.3	[illegible]	[illegible]	24.5	[illegible]	24.1	[illegible]
63.0	[illegible]	24.9	[illegible]	24.5	[illegible]	[illegible]	25.0	[illegible]	24.5

ENGINEERED SUCCESS

Ap-13 - 8/10

KOPILI HPS SITE VISIT REPORT OF J.S.HANSPAL

Subject: Refurbishment of spiral casing of Unit-1 of Kopili HPS (4x50mw), Umrangso, Assam

NEEPCO referred the issue of refurbishment of spiral casing of Unit-1 to undersigned over telephone. Undersigned was informed that due to acidic nature of water, the underwater parts of turbines are getting eroded. The plate thicknesses of all sections of spiral casing are getting reduced.

NEEPCO informed that the site is facing difficulties in refurbishment of spiral casing and requested undersigned to visit Kopili HPS.

NEEPCO issued a purchase order No. 3700005635 dated 18.5.2023 for consultancy services of undersigned.

Undersigned started from Bhopal (Hometown) on 21.5.2023 (Sunday) morning and reached Guwahati on the same evening.

Next day i.e on 22.5.2023 (Monday), Shri R.M.Sonowal, ED, NEEPCO and undersigned visited site and inspected Unit-1.

Site staff informed that weld deposition is being done on inside surface of spiral casing of Unit-1 to restore the original thicknesses of spiral casing segments. They expressed difficulty to perform the work inside smaller sections of spiral due to less accessability.

After thorough inspection undersigned informed NEEPCO to cut a window in the partition plate **(as per enclosed Sketch No.-1)**. Through the window weld deposition inside smaller sections can be carried out with less difficulty.

After completion of welding the window is to be closed. The material of partition plate is **IS 2708 Grade-1 or BS 3100 Grade A4 (BHEL Std AA1952)** and welding electrodes to be used for welding shall be **7018-1**. Pre-heat temperature is to maintained at 150 deg C. **TIG to be used for root runs with 100% DP test. Final welding to be 100% DP and UT tested.**

NEEPCO is also advised to check the distance i.e **Radius A + Radius B** at various sections of spiral casing **(as per enclosed Sketch No.-2)**.

From Kopili HPS, we returned back to Guwahati on 22.5.2023 night.

On 23.5.2023 (Tuesday) undersigned had meeting with ED, NEEPCO in latter's office in Guwahati.

Undersigned returned back to Bhopal on 24-5-2023 (Wenesday) night.

NEEPCO has shared the Ultrasonic Thickness Measurement report of spiral casing of Unit-1 **(Annexed with this report)**. Undersigned's observations are as follows

Cont'd

1. All holes (if required to be enlarged with grinding) developed due to corrosion are to be filled with weld deposit.

2. All cracks developed are to be removed by grinding, checked by DP test and filled with weld deposit.

3. Pot holes developed are to be enlarged by grinding, DP tested and filled with weld deposit.

4. All circular cavities developed are to be removed by grinding, checked by DP test and filled with weld deposit.

5. Deteriorated surfaces of spiral casing to be cleaned with grinding followed by weld deposition.

   NEEPCO is advised to improve the quality of weld deposition. Final grinding to be very smooth to avoid undulations in the water path.

It is advised that the minimum thickness at any local point in any of the spiral segments is maintained minimum at 85% of the thicknesses shown in the BHEL drawing.

Date: 25.05.2023

J.S.Hanspal

Retired AGM, BHEL, Bhopal

Ap13 - 9/10

NORTH EASTERN ELECTRIC POWER CORPORATION LTD.

(A Govt. of India Enterprise)

CORPORATE IDENTITY NUMBER (CIN): U40101ML1976GOI001656
OFFICE OF THE EXECUTIVE DIRECTOR (DESIGN AND ENGINEERING),
2nd Floor, NEEPCO Bhawan, R.G. Baruah Road, Sundarpur, Guwahati-781005,
Tel. No. 0361-2207284, Fax No. 0361-2203187

No. NEEPCO/D&E/GHY/T-53/2023-24/ 1776

Dated. 18/07/2023

To,

The Head of Plant,
Kopili HPS,
NEEPCO Ltd., N.C Hills
Umrongso, Assam

Sub: **Record Note of Discussion held in Hybrid Mode (Online and Offline) at Guwahati on 17.07.2023 to deliberate on recommendations of M/s Andritz Hydro in regards to Repair/Refurbishment of Spiral Case of Unit # 1 of Kopili Hydro Power Station (4 x 50 MW), Umrongso, Assam.**

While inviting a reference to the above, please find enclosed herewith a copy of the Record note of Discussion (RND), Dated 18/07/2023 on the subject above for your information and necessary action. M/s Andritz Hydro may be asked to proceed with the refurbishment of the Spiral Casing of Unit # 1 as per Option 2, Opinion of Expert Consultant as recorded in Para 2 under Sl. No. 1 and the decision under Sl. No. 2 of the RND, Dated 18.07.2023 may be communicated.

Thanking you.

Encl: As stated above.

18/7/2023

Executive Director (D&E),
NEEPCO Ltd. Guwahati-05

Memo No. NEEPCO/D&E/GHY/T-53/2023-24/ 1776-1777

Dated: 18/07/2023

Copy to :-

1. The Director (Tech.), NEEPCO Ltd., Shillong with a copy of the Record note of Discussion for kind information please.
2. The Executive Director (O&M), NEEPCO Ltd., Guwahati with a copy of the Record note of Discussion for kind information please.
3. Shri. Ashok Sharma, Expert Consultant, D-104, Nandan Van, Vesu, Surat 395007, Gujrat with a copy of the Record note of Discussion for kind information please.
4. Shri J. S. Hanspal, Expert Consultant, House No. 214, Bhopal, Madhya Pradesh, 462024 with a copy of the Record note of Discussion for kind information please.

18/7/2023

Executive Director (D&E),
NEEPCO Ltd. Guwahati-05

Record Note of Discussion held in Hybrid Mode (Online and Offline) at Guwahati on 17.07.2023 to deliberate on recommendations of M/s Andritz Hydro in regards to Repair/Refurbishment of Spiral Case of Unit # 1 of Kopili Hydro Power Station (4 x 50 MW), Umrongso, Assam

The Director [Tech.], NEEPCO chaired a meeting to deliberate on the "Report on Unit # 1 Spiral casing present condition and recommendation for its Replacement/Repair" submitted by M/s Andritz Hydro Pvt. Ltd. The meeting was attended by the ED(D&E), ED (O&M) & the HoP, Kopili HPS along with other officials from D&E, O&M & Project. The list of participant is enclosed as **Annexure-I**.

Mr. Ashok Sharma and Mr. J. S. Hanspal, the Expert Consultants also participated in the deliberations. The recommendations of M/s Andritz Hydro were deliberated. The deliberations and the decision taken in the meeting are recorded below:

1. The Option No.-1 (Replacement of the Spiral Case) as recommended by M/s Andritz Hydro is not a practical option in case of a power station under operation. It is understood that, replacement of the spiral case shall necessitates dismantling of entire barrel concrete which may jeopardize structural safety of the Power House. In this option, dismantling and reconstruction of entire unit barrels may be called for. During dismantling, it may not be possible to retain all the primary reinforcement. Further, in subsequent reconstruction it may not be possible to reinstate damaged rebars without further breaking of the 1st Stage concrete. In this process the work may get further complicated leading to difficulty in ensuring integrity of the structure as a whole. As such, it would be prudent to forgo the option No.-1 recommended by M/s Andritz Hydro.

   Duly considering techno-commercial aspects, the Option No.-2 comprising of weld repair and partial plate replacements of spiral case as recommended by M/s Andritz Hydro has been found to be more prudent solution considering time and site constraints. Hence, the option No. -2 shall be adopted for refurbishment of the Spiral Case No. -1. The expert consultant suggested to go for cutting and replacement of the damaged spiral sections instead of putting up of support plates proposed by M/s Andritz Hydro. They further, advised that in the location where removal of corroded section is not possible the thickness may be restored by weld deposit. The suggestion of the consultant has been agreed.

Record Note of Discussion held in Hybrid Mode (Online and Offline) at Guwahati on 17.07.2023 to deliberate on recommendations of M/s Andritz Hydro in regards to Repair/Refurbishment of Spiral Case of Unit # 1 of Kopili Hydro Power Station (4 x 50 MW), Umrongso, Assam

2. It was decided that in-situ hydro testing of repaired Spiral case shall be conducted to validate repair process. Necessary action for the same to be taken in expeditious manner.

3. The timeline proposed for option-2 by M/s Andritz Hydro may be reworked to squeeze the schedule.

4. As decided by D&E, the Hardness testing and Core Recovery from the area where weld repair was done on previous instances shall continue and to be completed at the earliest.

The meeting ended with the vote of thanks from the chair.

Record Note of Discussion held in Hybrid Mode (Online and Offline) at Guwahati on 18.07.2023 to deliberate on recommendations of M/s Andritz Hydro in regards to Repair/Refurbishment of Spiral Case of Unit # 1 of Kopili Hydro Power Station (4 x 50 MW), Umrongso, Assam

List of Participants:

Sl No.	Name & Designation	Signature
1.	Shri R. Sarma Director (Technical)	In the chair
2.	Shri Ashok Sharma Expert Consultant	Participated online over MS Team
3.	Shri J. S. Hanspal Expert Consultant	
4.	Shri R. M. Sonowal Executive Director (D&E)	
5.	Smt. Debjani Dey Executive Director (O&M)	
6.	Shri D. K. Saikia Head of Plant, KHPS	Participated online from Kopili
7.	Shri A. J. Bordoloi General Manager (E/M), O/o: The HoP, KHPS	
8.	Shri Joy Pal Roy General Manager (E/M), O/o: ED (O&M)	Participated online from Shillong
9.	Shri B. Sen General Manager (E/M), O/o: ED (O&M)	
10.	Shri S. K. Jha Dy. General Manager (C), O/o the ED (D&E)	

RECONSTRUCTION, RENOVATION & MODERNISATION OF KOPILI P-5 (4X50 MW), KHPS
Revised Cost Estimate at MAY-2024 Price Level

Annexure-A

ABSTRACT OF COST

Rs in lakhs

Sl. No.	Item Code	Item Description	CEA vetted Cost at Jan-2021 PL	Revised Cost Estimate at MAY-2024 PL			Variation	Reasons of variation					
				Completed as on MAY'24	Committed Liabilities/ Balance	Total		Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Addition /Deletion	Other sources (specify)	Statutory Levies
A		CIVIL AND HM WORKS											
I		DIRECT CHARGES											
i		CIVIL											
	A	Preliminary & Pre-Operative Expenses	788.17	534.30	-	534.30	-253.87			-223.82			-40.25
	B	Cost of Land	-	-	-	-	-						
	C	Civil Works	265.00	202.53	25.00	227.47	-37.53	-	-	34.94	-63.00	-	-8.75
	J	Power Plant Civil Works	34,425.56	40,980.97	1,291.22	48,271.78	13,845.22	5,934.36	-	667.03	5,108.22		2,135.62
	K	Buildings	318.06	132.18	-	132.18	-185.88			-88.20			-17.68
	M	Plantation	80.00	-	-	-	-80.00	-	-	-	-80.00	-	-
	O	Miscellaneous	600.00	4,416.34	89.59	4,510.01	3,910.01			3,319.33	-	-	697.48
	P	Maintenance during Construction	349.60	83.13	1.58	84.11	-265.49	-	-	-224.89	-	-	-40.60
	Q	Special Tools & Plants	100.00	22.81	-	22.81	-77.39			-65.58	-	-	-11.80
	R	Communication	2,893.66	1,657.00	70.00	1,727.20	-1,166.46	-	-	-551.02	-447.58	-	-176.26
	X	Environment and Ecology	50.00	-	-	-	-50.00	-	-	-	-50.00	-	-
	Y	Losses on stock	37.40	-	-	-	-37.40			-37.40			
		TOTAL I-WORKS	39,908.45	54,028.76	1,588.71	55,617.47	15,708.02	5,934.36	-	2,909.49	4,537.33	-	2,427.84
ii		Establishment Charges	3,152.64	6,344.84	-	6,344.84	3,192.17			3,192.17			
iii		Tools & Plants	-	-	-	-	-						
iv		Suspense	-	-	-	-	-						
v		Receipts and Recoveries (-)	-	-	-	-	-						
		TOTAL DIRECT CHARGES	43,161.13	60,373.60	1,588.71	61,962.31	18,801.19	5,934.36	-	5,101.66	4,537.33	-	2,427.84
2		INDIRECT CHARGES					-						
i		Capitalisation of Assessment of Land revenue	-	-	-	-	-						
ii		Audit & Accounts etc.	199.54		-	-	-199.54			-199.54			
		TOTAL INDIRECT CHARGES	199.54	-	-	-	-199.54	-	-	-199.54	-	-	-
3		A. TOTAL CIVIL & HM WORKS (1+2)	43,360.67	60,373.60	1,588.71	61,962.31	18,601.65	5,934.36	-	5,163.13	4,537.33	-	2,427.84
III		Electro-Mechanical Works											
i		Electro-Mechanical Works	36,923.53	44,273.33	2,700.15	46,973.48	10,049.96	2,353.73	340.00	2,903.20	2,751.10	-	1556.92
ii		Audit & Accounts charges	88.31		-	-	-88.31				-88.31		
iii		Establishment Charges of EM Works	2,099.34	5,148.03	-	5,148.03	3,048.69			3,048.69			
		B. Total Electro-Mechanical Works	39,111.17	49,421.36	2,700.15	52,121.51	13,010.34	2,353.73	340.00	5,110.89	2,662.79	-	1,556.92
C		Insurance Cost against Residual Assets of the Plant	-	1,547.04	-	1,547.04	1,547.04				1,547.04		
D		Hard Cost (A+B+C)	82,471.84	1,11,342.00	4,288.86	1,15,630.86	33,219.02	8,288.09	340.00	10,073.01	8,727.16	-	3,984.76
E		IDC & FC	5,397.00	7,973.00	-	7,973.00	2,576.00			2,576.00			
F		Total Project Cost(D+E)	87,868.84	1,19,315.00	4,288.86	1,23,603.86	35,795.02	8,288.09	340.00	13,449.01	8,727.16	-	3,984.76
G		(-) Less Receipt:											
		a) Sale from Infirm Power	-	459.64	-	459.64	459.64					-459.64	
		b) Sale of Scrap	-	2,973.00	-	2,973.00	-2,973.00					-2,973.00	
H		Net Total (F-G)	87,868.84	1,15,876.36	4,288.86	1,20,165.21	32,296.38	8,288.09	340.00	13,449.01	8,727.16	-3,433.64	3,984.76

Note: Total Project cost is Rs 123603.86 Lakhs. But, on substraction of Infirm Power and Scrap value, the project cost comes at Rs 120165.21 lakhs as mentioned above.

RECONSTRUCTION, RENOVATION & MODERNISATION OF KOPILI P.S (4X50 MW), KHPS
Revised Cost Estimate at May-2024 Price Level

Annexure - I

ABSTRACT OF COST CIVIL WORKS

Rs in lakhs

SL No.	Item Code	Item Description	CEA vetted Cost at Jan-2021 PL	Revised Cost Estimate at MAY 2024 PL			Variation	Reasons of variation					
				Completed as on MAY'24 PL	Committed Liabilities/ Balance	Total		Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Addition /Deletion	Other causes (specify)	Statutory Levies
A		CIVIL AND HM WORKS											
1		DIRECT CHARGES											
i		I-WORKS											
	A	Preliminary & Pre-Operative Expenses	736.17	534.30	-	534.30	-263.87			-223.62			-40.25
	B	Cost of Land	-	-	-	-	-						
	C	Civil Works	285.00	202.43	25.03	227.47	-57.53	-	-	34.54	-83.30	-	-8.78
	J	Power Plant Civil Works	34,426.56	46,980.57	1,391.22	48,371.78	13,945.22	5,934.36	-	687.03	5,198.22		2,125.62
	K	Buildings	248.06	132.18	-	132.18	-115.88			-98.20			-17.68
	M	Plantation	80.00	-	-	-	-80.00				-80.00		
	O	Miscellaneous	600.00	4,416.94	99.88	4,516.81	3,916.81			3,319.33	-	-	597.48
	P	Maintenance during Construction	349.60	82.13	1.98	84.11	-265.49	-	-	-224.99	-	-	-40.50
	Q	Special Tools & Plants	100.00	22.61	-	22.61	-77.39			-65.56	-	-	-11.80
	R	Communication	2,883.66	1,657.60	70.50	1,728.20	-1,155.46	-	-	-531.82	-447.58	-	-176.26
	X	Environment and Ecology	50.00	-	-	-	-50.00	-	-	-	-50.00	-	-
	Y	Losses on stock	87.40	-	-	-	-87.40			-87.40			
		TOTAL I-WORKS	39,908.45	54,028.76	1,588.71	55,617.47	15,709.03	5,934.36	-	2,809.49	4,537.33	-	2,427.84
ii		Establishment Charges @ 8% of I-Works	3,192.68	6,344.84	-	6,344.84	3,152.16			3,152.16			
iii		Tools & Plants	-	-	-	-	-						
iv		Suspense	-	-	-	-	-						
v		Receipts and Recoveries (-)	-	-	-	-	-						
		TOTAL DIRECT CHARGES	43,101.12	60,373.60	1,588.71	61,962.31	18,861.19	5,934.36	-	5,961.66	4,537.33	-	2,427.84
2		INDIRECT CHARGES					-						
i		Capitalisation of Abatement of Land revenue	-	-	-	-	-						
ii		Audit & Accounts etc. (0.5% of I-Works)	199.54	-	-	-	-199.54				-199.54		
		TOTAL INDIRECT CHARGES	199.54	-	-	-	-199.54	-	-	-	-199.54		-
3		*A. TOTAL CIVIL AND HM WORKS (1 + 2)*	43,300.66	60,373.60	1,588.71	61,962.31	18,661.65	5,934.36	-	5,961.66	4,337.79	-	2,427.84

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
(Abstract of Revised Cost Estimates of Electro Mechanical Works)

Annexure-II

Rs. In Lakhs

ABSTRACT OF COST ELECTRO-MECHANICAL WORKS

		As approved by CEA at Jan'21 PL	Revised Cost Estimate at May 2024 PL				Variation	Reasons of variation					
			Completed as on May'24	Committed Liabilities/ Balance	Escalated balance	Total		Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Addition /Deletion	Other causes (specify)	Statutory Levies
1	Preliminary - Annex-S(1)	282.23	1,351.04	32.11	-	1,383.15	1,100.92	49.16	-	-	1,051.77		
	GST on Preliminary	50.80	245.21			245.21	196.41						196.41
	Subtotal (Preliminary)	333.03	1,600.26	32.11	-	1,632.37	1,299.34	49.16	-	-	1,051.77	-	196.41
2	Generating Plant and Auxiliaries												
	a) Generating Units and Associated Accessories - Annex - S(2)	20,216.41	19,151.77	1,668.72	-	20,820.49	600.08	1,126.07	-	326.41	-1,022.39	-	
	b) Auxiliary electrical equipment for power station -Annex-S(3)	3,791.67	5,221.23	268.90	-	5,581.22	1,789.55	967.16	340.00	440.42	41.96	-	
	c) Auxiliary Mechanical equipment and services for power station - Annex-S(4)	1,600.81	2,257.93	5.55	-	2,263.47	662.66	-	-	821.83	-155.17	-	
	d) Excise / Customs Duty (as applicable) on 2(a), (b) & (c)					-							
	e) GST as applicable on 2(a), (b) & (c)	4,626.97	5,153.75			5,153.75	524.78						524.78
	f) Transportation, handling and Insurance charges	808.21	625.83			625.83	-182.38			-182.38		-	
	GST applicable on Transportation, handling and Insurance Charges	145.48	110.41			110.41	-35.07						-35.07
	g) Erection and commissioning charges	1,997.26	5,272.16	660.54		5,866.70	3,868.45	216.74			3,651.70		
	g(1) Insurance on Erection and Commissioning		152.86	12.55		165.41	165.41				165.41		
	GST applicable on Erection & Commissioning Charges	359.61	1,070.78			1,070.78	711.28						711.28
	Sub-Total (Generating Plant and Equipment)	33,656.31	39,116.71	2,541.36	-	41,658.06	8,001.75	2,318.97	340.00	1,478.28	2,677.90	-	1,291.90
3	Switchyard and Pothead Yard Equipment & Services												
	a) Substation equipment, auxiliary equipment and service of Switchyard - Annex-S(5)	1,012.07	1,334.65	113.44	-	1,448.43	437.42	-	-	435.99	1.43	-	
	b) Excise / Customs Duty (as applicable) on 3 (a)					-							
	c) GST (as applicable on 3(a) & (b)	182.17	260.91			260.91	78.74						78.74
	d) Transportation,handling and insurance charges	60.72	116.71			116.71	55.99			55.99		-	
	GST on Transportation, handling and Insurance charges	10.93	20.92			20.92	9.99						9.99
	e) Erection & Commissioning Charges					-							-
	e.1) Erection & Commissioning Charges	61.70	141.70			141.70	80.00			80.00			
	GST applicable on Erection & Commissioning Charges	11.11	25.61			25.61	14.49						14.49
	Sub-Total (Substation Equipment, Auxiliary Equipment and Service of Switch Yard)	1,338.70	1,899.79	113.44	-	2,013.23	676.53	-	-	571.97	1.43	-	103.13
4	Contingencies @ 1% of items 2 & 3	349.89	119.37	0.74		120.11	-229.78			-229.78			
5	Tools & Plants @ 0.5% of item 2 &3	174.95	103.44	10.51	-	113.95	-61.00			-61.00			
6	Sub-Total (Item 1 to 5)	35,846.86	42,839.56	2,700.15	-	45,539.72	9,692.84	2,368.13	340.00	1,758.47	3,731.10	-	1,502.53
7	Establishment (as per Para 16.5 of Chapter XVI)	2,099.34	5,148.03	-		5,148.03	3,048.69			3,048.69			
8	Sub Total (Item 6 & 7)	37,946.22	47,987.59	2,700.15	-	50,687.75	12,741.53	2,368.13	340.00	4,808.16	3,731.10	-	1,502.53
9	Audit and account Charges (as per para 16.9.2 of Chapter XVI)	88.31	-	-	-	-	-88.31				-88.31		
11	TOTAL (8 + 9)	38,034.53	47,987.59	2,700.15	-	50,687.75	12,653.22	2,368.13	340.00	4,808.16	3,642.79	-	1,502.53
12	Dismantling Charges	912.41	1,215.13	-	-	1,215.13	302.72			302.72			
13	GST on Dismantling Charges	164.23	318.63			318.63	54.39						54.39
14	Subtotal (Dismantling Charges)	1076.64	1433.76	0.00	0.00	1433.76	357.12	0.00	0.00	302.72	0.00	0.00	54.39
15	GRAND TOTAL (11 + 14)	39,111.17	49,421.36	2,700.15	-	52,121.51	13,010.34	2,368.13	340.00	5,110.88	3,642.79	0.00	1,556.92

C4

RECONSTRUCTION, RR&M OF KOPILI PS 200 MW
REVISED COST ESTIMATE

A - PRELIMINARY

Sl. No.	Description of items	Unit	Sanctioned Cost			As per Revised Estimate								Variation (with respect to sanctioned cost)			
			Qty	Rate	Amount (Rs. In Lakhs)	Completed work up to May-2024			Committed Liabilities /Balance wok			Total		Qty	Amount (Rs. In Lakhs)	Positive (+)	Negative (-)
						Qty	Rate	Amount (Rs. In Lakhs)	Qty	Rate	Amount (Rs. In Lakhs)	Qty	Amount (Rs. In Lakhs)				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Expenditure incurred by NEEPCO for rescue operation(A-Pre-Annex-A3)	LS			50.00			435.10			0		435.10				
2	Topographical Survey (A-pre-Annex-A1)	LS			20.00			7.63			0		7.63				
3	Geophysical Survey (A-pre-Annex-A1)	LS			26.43			2.36			0		2.36				
4	Investigation for concrete (A-pre-Annex-A1)	LS			20.00			30.94			0		30.94				
5	Preparation and printing of Project Reports	LS			5.00			0.00			-		0.00				
6	Vehicle for inspecting Officers for site investigation	LS			20.00			0.00			0		0.00				
7	Building Information and modelling system	LS			80.00			0.00			0		0.00				
8	Consultancy Charges(A-pre-Annex-A2)	LS			1,000.00			58.27			0		58.27				
	Total				1,221.43			534.30			-		534.30		-293.87	-	-

CEA approved cost is Rs 798.17 Lacs

798.17	534.30	-	534.30	-263.87
676.42	452.80		452.80	-223.62
121.75	81.50		81.50	-40.25
798.17	534.30		534.30	-263.87

C5

RECONSTRUCTION, RR&M OF KOPILI PS 200 MW
REVISED COST ESTIMATE

A - PRELIMINARY

Sl. No.	Description of Items	Unit	Reasons of Variation						
			Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Change in Design	Additional requirement / New Item /Addition	Other causes (specify)	Statutory Levies
1	2	3	19	20	21	22	23	24	25
1	Expenditure incurred by NEEPCO for rescue operation(A-Pre-Annex-A3)	LS							
2	Topographical Survey (A-pre-Annex-A1)	LS							
3	Geophysical Survey (A-pre-Annex-A1)	LS							
4	Investigation for concrete (A-pre-Annex-A1)	LS							
5	Preparation and printing of Project Reports	LS							
6	Vehicle for inspecting Officers for site investigation	LS							
7	Building information and modelling system	LS							
8	Consultancy Charges(A-pre-Annex-A2)	LS							
Total			0.00	0.00	-223.62	0.00	0.00	0.00	-40.25

CEA approved cost is Rs 798.17 Lacs

-223.62 -40.25

C6

A- Preliminary_Annex-A1

Sl/ No	Ref No.	Description of work	Name of Agency	W.O no.	Amount without GST	Amount With GST
Inspection for concrete						
1	WO_ 3666	Structural Health assessment of various concrete structures of Kopili HEP (275MW) by JDAVPUR UNIVERSITY.	Dr. Partha Ghosh, Professor, Jadavpur University, Kolkata	NEEPCO/KHEP/C&P (C)/ F-05/2020-21/3666 dtd. 16.12.2020	25,30,000.00	29,85,400.00
2	16	Work order for " Concrete Mix Design and Other material Testing pertaining to Civil works of R R & M works of 4X50 MW Kopili P.S. KHEP.	Assam Engineering College, Guwahati	NEEPCO/KHEP/ C&P(C)/ F-05/2021-22/2270 Dtd.28-08-2021	92,450.00	1,09,091.00
Total						30,94,491.00
Geophysical Survey						
1	19	Geotechnical Investigation for Line Tower for Unit # 1 and Unit # 2, Kopili, Kopili Power Station (4X50 MW)	M/s Experto Geotechnical Consultants and Recharch Pvt. Ltd.	NEEPCO/KHEP/ C&P(C)/ F-05/2021-22/1182 Dtd. 16-06-2021	2,00,000.00	2,36,000.00
Total						2,36,000.00
Topographical Survey						
1	WO_ 4624	Tropographical Strip Survey of Umrong Penstock and its surrounding area upto Kopili Power House at KHEP	M/s Precision Survey Consultancy, Howrah, West Bengal	NEEPCO/KHEP/C&P(C)/F-05/2019-2020 / 4624 Dtd.30.01.2020	3,57,555.08	4,21,915.00
2	17	Survey of Kopili Power Station.....at KHEP, NEEPCO Ltd., Umrongso, Dima Hasao, Assam	M/s Precision Survey Consultancy	NEEPCO/KHPS/C&P (C) /F-05/2020-21/3326 Date 17.11.2020	2,88,960.00	3,40,973.00
Total						7,62,888.00

A- Preliminary Annex-A2

Sl No.	Ref. No.	Name of Works	W.O.No	Name of Contractor/Consultant	Completed up to MAY 2024		Balance
					Amount (Rs) Excl. GST	Amount (Rs) Incl. GST (@18%)	Amount (Rs) Incl. GST (@18%)
1	18	Valuation of scraps pertaing to Kopili Hydro Electric Project, Dima Hasao, Assam	NEEPCO/KHPS/C&P (C) /F-05/2020-21/368 Date 26.04.2021	Sri Ramen Dutta	75,000.00	88,500.00	
2	159	Engagement as Independent Engineer (IE) for Disposal of Disputes against Civil Works pertaning to Restoration of Kopili Hydro Station for the period of 4 months w.e.f. 01.07.2022	NEEPCO/KHPS/HOP/T-46/35/KR/2023-24/315 Dtd.22.11.2022	Muhar Moni	2,31,364.41	2,73,010.00	
3	160	Engagement as Independent Engineer (IE) for Disposal of Disputes against Civil Works pertaning to Restoration of Kopili Hydro Station for the period w.e.f. 01.11.2022 to 28.02.2023	NEEPCO/KHPS/HOP/T-46/35/KR/2023-24/315 Dtd.22.11.2022	Muhar Moni	8,58,172.03	10,12,643.00	
4	161	Engagement as Independent Engineer (IE) for Disposal of Disputes against Civil Works and Hydro Mechanical Works pertaning to Restoration of Kopili Hydro Station for the period w.e.f. 01.03.2023 to 31.05.2023	NEEPCO/KHPS/HOP/T-46/35/KR/2023-24/490 Dtd.24/03/2023	Muhar Moni	4,32,489.83	5,10,338.00	
5	162	Engagement as Independent Engineer (IE) for Disposal of Disputes against Civil Works and Hydro Mechanical Works pertaning to Restoration of Kopili Hydro Station for the period w.e.f. 01/06/2023 to 31.08.2023	NEEPCO/KHPS/HOP/T-46/35/KR/2023-24/107 Dtd. 07/07/2023	Muhar Moni	1,37,093.22	1,61,770.00	
6	WO_107	Engagement as Independent Engineer(IE) for disposal of disputes against Hydro Mechanical works pertaining to Restoration of Kopili Hydro Power Station	NEEPCO/KHPS/HOP/T-46/35/KR/2023-24/107 dtd. 07.07.2023	Shri Muhar Mani	3,09,392.37	₹ 3,65,083.00	
7	WO_276	Deployment of Welding and NDT Inspector for Quality Audit against the work of Design, Fabrication, Supply, Erection, Testing and Commissioning of Penstock and Steel In-liner in Umrangso System of Kopili Hydro Electric Project(275 MW), Assam	NEEPCO/KHPS/C&P(C)/F-07/2022-23/276 dtd. 27.04.22	M/s Gulachi Engineers Pvt Ltd	12,19,695.76	₹ 14,39,241.00	
8	WI_1194	Engagement of expert consultant for restoration of Kopili HPS	NEEPCO/GHY/D&E/T-01/2019-20/1194 dated 07-01-2021	Shri Ashok Sharma	4,82,203.39	₹ 5,69,000.00	
9	WO_2047	Penstock Failure Analysis of Kopili HPS, Assam	W.O No. NEEPCO/KHEP/C&P(C)/F-05/2021-22/99 dtd. 13.04.2021, Amendment W.O No. NEEPCO/KHEP/C&P(C)/F-05/2021-22/253 dtd. 20.04.2021, Revised W.O No. NEEPCO/KHEP/C&P(C)/F-05/2021-22/2047 dtd. 13.08.2021	M/s AVIS	11,92,351.69	₹ 14,06,975.00	
			Total			58,26,560.00	

C8

A- Pre-Annex-A3

Sl No.	Ref. No.	Name of Work	W.O.No	Name of Contractor	Completed up to MAY 2021		Balance
					Amount (Rs) Excl. GST	Amount (Rs) Incl. GST (@18%)	Amount (Rs) excl. GST (@18%)
1	81	Diving service for temporary gate sealing at Umrong Intake Gate of Kopili Hydro Electric Plant, Umrongso.....	NEEPCO/KHEP/C&P (C) /F-45/2019-20/3632-36 Date 17.04.2020	M/s Ocean Star Diving Services	6,10,168.00	4,69,659.00	
2	84	Clearance of Slush/debris deposited inside Kopili Power House Building	NEEPCO/KHPS/C&P (C) /F-45/2018-20/4024 Date 21.10.2019	Sri Daulat Prasad Agarwala	91,50,950.00	1,07,97,000.00	
3	85	Supply of 10 Nos.(ten)nos. of unskilled labour for miscellaneous activities at Kopili Power Station for the period 22.10.2020 to 31.03.2021, KHEP.	NEEPCO/KHEP/C&P /F-45/2021-2022/848 Date 05.04.2021	Sri Ramdeg Rongki	5,78,450.00	6,80,211.00	
4	86	Supply of unskilled labour for miscellaneous activities at Kopili Power Station. KHEP (10 nos. of labour for 30 days)	NEEPCO/KHEP/C&P /F-45/2020-2021/0941 Date 02.01.2021	Sri Ramdeg Rongki	1,57,737.00	1,86,119.00	
5	87	Supply of 350(Three Hundred)Nos. of unskilled labour for miscellaneous activities at Kopili Power Station for the period 16.09.2020 to 31.10.2020, KHEP, Umrongso Dima Hasao, Assam.	NEEPCO/KHEP/C&P /F-45/2020-2021/4185 Date 19.01.2021	Sri Ramdeg Rongki	1,59,306.00	1,87,621.00	
6	116	Supply of labour (unskilled) for preparation of barrier by sand bags at Intake of Umrong W.C.S of Kopili Power Plant,KHEP,Umrongso.	NEEPCO/KHEP/C&P /F-45/2020-2021/631 Date 12.06.2020	Sri Ramdeg Rongki	66,675.00	1,86,686.00	
7	120	Supply of Labours for engagement of un skilled labour in different works related to the rescue & restoration works at Kopili Power Station,KHEP (w.e.f 07.10.2019 to 31.10.2019)	NEEPCO/KHEP/C&P /F-45/2019-20/54552 Date 23.01.2020	Sri Pramila Kumar Dilimgia	1,58,795.00	1,87,378.10	
8	124	Supply order for engagement of 01 (one) no. of semi-skilled operator for operation of departmental mini Pocline in restoration work at Kopili Power Station KHEP, Umrongso	NEEPCO/KHEP/C&P /F-45/2019-20/60657 Date 02.03.2020	Sri Khagendra Hojai	74,312.00	87,668.16	
9	127	Labour for rescue operation at Kopili Power House, during the period 17.10.2019 to 22.10.2019	NEEPCO/KHEP/C&P /F-45/2019-20/54729 Date 06.02.2020	Sri Khagendra Hojai	2,34,860.00	2,77,052.80	
10	130	Supply for labours for engagement of Un skilled labour in different works realted to the restoration of Kopili Power Station,KHEP, w.e.f 08.11.2019 to 18.01.2020	NEEPCO/KHEP/C&P /F-45/2019-20/60966 Date 28.02.2020	Sri Pramila Kumar Dilimgia	2,33,572.00	2,75,614.96	
11	133	Engagement of unskilled labour in different works realted to restoration of Kopili Power Station,KHEP Umrongso (from 19.01.2020 to 31.03.2020)	NEEPCO/KHEP/C&P /F-45/2019-20/1040 Date 18.05.2020	Sri Pramila Kumar Dilimgia	1,47,811.00	1,74,417.00	
12	138	Labours engaged for Preliminary cum ancillary rescue works and rescue & restoration works at Kopili Power Station, during the period 08th-16th Oct'2019 & 17th-24th Oct'2019 respectively.	NEEPCO/KHEP/C&P /F-45/2019-20/60658 Date 28.02.2020	Sri Nibin Hojai	13,27,706.00	15,66,893.00	
13	139	Supply of Labours for engagement in rescue & restoration works at Kopili Power Station,KHEP w.e.f 17.10.2019 to 23.10.2019	NEEPCO/KHEP/C&P /F-45/2019-20/60685 Date 03.03.2020	Sri Pramila Kumar Dilimgia	63,350.00	74,754.00	
14	141	Engagement of 01(one) no. of skilled operator for operation of diesel-mobile Mini Pocline in restoration work of Kopili Power Station,KHEP,Umrongso (for a period of three months from 01.03.2020 to 30.05.2020	NEEPCO/KHEP/C&P /F-45/2020-21/1481 Date 03.06.2020	Sri Khagendra Hojai	64,221.00	75,780.78	
15	148	Regularization Order for Supply of various sizes of Gilgarths, GI Sheets, and Channels for the sheeds during the rescue/restoration operation after the recent landslides occurred at Kopili Power Station,Kopili Hydro Electric Plant, NEEPCO Ltd,Umrongso,Dima Hasao,Assam-788931.	NEEPCO/KHEP/C&P /F-45/2019-20/62809 Date 25.10.2019	Sri Daulat Prasad Agarwala	52,999.26	62,481.00	
16	155	Supply of labour for rescue operation in Kopili Power station.	NEEPCO/KHEP/C&P /F-45/2019-20/63484-88 Date 27.11.2019	Sri Alkantara Tissa	84,460.00	99,680.00	
17	79	Supply of 1 (one) No. of Dumper and 2(Two) of tractor for removal of slush/debris from inside Kopili Power House Building, KHEP, Umrongso (from 15.11.2019 to 18.12.2019)	NEEPCO/KHPS/C&P (C) /F-67/2021-22/1123 Date 10.06.2021	Sri Daulat Prasad Agarwala	5,03,806.00	5,94,246.00	
18	37	Supply order for 1 (one) No. Bosch make high pressure cleaner model: GHP 5-65 in Kopili Hydro Electric Project, Umrongso, Dima Hasao, Assam.	NEEPCO/KHPS/C&P (C) /F-67/2020-21/1108 Date 10.06.2020	M/s Industrial Trade & Agencies	51,471.00	60,736.00	
19	48	Supply of 2(Two) Nos. of Tractor with hydraulic operated trailer on daily basis for Restoration work of Kopili Power Plant, KHEP, Umrongso (from 01.03.2021 to 31.03.2021)	NEEPCO/KHEP/C&P (C) /F-67/2021-22/508 Date 30.04.2021	Sri Khagendra Hojai	1,17,800.00	1,39,004.00	
20	78	Supply and deployment of 2 (Three) Nos. of Tractor with hydraulic trailers and 1 (One) JCB at Kopili Power Station to backfill the desilted slope at Anchor Block 6 (for the period from 18.04.2022 to 30.06.2022)	NEEPCO/KHPS/C&P (C) /F-67/2022-23/1458 Date 12.07.2022	Sri Ranjit Tamang	5,26,506.00	6,21,276.00	
21	81	Supply of 1 (one) no. Dumper and 2 (two) nos. of tractor for removal of slush/debris from inside Kopili Power House Building, KHEP, Umrongso (from 15.11.2019 to 30.12.2019)	NEEPCO/KHEP/C&P /F-67/2021-22/1123 Date 10.06.2021	Sri Daulat Prasad Agarwala	5,03,806.00	5,94,246.00	
22	91	Supply of 4 (four) nos. of Tractor on daily hire rent basis for carriage of slush/muck from dumping yard and filling in AB-6 & behind RCC wall at back side of Kopili Power Station, KHEP, Umrongso (for 75 days, for the period from 16.12.2020 to 28.02.2021)	NEEPCO/KHEP/C&P /F-67/2021-22/2126 Date 13.05.2021	Sri Khagendra Hojai	5,19,060.00	6,12,906.00	
23	99	Supply of 2 (two) nos. of Tractor on daily hire basis for carriage of slush/muck from dumping yard and filling in AB-6 & behind RCC wall at back side of Kopili Power Station, KHEP, Umrongso (from 01.04.2020 to 30.06.2021)	NEEPCO/KHEP/C&P /F-67/2021-22/2189 Date 26.07.2021	Sri Khagendra Hojai	99,525.00	1,13,782.00	
24	69	Extension Order" Deployment of 01 (one) nos. of Excavator cum Loader (JCB) on monthly hire rent basis for restoration work at Kopili Power House, KHEP Umrongso, w.e.f from 01.02.2020 to 15.08.2020"	NEEPCO/KHEP/C&P /F-67/2020-2021/6125 Date 11.01.2021	Sri Khagendra Hojai	36,000.00	1,06,200.00	
25	90	Supply of 1 (one) no. Excavator cum Loader (JCB) on monthly hire rent basis for loading of slush/muck from dumping yard and filling in AB-6 & behind RCC Wall at back side of Kopili Power Plant ,KHEP, Umrongso Dima Hasao, Assam (from 18.01.2021 to 31.03.2021)	NEEPCO/KHEP/C&P /F-67/2021-2022/693 Date 07.05.2021	Sri Khagendra Hojai	3,66,800.00	4,31,680.00	

C9

A- Pre-Annex-A3

Sl No.	Ref. No.	Name of Work	W.O.No	Name of Contractor	Completed up to MAY 2021		Balance
					Amount (Rs) Excl. GST	Amount (Rs) Incl GST (@18%)	Amount (Rs) Incl. GST (@18%)
26	96	Revised order for deployment of 1 (one) no. Excavator cum Loader (JCB) on monthly hire rent basis for restoration work of Kopili Power Plant, KHEP Umrangso (from 01.06.2020 to 15.08.2020)	NEEPCO/HQ/EPC&P/DF-07/2020-2021/0232 Date 12.03.2021	Sri Khogendra Hojai	96,430.00	1,13,811.00	
27	97	Supply of 02 (Two) nos. of Tractor with hydraulic operated tailor on a daily hire basis for Restoration work at Kopili Power Plant, KHEP, Umrangso (from 01.01.2021 to 31.03.2021)	NEEPCO/KHEP/C&P/DF-07/2021-2022/169 Date 30.04.2021	Sri Khogendra Hojai	1,17,800.00	1,39,004.00	
28	98	Supply of 1 (one) no. Excavator cum Loader (JCB) on monthly hire rent basis for carriage of steel/mesh from dumping yard and filling in AB-6 & behind RCC Wall at back side of Kopili Power Plant, KHEP, Umrangso , Dima Hasao, Assam (from 16.12.2020 to 28.02.2021)	NEEPCO/KHEP/C&P/DF-07/2021-2022/068 Date 30.04.2021	Sri Wanseng Wanghi	4,44,068.00	5,23,920.00	
29	99	Extension Order" Supply of 1 (one) no. Excavator cum Loader (JCB) on monthly hire rent basis for restoration work of Kopili Power Plant ,KHEP, Umrangso (w.e.f. from 24.04.2020 to 31.05.2020 for 145.529 days)	NEEPCO/KHEP/C&P/DF-07/2020-2021/0498 Date 29.11.2020	Sri Khogendra Hojai	8,75,508.00	10,33,170.00	
30	100	Deployment of 02 (two) nos. of Excavator cum Loader (JCB) for rescue and restoration work of Kopili Power House, KHEP Umrangso (w.e.f from 24.12.2019 to 24.02.2020 and from 25.12.2019 to 24.02.2020)	NEEPCO/KHEP/C&P/DF-07/2020-2021/5483 Date 25.11.2020	Sri Kumar Sanai	5,13,632.00	6,05,933.00	
31	101	Extension Order"Deployment of 02 (two) nos. of Excavator cum Loader (JCB) on daily hire charge basis for rescue and restoration work of Kopili Power House, KHEP Umrangso	NEEPCO/KHEP/C&P/DF-07/2020-2021/3477 Date 29.11.2020	Sri Kumar Sunai	2,70,000.00	3,18,600.00	
32	102	Supply of 09 (nine) nos. of Tractor with hydraulic operated tailor on a daily hire basis for Restoration work at Kopili Power Plant, KHEP, Umrangso (from 04.02.2020 to 31.08.2020)	NEEPCO/KHEP/C&P/DF-07/2020-2021/0921 Date 21.10.2021	Sri Khogendra Hojai	9,76,296.00	11,52,029.00	
33	103	Extension Order"Deployment of 02 (two) nos. of Excavator cum Loader (JCB) on daily hire charge basis for rescue and restoration work of Kopili Power House, KHEP, Umrangso	NEEPCO/KHEP/C&P/DF-01/2020-2021/2331 Date 21.09.2020	Sri Kumar Sarar	14,40,680.00	16,99,290.00	
34	104	Extension Order"Supply of Tractor with hydraulic operated tailor on daily hire basis for Restoration work at Kopili Power Plant, KHEP,Umrangso (from 01.05.2020 to 29.07.2020)	NEEPCO/KHEP/C&P/DF-01/2020-2021/1055 Date 27.06.2020	Sri Khogendra Hojai	7,22,008.00	8,51,969.00	
35	105	Extension of Supply Order" Hiring of 03 (three) nos. of Dumper on daily hire basis for Restoration work of Kopili Power Plant, KHEP Umrangso (For 60 days, from 10.03.2020 to 08.05.2020)	NEEPCO/KHEP/C&P/DF-01/2020-2021/255 Date 18.03.2020	Mr. Sunny Hojai	10,06,000.00	12,74,400.00	
36	106	Extension of Supply order for " 01 (one) no. of Excavator(Poclain) on monthly hire rent basis for Restoration work of Kopili Power Plant, KHEP,Umrangso (For 29.04 days, from 23.05.2020 to 01.07.2020)	NEEPCO/KHEP/C&P/DF-07/2020-2021/1623 Date 20.07.2020	Sri Sunny Hojai	3,67,840.00	4,34,051.00	
37	111	Extension of Supply and deployment of Dumper for Rescue and Restoration work at Kopili Power House,KHEP,Umrangso (for 11 days from 30.04.2020 to 10.05.2020)	NEEPCO/KHEP/C&P/DF-01/2020-2021/1768 Date 16.06.2020	Mr. Khogendra Hojai	65,000.00	77,000.00	
38	112	Supply of 01(one) no. of Excavator cum Loader (JCB) On monthly hire rent basis for restoration work of Kopili Power Plant,KHEP,Umrangso (for three months from 29.01.2020 to 27.04.2020)	NEEPCO/KHEP/C&P/DF-01/2020-2021/586 Date 03.08.2020	Mr. Khogendra Hojai	5,40,000.00	6,37,200.00	
39	113	Supply of Tractor with hydraulic operated tailor on daily hire basis for Restoration work of Kopili Power Plant, KHEP,Umrangso (from 16.02.2020 to 30.04.2020)	NEEPCO/KHEP/C&P/DF-07/2020-2021/287 Date 18.05.2020	Sri Khogendra Hojai	8,52,000.00	10,05,600.00	
40	114	Supply of Tractor with hydraulic operated tailor on daily hire basis for Restoration work of Kopili Power Plant, KHEP,Umrangso (from 04.12.2019 to 15.02.2020)	NEEPCO/KHEP/C&P/DF-07/2019-2020/4892 Date 24.02.2020	Mr. Khogendra Hojai	8,05,360.00	10,89,434.00	
41	115	Deployment of 2 (two) nos. of Excavator cum Loader (JCB) for rescue and restoration work at Kopili Power House,KHEP, Umrangso (for 60 days from 25.02.2020 to 24.04.2020)	NEEPCO/KHEP/C&P/DF-07/2020-2021/474 Date 06.06.2020	Sri Kumar Sunai	7,20,000.00	8,49,600.00	
42	117	Extension Order for Supply order for "Hiring of 01(one) no. of Excavator (Poclain) on monthly hire rent basis for restoration work of Kopili Power Plant,KHEP,Umrangso,Dima Hasao,Assam(from 29.01.2020 to 06.02.2020)	NEEPCO/KHEP/C&P/DF-07/2020-2021/135 Date 30.04.2020	Smti Muanlam Vaiphei	1,26,667.00	1,49,467.00	
43	118	Extension of Supply order for 01(one) no. of Excavator (Poclain) on monthly hire rent basis for restoration work of Kopili Power Plant, KHEP, Umrangso (for period of 1 months from 01.02.2020)	NEEPCO/KHEP/C&P/DF-07/2020-2021/181 Date 06.05.2020	Sri Sunny Hojai	11,40,680.00	13,45,200.00	
44	121	Hiring of an Excavator cum Loader (JCB) along with operator for restoration work of Kopili Power Plant, KHEP, Umrangso Dima Hasao, Assam	NEEPCO/KHEP/C&P/DF-07/2019-2020/4790 Date 12.02.2020	Smti. Muanlam Vaiphei	1,15,000.00	1,35,700.00	
45	122	Hiring of six Excavator cum Loader 02(two) no. JCB along with operator for restoration work of Kopili Power Plant, KHEP, Umrangso	NEEPCO/KHEP/C&P/DF-07/2019-2020/5014 Date 05.12.2019	Sri Kumar Sunai	6,00,000.00	7,08,000.00	
46	123	Supply order for 01(one) no. of Excavator cum Loader on monthly hire rent basis for restoration work of Kopili Power Plant, KHEP, Umrangso (from 06.12.2019 to 60.02.2020)	NEEPCO/KHEP/C&P/DF-07/2019-2020/5010 Date 02.03.2020	Mr.Khogendra Hojai	3,00,000.00	3,54,000.00	
47	124	Extension of Supply order for Supply & deployment of Dumper for Rescue and RESTORATION work of Kopili Power House,KHEP, Umrangso (from 12.12.2019 to 29.02.2020)	NEEPCO/KHEP/C&P/DF-07/2019-2020/4889 Date 24.02.2020	Mr.Khogendra Hojai	8,30,000.00	1,00,000.00	
48	125	Hiring of 02(two) nos. of Dumper along with operator for restoration work of Kopili Power House,KHEP,Umrangso	NEEPCO/KHEP/C&P/DF-07/2019-2020/3098 Date 03.12.2019	Sri Khogendra Hojai	7,20,000.00	8,49,600.00	
49	126	Hiring of 01 (one) nos. Excavator (Poclain) on monthly hire rent basis for restoration work of Kopili Power House,KHEP,Umrangso,Dima Hasao,Assam	NEEPCO/KHEP/C&P/DF-07/2019-2020/4795 Date 12.02.2020	Smti.Muanlam Vaiphei	5,76,909.00	6,72,600.00	

C10

A- Pre-Annex-A3

Sl No.	Ref. No.	Name of Works	W.O No	Name of Contractor	Completed up to MAY 2020		Balance
					Amount (Rs) Excl. GST	Amount (Rs) Incl. GST (@18%)	Amount (Rs) Incl. GST (@18%)
50	129	Supply order for Hiring on Excavator cum Loader (JCB) on monthly rate basis for Restoration work of Kopili Power Plant,KHEP,Umrangso (from 05.12.2019 to 03.02.2020)	NEEPCO/KHEP/C&P/ O/F-97/2019-2020/1008 Date 02.05.2020	Mr Khagendra Hojai	3,08,300.00	3,54,800.00	
51	134	Extension of Supply order for Supply & deployment of Dumper for Rescue and Restoration work of Kopili Power House,KHEP,Umrangso (for 11 days from 30.04.2020 to 10.05.2020)	NEEPCO/KHEP/C&P/ O/F-97/2019-2021/151 Date 1805.2020	Mr Khagendra Hojai	3,60,800.00	4,24,800.00	
52	140	Hiring of 01 (one) no. Excavator cum Loader (JCB) for restoration work of Kopili Power House,KHEP,Umrangso,Dima Hasao,Assam	NEEPCO/KHEP/C&P/ O/F-97/2019-2020/1430 Date 10.01.2020	Smti Mousumi Vaishya	1,40,000.00	1,65,200.00	
53	144	Hiring of 01 (three) nos. of Dumper on daily basis for restoration work at Kopili Power Plant, KHEP,Umrangso, Dima Hasao,Assam	NEEPCO/KHEP/C&P/ O/F-97/2019-2020/1378 Date 06.01.2020	Sri Sunny Hojai	10,80,000.00	12,74,400.00	
54	145	Hiring of 01 (one) no. Excavator (Forklift) on monthly basis for restoration work of Kopili Power Plant, KHEP,Umrangso, Dima Hasao,Assam	NEEPCO/KHEP/C&P/ O/F-97/2019-2020/1371 Date 05.01.2020	Sri Sunny Hojai	1,80,000.00	2,12,400.00	
55	146	Extension of Hiring of 03 (Three) nos. of Dumper on daily hire basis for Restoration work at Kopili Power Plant, KHEP,Umrangso,Dima Hasao,Assam	NEEPCO/KHEP/C&P/ O/F-97/2019-2020/0512 Date 23.03.2020	Mr. Sunny Hojai	10,80,000.00	12,74,400.00	
56	147	Hiring of 08 (Four) nos. of Dumper on daily hire basis for Restoration work of Kopili Power Plant, KHEP,Umrangso for 60 days from 01.01.2020	NEEPCO/KHEP/C&P/ O/F-97/2019-2020/0385-93 Date 08.01.2020	Sri Dhireswar Medhi	8,10,000.00	9,55,800.00	
57	148	Order for hiring of Excavator cum Back Hoe Loader (JCB) for engagement in rescue/ restoration work at Kopili Power Station,KHEP,NEEPCO Ltd., Dima Hasao, Assam	NEEPCO/KHEP/C&P /W-217/2019-2020/3538-53 Date 02.12.2019	Sri Pankaj Jidung	1,62,000.00	1,91,160.00	
58	150	Order for hiring of Dumper for engagement in rescue/ restoration works at Kopili Power Station,KHEP,NEEPCO Ltd., Dima Hasao, Assam	NEEPCO/KHEP/C&P /W-217/2019-2020/3563-68 Date 02.12.2019	Sri Pankaj Jidung	1,62,000.00	1,92,420.00	
59	151	Order for hiring of Excavator cum Back Hoe Loader (JCB) for engagement in rescue/ restoration works at Kopili Power Station,KHEP,NEEPCO Ltd., Dima Hasa, Assam	NEEPCO/KHEP/C&P /W-217/2019-2020/3550-51 Date 02.12.2019	Sri Pankaj Jidung	1,44,000.00	1,69,920.00	
60	152	Order for hiring of Dumper for engagement in rescue/ restoration works at Kopili Power Station,KHEP,NEEPCO Ltd., Dima Hasao, Assam	NEEPCO/KHEP/C&P /W-217/2019-2020/3542-47 Date 02.12.2019	Sri Pankaj Jidung	1,44,000.00	1,69,920.00	
61	153	Order for hiring of Dumper for engagement in rescue/ restoration works at Kopili Power Station,KHEP,NEEPCO Ltd., Dima Hasao, Assam	NEEPCO/KHEP/C&P /W-217/2019-2020/3548-54 Date 02.12.2019	Sri Pankaj Jidung	1,44,000.00	1,69,920.00	
62	154	Order for hiring of Dumper for engagement in rescue/ restoration works at Kopili Power Station,KHEP,NEEPCO Ltd., Dima Hasao, Assam	NEEPCO/KHEP/C&P /W-217/2019-2020/3539-40 Date 02.12.2019	Sri Pankaj Jidung	1,62,000.00	1,91,160.00	
63	156	Supply order for Supply of hired JCB (excavator cum back hoe loader) for the work for Kopili Power House Restoration and Revival works of Kopili Power House w.e.f 24.10.2019 to 23.11.2019	NEEPCO/KHEP/C&P O/F-97/2019-2020/3688 Date 17.12.2019	Sri Albertson Tisso	1,55,800.00	1,82,000.00	
64	157	Hiring of an Excavator cum Loader (JCB) along with operator for restoration work of Kopili Power Plant, KHEP, Umrangso	NEEPCO/KHEP/C&P O/F-97/2019-2020/3620 Date 03.12.2019	Smti Mousmie Vaishya	3,00,000.00	3,54,000.00	
65	158	Hiring of Excavator Cum Back Hoe Loader (Podoka) for engagement in rescue/ restoration works at Kopili Power Station, KHEP, NEEPCO Ltd ,Dima Hasao ,Assam	NEEPCO/KHEP/C&P /W-217/2019-2020/3675 Date 10.10.2019	Sri Pankaj Jidung	9,30,000.00	10,97,400.00	
			Total			4,25,10,136.18	-

Annex-A_Pg 1 of 1

REVISED COST ESTIMATE, KPS (4X56 MW) at May'2024 PL

C11

C-Works

HM equipments of Umrong Dam (Gates)

Sl. No.	Description of Items	Unit	Sanctioned Cost			As per SOQ			As per Revised Estimate at May'24 PL							
									Completed work up to May'24			Committed Liabilities/Balance work			Total	
			Qty	Rate	Amt	Qty	Rate	Amt	Qty	Rate	Amt	Qty	Rate	Amt	Qty	Amt
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Umrong Dam Spillway Radial Gate															
1.1	Refurbishment of 3 nos. of Spillway Radial Gate of size 9.15 m x 7.6 m, Replacement of Rubber Seals alongwith SS hardwares and Providing maintenance platform shall be included complete	LS	-	-	2100000.00	-	-	-	-	-	-	-	-	-		0.00
1.2	Sand/Grit Blasting and Painting of Gate assembly	LS	-	-	1000000.00	7.34 sq.m	3186	1229326.64	1495.638	3186	4765182.668	-49.638	3186	-158076.668	1445.71	4606692.04
1.3	Modification of Rope drum hoist including replacement of wire rope, motor, brake, bearings, LCPs, hubleys etc. complete with approach ladder handrails etc.	LS	-	-	18000000.00	-	-	-	-	-	-	-	-	-		0.00
1.4	Painting of RDH and hoist bridge	LS	-	-	200000.00	1.00	778800	778800.00	0.9	778800	700920.00	0.10	778800	77880.00	1.00	778800.00
1.5	Installation of Radar Type Water level sensors	LS	-	-	500000.00	1.00	378000.00	378000.00	0.7	378000.00	264600.00	0.3	378000.00	113400.00	1.00	378000.00
1.6	Installation of ARMAC System	LS	-	-	2000000.00	1.00	4450000	4450000.00	0.7	4450000	3115000.00	0.3	4450000	1335000.00	1.00	4450000.00
2	Under Sluice Gate:		-	-	-											
2.1	Supply, fabrication and installation of 2 sets side guide, sill beam and track assembly made up of Stainless steel complete	LS	-	-	1000000.00	-	-	-	-	-	-	-	-	-	-	0.00
2.2	Refurbishment of 2 sets of Gate Leaf including, replacement of Rubber Seals alongwith SS hardwares complete	LS	-	-	400000.00	-	-	-	-	-	-	-	-	-	-	0.00
2.3	Sand/Grit Blasting and Painting of 2 Gates assembly	LS	-	-	200000.00	-	-	-	-	-	-	-	-	-	-	0.00
2.4	Overhaulic of Screw Hoist	LS	-	-	500000.00	-	-	-	-	-	-	-	-	-	-	0.00
3	Under Sluice Stoplog Gate:		-	-	-	-	-	-	-	-	-	-	-	-	-	
3.1	Supply, fabrication and installation of 2 sets side guide, sill beam and track assembly made up of Stainless steel complete	LS	-	-	1000000.00	-	-	-	-	-	-	-	-	-	-	0.00
3.2	Refurbishment of 1 sets of Gate Leaf including, replacement of Rubber Seals alongwith SS hardwares complete	LS	-	-	400000.00	-	-	-	-	-	-	-	-	-	-	0.00
3.3	Sand/Grit Blasting and Painting of Gates assembly	LS	-	-	200000.00	20	3540	70800	47.74	3540	168999.6	-31.008	3540	-77554.32	31.832	91445.28

C12

C-Works

HM equipments of Umrong Dam (Gates)

Sl. No.	Description of Items	Variation (with respect to sanctioned cost)		Variation (with respect to sanctioned cost)		Variation due to						Remarks
		Qty	Amt	Positive (+ve)	Negative (-ve)	Price Escalation	Change in Scope/Design	Contingency Provision over provision	Additional requirement / New Item (Addition /Deletion	Other causes (specify)	Statutory Levies	
1	2	18	19	20	21	22	23	24	25	26	27	
1	Umrong Dam Spillway Radial Gate											
1.1	Refurbishment of 3 nos. of Spillway Radial Gate of size 9.15 m x 7.6 m. Replacement of Rubber Seals alongwith SS hardwares and Providing maintenance platform shall be included complete		-2150000.00	0	2150000.00	0.00			-1779661.82		-520918.00	This item is executed under item No 5.5 of the BoQ as shown under "P-maintenance During Construction" head
1.2	Sand/Grit Blasting and Painting of Gate assembly	1645.71	3609032.06	3609032.06	0.00	0.00		9055809.373			550072.69	This item is executed under item No. 5.4 of BoQ. Quantity deviation is as per site conditions. The site protocol is attached as HM_Annex-1
1.3	Modification of Rope drum hoist including replacement of wire rope, motor, brake, bearings, LCPs, Pulleys etc. complete with approach ladder handrails etc		-15000000.00	0.00	15000000.00	0.00			-12711866.01		-2288189.56	This item is executed under item No 5.6 & 5.7 of the BoQ as shown under "P-maintenance During Construction" head
1.4	Painting of FOH and hoist bridge	1.00	578800.00	578800.00	0.00	0.00		490508.4746			88291.53	This item is executed under item No. 5.7.2 of the BoQ.
1.5	Installation of Radar Type Water level sensors		-122000.00	0.00	122000.00	0.00			-103389.83		-18610.17	This item is executed under item No. 16.4.1 of the BoQ.
1.6	Installation of ARMAC System		2450000.00	2450000.00	0.00	0.00			2076271.19		373728.81	This item is executed under item No. 10.2.2 of the BoQ.
2	Under Sluice Gate:								0.00		0.00	
2.1	Supply, fabrication and installation of 2 sets. side guide, sill beam and track assembly made up of Stainless steel complete		-1000000.00	0.00	1000000.00	0.00			-847457.63		-152542.37	This item had to be executed under item No. 6.0 of BoQ however due to non-accessibility of the site the work could not be undertaken hence proposed for deletion from the scope
2.2	Refurbishment of 2 sets of Gate Leaf including, replacement of Rubber Seals alongwith SS hardwares complete		-400000.00	0.00	400000.00	0.00			-338983.05		-61016.95	
2.3	Sand/Grit Blasting and Painting of 2 Gates assembly		-200000.00	0.00	200000.00	0.00			-169491.53		-30508.47	
2.4	Overhauling of Screw Hoist		-500000.00	0.00	500000.00	0.00			-423728.81		-76271.19	Duplication of Item No. 8.8 as under.
3	Under Sluice Stoplog Gate:					0.00			0.00		0.00	
3.1	Supply, fabrication and installation of 2 sets. side guide, sill beam and track assembly made up of Stainless steel complete		-1000000.00	0.00	1000000.00	0.00			-847457.63		-152542.37	Not executed due to non-accessibility of site.
3.2	Refurbishment of 2 sets of Gate Leaf including, replacement of Rubber Seals alongwith SS hardwares complete		-400000.00	0.00	400000.00	0.00			-338983.05		-61016.95	This item is executed under item No. 7.5.1,7.5.2 & 7.5.3 of BoQ and is shown in "I-Gates".
3.3	Sand/Grit Blasting and Painting of2 Gates assembly	25.892	-108554.72	0.00	108554.72	0.00		-92068.03			-16686.69	This item is executed under item No. 7.4 of BoQ. Quantity deviation is as per site conditions. The site protocol is attached as HM_Annex-2

~509~

REVISED COST ESTIMATE_KPS (4X50 MW) at May'2024 PL

C13

C-Works

HM equipments of Umrong Dam (Gates)

Sl. No.	Description of Items	Unit	Sanctioned Cost			As per BOQ			As per Revised Estimate at May'24 PL							
									Completed work up to May'24			Committed Liabilities/Balance work			Total	
			Qty	Rate	Amt	Qty	Rate	Amt	Qty	Rate	Amt	Qty	Rate	Amt	Qty	Amt
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
3.4	Overhauls of Screw Hoist	LS	-	-	500000.00											0.00
4	Adit Gate		-	-												0.00
4.1	Supply, fabrication and installation of Adit Gate of Size 2 m X 2.0 m complete	LS	-	-	1000000.00											0.00
5.0	Civil Works	LS	-	-	2500000.00											0.00
	Not envisaged in DPR but subsequently added under BoQ															
6	Item No 5.0 Spillway radial gate(3Nos)															
6.1	Item No 5.1 Dismantling of concrete and removal of existing 2nd stage embaded parts(for 3Nos of opening) comprising of wall plates and sill beam including transportation of removed steel materials upto nearest store, all tools, tackles, plant, labour, etc complete as per technical specification.	Cum	-	-	0.00	114.15	15930	1818409.5	47.89	15930	762887.7	3.21	15930	51135.3	51.10	814023.00
6.2	Item No 5.2 Design, supply and installation of 1st stage Anchors in existing concrete alongwith chemical injection including all plants, tools, tackles, labour etc complete as per technical specification complete.	No.	-	-	0.00	667	2020	1347740	397.00	2020	801940.00	44.00	2020	88880.00	441.00	890820.00
6.3	Item No 5.3 Design, supply, fabrication, transportation and installation of 2nd stage embaded parts (for 3nos of opening) comprising of wall plates and sill beam and other embedment as required as per technical specification complete. The work shall be inclusive of all tools, tackles, manpower, machineries etc.	MT	-	-	0.00	14.58	522500	7623000	13.4815	522500	9668876.31	2.0530	522500	1072725.13	20.535	10787791.00
	Total				2,85,00,000.00			1,78,36,958.14			2,02,43,426.32			25,03,445.52		2,27,46,871.84
	sub- total (exclusive of GST)				2,41,52,542.37			1,51,16,066.21			1,71,55,446.63			21,21,564.30		1,92,77,010.93
	GST@ 18%				43,47,457.63			27,20,891.91			30,87,980.29			3,81,880.52		34,69,861.81
	Total (including GST)				28500000.00			17836958.14			20243426.32			2503445.52		22746871.84

~ 510 ~

REVISED COST ESTIMATE, KPS (4X50 MW) at May'2024 PL

C-Works

HM equipments of Umrong Dam (Gates)

Sl. No.	Description of items	Variation (with respect to sanctioned cost)		Variation (with respect to sanctioned cost)		Variation due to						Remarks
		Qty	Amt	Positive (+ ve)	Negative (- ve)	Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Additional requirement / New Item (Addition /Deletion	Other causes (specify)	Statutory Levies	
1	2	18	19	20	21	22	23	24	25	26	27	
3.4	Overhaulin of Screw Hoist		-530000.00	0.00	530000.00	0.00			-423728.81		-76271.19	This item is executed under Item No. 7.6 of the BoQ, shown in "J-Gates".
4	Adit Gate		0.00	0.00	0.00	0.00			0.00		0.00	
4.1	Supply, fabrication and installation of Adit Gate of size 2 m X 2.0 m complete		-1000000.00	0.00	1000000.00	0.00			-847457.62		-152542.37	The item is not executed as the provision of Adit gates was replaced by Adit plug as per the decision of D&T Approval of GME & drawing attached as HM_Annex-5.
5.0	Civil Works		-2500000.00	0.00	2500000.00	0.00			-2118644.07		-381355.93	The civil work is executed in the HM Gates contract under R&M of Kopili.
	Not envisaged in DPR but subsequently added under BoQ											
9	Item No 5.0 Spillway radial gate(3Nos)										0.00	
6.1	Item No 5.1 Dismantling of concrete and removal of existing 2nd stage embedded parts(for 3Nos of opening) comprising of wall plates and sill beam including transportation of removed steel materials upto central store, all tools, tackles, plant, labour, etc complete as per technical specification	51.1	814023.00	814023.00	0.00	0.00			689850.00		124173.00	
6.2	Item No 5.2 Design, supply and installation of 1st stage Anchors in existing concrete alongwith chemical injection including all plants, tools, tackles, labour etc complete as per technical specification complete.	401	890830.00	890830.00	0.00	0.00			754932.20		135897.80	
6.3	Item No 5.3 Design, supply, fabrication, transportation and installation of 2nd stage embedded parts (for 3nos of opening) comprising of wall plates and sill beam and other embedments as required as per technical specification complete. The work shall be inclusive of all tools, tackles, manpower, machineries etc.	20.535	10717751.50	10717751.50	0.00	0.00			9080709.41		1637041.09	
	Total		-57,51,128.16	1,90,77,426.56	2,48,30,554.72	-	-	84,54,472.31	-43,33,004.00	-	-6,77,595.81	

sub-total (exclusive of GST)	-48,73,532.34
GST@ 18%	-8,77,595.82
Total (including GST)	**-57531128.16**

C15

REVISED COST ESTIMATE AT MAY'2024 PL

ABSTRACT OF J- POWER PLANT CIVIL WORKS

Amount (Rs. In Lakh)

Sl No.	Item	CEA Vetted Cost as per Jan 21 PL	RCE May'24 PL			Variation	Reasons of Variation					
			Completed upto May'24	Committed Liabilities /Balance	Total		Price Escalation	Change in Scope/Desi gn	Inadequate / over Provision	Addition /Deletion	Other causes (specify)	Statutory Levies
1	HM:Penstock & Steel In-Liners in HRT	25,419.86	34,614.13	798.21	35,412.34	9,992.38	5,291.62	-	84.48	3,092.04	-	1,524.26
2	HM : (Gate)	619.00	1,063.92	102.25	1,166.17	547.17	0.00	0.00	24.45	439.25	0.00	83.47
3	Civil:HRT, Penstock & PH											
i	Civil:BOQ (APS)	6,475.84	6,759.81	116.26	6,916.07	440.23			786.91	-413.83		67.15
ii	Civil:Escalation (APS)		697.95	60.48	758.43	758.43	642.74					115.69
iii	Civil: HRT,Penstk & PH(Extra works APS)		1,435.95	269.53	1,705.47	1,705.47				1445.32		260.16
iv	Civil:Cost of Cement & Steel(APS)	1,121.77	1,454.66	5.77	1,460.43	338.67			287.01			51.66
v	Civi:Additional Works (Other than APS)		696.60	38.72	737.32	737.32				624.85		112.47
	Sub- Total of Sl no.3	7,597.61	11,086.96	490.77	11,577.73	3,980.12	642.74	-	1,073.91	1,656.33	-	607.14
4	Civil: in Switchyard	800.59	215.55	-	215.55	-585.04	-	-	-495.79	-	-	-89.24
	Total (Sl No. 1+2+3+4)	34,437.16	46,980.57	1,391.22	48,371.78	13,934.63	5,934.36	-	667.03	5,187.63	-	2,125.62

2512

I__CIVIL_Abstract_Pg 1 of 1

C16

BIDDER COST ESTIMATE 400KV LILO PS 220/400

Civil Works

Sr. No.	Description	Unit	CSQ estimated at 220/132 PS			As per BOQ			As per Bidder's Estimate							
			Qty	Rate	Amt	Qty	Rate	Amt	Complete work as a whole			Completed excluding delivery items			Gross	
									Qty	Rate	Amt	Qty	Rate	Amt	Qty	Amt
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	I CLEARING (SUCH as...) EXCAVATION AND EARTHWORK															
1.1	Clearing, (...) and removing (...)															
	Allowance a) Supply of reinforced (...)															
	Allowance b (a) (...)															
	Allowance b (b) (...)															
	Allowance c (...)															
	Allowance d (...)															
1.2	Excavation (...)															
	Allowance a) (...)															
	Allowance b (a) (...)															
	Allowance b (b) (...)															
	Allowance c (...)															
	Allowance d (...)															
1.3	Backfilling (...)															

C17

~514~

Sl. No.	Description of Items	Tenderer's Bid Rate in Numbers (Excl. GST)				Extra Over for							
		Qty.	Unit	Positive (Excl.)	Negative (- Excl.)	Extra Excavation	Change in Soil Condition	Undergrade Excavation upto specified	Additional Depth(m)	Other works (Specify)	Implement Covers	Remarks	Arithmetic Discrepancy
1	2	3	4	5	6	7	8	9	10	11	12	13	
	5 CM PROTECTION WORK IN RCC 1:1½:3 (M-20) MIX INCLUDING REINFORCEMENT AS PER DESIGN												
5.1	Providing, fabricating, painting and erection of various types of structural steel work, including cutting, welding, site storage, overhead and transportation (including provision for all labour, tools and tackles) of materials including bend and rollformers, but excluding cost of steel (to be paid under Item No. 5.2) & including making & fixing in position the base plate, anchor bolts, nuts and washers, supply, fabrication and fixing of saddle plates, bearing plates, and necessary embedded parts complete as per design, drawing and technical specification.												
	Milestone A: Supply of material for structural & steel work (Excl. GST) as per item. Payment @ 70% (Seventy percent) of BoQ cost shall be paid to the contractor against procurement of materials required for completion of the works progressively on submission of proforma invoice and certificate of GST and certificate etc. to the same. However, payment against this milestone shall be restricted to the quantity as per approved fabrication drawing.	10.000	1,176,28,920.00	9,12,84,920.00	0.00								
	Milestone B: Fabrication of structural & steel work (Excl. GST) as per item. Payment @ 10% (Ten percent) of BoQ cost shall be paid to the contractor against progressive fabrication of structural steel work as per approved fabrication drawing. However, payment against this milestone shall be restricted to the quantity as per approved fabrication drawing.	10.000	1,17,68,892.00										
	Milestone C: Erection of structural & steel work (Excl. GST) as per item. Payment @ 10% (Ten percent) of BoQ cost shall be paid to the contractor after erection of structural steel work as per approved fabrication drawing. However, payment against this milestone shall be restricted to the quantity as per approved fabrication drawing.	10.000	1,17,68,892.00										
	Milestone D: Commissioning and trial run of the item/job & final acceptance. Payment @ 10% (Ten percent) of BoQ cost shall be paid to the contractor after commissioning and trial run of the work & submission of test certificate etc. to the same. However, payment against this milestone shall be restricted to the quantity as per approved fabrication drawing.	10.000	1,17,68,892.00										
5.2	Supply, fabrication, painting and erection of structural steel work, including cutting, site storage, erection and transportation (including provision for all labour, tools and tackles) of materials including bend and rollformers, but excluding cost of steel, supply, fabrication and fixing of hangers, ends, rubber bearing, MS bolts and nuts and other material as per design, drawing and technical specification.												
	Milestone A: Supply of material for structural & steel work (Excl. GST) as per item. Payment @ 70% (Seventy percent) of BoQ cost shall be paid to the contractor against procurement of materials required for completion of the works progressively on submission of proforma invoice and certificate of GST and certificate etc. to the same. However, payment against this milestone shall be restricted to the quantity as per approved fabrication drawing.	10.000	1,17,68,892.00	9,12,84,920.00	0.00								
	Milestone B: Fabrication of structural & steel work (Excl. GST) as per item. Payment @ 10% (Ten percent) of BoQ cost shall be paid to the contractor against progressive fabrication of structural steel work as per approved fabrication drawing. However, payment against this milestone shall be restricted to the quantity as per approved fabrication drawing.	10.000	1,17,68,892.00										
	Milestone C: Erection of structural & steel work (Excl. GST) as per item. Payment @ 10% (Ten percent) of BoQ cost shall be paid to the contractor after erection of structural steel work as per approved fabrication drawing. However, payment against this milestone shall be restricted to the quantity as per approved fabrication drawing.	10.000	1,17,68,892.00										
	Milestone D: Commissioning and trial run of the item/job & final acceptance. Payment @ 10% (Ten percent) of BoQ cost shall be paid to the contractor after commissioning and trial run of the work & submission of test certificate etc. to the same. However, payment against this milestone shall be restricted to the quantity as per approved fabrication drawing.	10.000	1,17,68,892.00										
5.3	Providing, fabricating, painting and erection of various types of structural steel work, including cutting, site storage, erection and transportation (including provision for all labour, tools and tackles) of materials including bend and rollformers, but excluding cost of steel, supply, fabrication and fixing of hangers, ends, rubber bearing, MS bolts and nuts and other material as per design, drawing and technical specification.	1000.000	14,42,34,547.00	9,12,84,920.00	1.00			12,75,949.20			11,29,58,598.00		

C18

Sl. No.	Description of Item	Unit	As per Bid Estimate			As per SOR			As per Revised Estimate							
			Qty.	Rate	Amt.	Qty.	Rate	Amt.	Completed work up to Date			Proposed Additional Work			Total	
									Qty.	Rate	Amt.	Qty.	Rate	Amt.	Qty.	Amt.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.1																
1.2																
1.3																
1.4																
1.5																
1.6																
1.7																
1.8																
1.9																
1.10																
1.11																
1.12																
1.13																
	Sub-total of Civil Works (Including all GST @ 18%)															
	Insurance															
	Grand Total of Civil Works (Including all GST)															

C19

REVISED COST ESTIMATE 80PS1/PS 330.000
AS MAY 2018 PC

(₹ Thousand & Rs Units)

Sl. No.	Description of Items	Tenderer quoted rates for contract items				Payments due to							Remarks
		Qty	Unit	Positive (+ve)	Negative (-ve)	Extra Expenditure	Saving in Original Estimate	Increase / Decrease in rate quoted	Additional Expenditure	Water tanker capacity	Increase / Saving	Remarks	Remarks
1	2	3A	3B	3C	3D	3E	3F	3G	3H	3I	3J	3K	
1.1													
1.2													
1.3													
1.4													
1.5													
1.6													
1.7													
1.8													
1.9													
1.10													
1.11													
1.12													
1.13													

~516~

E Prabhat

C20

REVISED COST ESTIMATE 400KLPD STP 2nos
22 MAY 2018 EL

J Provision for Works

Sl No	Description of Item	Unit	Unit wise cost as on Jan'13 PS			As per BOQ			As per Revised Estimate							
									Considered cost as on Jan'13			Escalation & Variation cost			Total	
			Qty	Rate	Unit	Qty	Rate	Unit	Qty	Rate	Unit	Qty	Rate	Unit	Qty	Unit
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	Additional items over and as per site requirement with approval of competent authority as per BoP															
	Extra Item No. 1 Design, Fabrication, Supply, Transportation, Handling, Safe Storage, Erection and Setting in position of all steel, cast iron, Aluminium, wrought iron and other metal work complete as per drawings and as directed by the Engineer-in-charge including all leads and lifts, all necessary cutting, hoisting, welding, forging and making good after fixing in position

C21

REVISED COST ESTIMATE (RCE) / PC (All BE)
As on MAY'2024 PL

(Rs. in Lakhs)

S.No.	Description of Work	Tenders at par / above / below (-) %				Variation since							
		No.	Cost	Position (cost)	Agreed (+/-)	Cost variation	Change in Scope of work	Inadequate / Unrealistic cost provision	Additional Work	Other cause / reasons	Increase / (-) decr.	Remarks	Approval
1	2	18	19	20	21	22	23	24	25	26	27	28	
	Additional work vide circular per site requirement with approval of competent authority as per item												
	Extra Item No. 1 Design, Fabrication, Supply, Transportation, Handling, Min Strength 0.45 mm including provision of Anchor/ Lug/ Nut/ Fasteners etc all fixed in situ in the vicinity of Jobs as (Ex. HDD/Hor.D.D) including provision of grout holes & plugging etc	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	[illegible]	-	[illegible]	[illegible]	
	Extra Item No. 2: Construction and dismantling of miniature bridge across cargo shaft under steering W13	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	[illegible]	-	[illegible]	[illegible]	
	Extra Item No. 3: Design, Fabrication, Supply, Transportation, Handling, Min Strength 0.45 mm of 0.5 mm gr.Angle (SHM including including provision of grout holes & plugging, Anti-pendulum fittings etc												
	Milestone A Supply of material for pipe track & shelter base. Payment of 10% (Ten percent) of rate shall be paid to the contractor against procurement of materials (Inspectable components of the work) progressively on submission of proforma invoice and verification of the same onboard site. In the event however, payment against the invoices shall be restricted to the quantity as per approved fabrication drawings	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	[illegible]	-	[illegible]	[illegible]	Copy of approval letter is attached as SOR_Annex-IV
	Milestone B(i) Fabrication of pipe track & shelter base (Structural part shall be inclusive pre-galvanization of fabrication works)		[illegible]			-	-	-					
	Milestone C On arrival (pressure A, shelter liner (Payment at 20% (Twenty percent) of item are shall be paid to the contractor after receipt of the structure as per drawing to site/store yards and storage area and the same by MM depot. However, payment against the fabrication work is restricted to the quantity as per approved fabrication drawing		[illegible]			-	-	-	[illegible]	-	[illegible]	[illegible]	
	Milestone D Commissioning and trial run of the pressure & liner in the Payment of 10% (Ten percent) of sub-shall be paid to the contractor after successful commissioning and trial run of the entire pressure system on the basis of completion certificate issued by the works / contracts agency against the milestone shall be restricted to the quantity as per approved item description]		[illegible]			-	-	-					
	Extra Item No. 4 Valve Cement Mortar lining of all sizes as per specifications and as directed i/c supply	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	[illegible]	-	[illegible]	[illegible]	

~ 518 ~

I_MM_Tender_Pt. II (E)

C22

REVISED COST ESTIMATE (PSP/LTPS 200 MW)
@ MAY'2024 PL

(₹ in Lakhs/Lakh (Rs.))

S.No.	Description of Item	Unit	As per Old Estimate			As per New Estimate			Variation					
			Qty	Rate	Amt	Qty	Rate	Amt	Qty	Rate	Amt	Qty	Rate	Amt
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	Extra Item No. A: Excavating of Cargo Road (As under Warning NO.)	Metric	-	-	-	-	-	-						
	Extra Item No. B: Construction of Road as per B.I.S. (As per Spec. under MM Road Report (PPS) 200 MW)	Km			-			-						
	Extra Item No. C: Excavating earth in the ground for foundations and in trench including earthwork in all lifts, as per C.S.R.	Cubic	-	-	-	-	-	-						
	Extra Item No. D: Providing and laying in position cement concrete in the proportion of 1:2:4 (1 part of cement, 2 parts of coarse sand and 4 parts of graded stone aggregate)	Cum	-	-	-	-	-	-						
	Extra Item No. E: Providing and laying in position cement concrete in the proportion of 1:1.5:3 (1 part of cement, 1.5 parts of coarse sand and 3 parts of graded stone aggregate)	Cum	-	-	-	-	-	-						
	Total Cost of Extra Items (Inclusive of GST @ 18%)				₹ 0.00									
	Total Cost (Rs/Lakh)				₹ 1,34,21,23,649.44									

C23

REVISED COST ESTIMATE WORKS (FS 300 MW)
AS ON 01.04.2024

1 Package (05 Units)

Sl. No.	Description of Item	Tentative packages as per approved cost estimate				Variation due to							Remarks
		Qty.	Unit	Rate (Rs.)	Amount (Rs.)	New Conditions	Change in Scope/ Design	Unforeseen Circumstances/ Force Majeure	Additional Deletion	Others (specify)	Variation (+/-)	Remarks	
1	2	3A	3B	3C	3D	3E	3F	3G	3H	3I	3J	3K	
	Extra Item No. 6 Dewatering of water from the water channel etc.												
	Extra Item No. 9 Earthwork in Rock as in Cl. 5 and 6 Terms & Sub-section Mode of Basis (PE) (Dry) (HM)												
	Extra Item No. 7 Dewatering works on the Control Tel Rail plant income on Dewatering equipment EMPTY AND FILL IN SITU												
	Extra Item No. 8 Dewatering of main control room as Added												
	Extra Item No. 11 Refurbishment/Modification of 220 kV Circuit Breaker (CB) of Bus Coupler Bay Unit No. 1, 2 & Spare Bay of 400 kV												
	Sub-total of Tentative Items (Additional) (GST @ 18%)												
	Total (Tentative Items)												

~ 520 ~

C24

J-Escalation-HM

PRICE VARIATION ADJUSTMENT

			Indices (Provisional)					
	Period of Bill covered	Bill Amount	Labour	Month for Indices	Material (MS-Rat product)	Month for Indices	Material other than steel	Month for Indices
1st R.A	Mar'2021	₹ 3,50,19,003.00	119	Feb'21	135.2	Mar'21	129.3	Mar'21
2nd R.A	May'2021	₹ 10,82,76,840.00	119.6	Mar'21	143.6	Apr'21	131.7	Apr'21
3rd R.A	June'2021	₹ 11,88,76,726.00	120.1	Apr'21	154.1	May'21	132.7	May'21
4th R.A	July'2021	₹ 7,75,57,121.00	120.8	May'21	154.8	June'21	133.7	June'21
5th R.A	Aug'2021	₹ 21,33,38,304.00	122.8	July'21	156.3	July'21	134.5	July'21
6th R.A	Sept'2021	₹ 3,09,36,483.00	123.0	Aug'21	156.1	Aug'21	135.9	Aug'21
7th R.A	Oct'2021	₹ 24,08,24,071.00	123.0	Aug'22	156.1	Sept'21	136.0	Sept'21
8th R.A	Nov'2021	₹ 29,15,50,343.00	124.9	Oct'21	159.7	Oct'21	139.1	Oct'21
9th R.A	Dec'2021	₹ 13,70,62,903.00	125.1	Nov'21	163.4	Nov'21	142.9	Nov'21
10th R.A	Jan'2022	₹ 22,68,63,137.00	125.7	Nov'22	160.6	Dec'21	142.4	Dec'21
11th R.A	Feb'2022	₹ 10,58,01,077.00	126.4	Dec'21	156.1	Jan'22	142.9	Jan'22
12th R.A	Mar'2022	₹ 12,12,00,898.00	125.1	Jan'22	158.2	Feb'22	144.9	Feb'22
13th R.A	Apr'2022	₹ 4,49,99,371.00	126.0	Mar'22	169.8	Mar'22	148.8	Mar'22
14th R.A	May'2022	₹ 3,35,25,961.00	127.7	Apr'22	178.3	Apr'22	151.9	Apr'22
15th R.A	June'2022	₹ 2,96,97,057.00	127.7	Apr'22	174.5	May'22	154.0	May'22
16th R.A	July Aug'22	₹ 4,28,77,174.00	129.9	July'22	157.2	July'22	153.8	July'22
17th R.A	Sept'2022	₹ 4,10,53,512.00	129.9	July'22	153.6	Aug'22	153.1	Aug'22
18th R.A	Oct'2022	₹ 3,64,44,433.00	131.3	Sept'22	150.3	Sept'22	152.1	Sept'22
19th R.A	Nov'2022	₹ 5,44,66,894.00	132.5	Nov'22	146.4	Nov'22	152.1	Nov'22
20th R.A	Dec'2012	₹ 3,07,56,389.00	132.3	Dec'22	143.9	Dec'22	150.4	Dec'22
21st R.A	Jan'2023	₹ 3,44,96,705.00	132.3	Dec'22	143.5	Jan'23	150.6	Jan'23
22nd R.A	Feb'2023	₹ 3,62,12,267.00	132.8	Jan'23	143.5	Jan'23	150.6	Jan'23
23rd R.A	Mar'2023	₹ 3,36,94,697.00	132.7	Feb'2023	150.9	Mar'23	150.9	Mar'23
24th R.A	April'23	₹ 1,22,66,916.00	134.1	April'23	150.6	April'23	150.9	April'23
25th R.A	May'23	₹ 2,49,26,694.00	134.7	May'23	147.8	May'23	149.6	May'23
26th R.A	June'23	₹ 78,10,619.00	136.4	June'23	144.5	June'23	148.9	June'23
	July'23	₹ 4,37,64,572.00	138.7	July'23	142.8	July'23	151.5	July'23
	Aug'23	₹ 4,22,29,172.00	139.2	Aug'23	142.1	Aug'23	152.4	Aug'23
	Sept'23	₹ 23,07,50,248.00	137.5	Sept'23	144.5	Sept'23	151.5	Sept'23
27th R.A	Sept'23	₹ 4,58,43,730.63	137.5	Sept'23	144.5	Sept'23	151.5	Sept'23
28th R.A	Sept'23	₹ 4,67,50,619.00	137.5	Sept'23	144.5	Sept'23	151.5	Sept'23
29th R.A		₹ 3,38,72,176.00						
		₹ 2,57,98,63,436.63						

Note: The Work completion date is 10.09.2023

~ 521 ~

C25

J-Escalation-HM

PRICE VARIATION ADJUSTMENT

						Final Indices					
	Period of bill covered	Bill Amount	HSD	Escalation amount	Escalation calculated	Labour	Material MS-Flat product	Material other than steel	Final Escalation amount		
1st R.A	Mar'2021	₹ 3,50,19,003.00	83.06	4574764.00	4574763.963	344.45	133.5	129.9	4474832.847	₹ 1,00,088.85	₹ 119.60
2nd R.A	May'2021	₹ 10,82,76,840.00	84.0968	17696532.00	17696400.62	347.33	152.4	132.9	21062069.78	₹ 33,66,037.78	₹ 120.60
3rd R.A	June'2021	₹ 11,88,76,726.00	88.06	24255368.00	24255166.27	350.50	154.9	133.7	23058187.06	₹ 8,02,819.06	₹ 121.70
4th R.A	July'2021	₹ 7,75,57,121.00	90.51	16431426.00	16430834.06	353.66	156.3	135.0	17240115.47	₹ 8,06,689.47	₹ 122.90
5th R.A	Aug'2021	₹ 21,33,38,004.00	90.33	47219395.00	47216913.74	354.34	156.4	136.2	47882365.16	₹ 6,62,970.16	₹ 123.00
6th R.A	Sept'2021	₹ 3,09,36,483.00	89.88	6882213.00	6882212.628	355.10	156.3	137.4	6984894.82	₹ 1,02,681.82	₹ 123.30
7th R.A	Oct'2021	₹ 24,08,24,071.00	95.42	55407700.00	55407700.71	359.71	158.7	140.7	62569181.66	₹ 31,55,481.66	₹ 124.90
8th R.A	Nov'2021	₹ 29,15,50,343.00	85.27	68159322.00	68159678.66	362.02	161.5	143.7	74477691.78	₹ 62,78,369.78	₹ 125.70
9th R.A	Dec'2021	₹ 13,70,62,909.00	83.37	34461163.00	34460829.55	361.15	160.6	143.3	33264166.53	₹ -11,96,996.47	₹ 125.40
10th R.A	Jan'2022	₹ 22,68,63,137.00	83.37	54881782.00	54881280.18	360.29	157.1	143.8	52611957.93	₹ -22,70,824.07	₹ 125.30
11th R.A	Feb'2022	₹ 10,58,01,077.00	83.37	24122411.00	24122539.15	360.00	160.3	145.3	25809118.46	₹ 16,86,707.46	₹ 126.00
12th R.A	Mar'2022	₹ 12,12,00,498.00	84.36	28879660.00	28880248.98	362.88	170.2	148.9	34333755.54	₹ 54,94,095.54	₹ 126.80
13th R.A	Apr'2022	₹ 4,49,99,371.00	93.33	13228608.00	13228608.1	367.78	179.1	152.3	14902789.13	₹ 16,74,180.13	₹ 127.70
14th R.A	May'2022	₹ 3,35,25,961.00	91.30	10907802.00	10907801.78	371.92	176.1	155.0	10692517.1	₹ -1,15,284.90	₹ 129.60
15th R.A	June'2022	₹ 2,96,97,057.00	86.24	9195564.00	9195563.805	372.10	161.5	155.4	8197097.31	₹ -9,98,466.69	₹ 129.70
16th R.A	July Aug'22	₹ 4,28,77,174.00	87.17	11159334.00	2177620.668 8978765.92	374.11	155.6	154.0	7164286.336 6900565.000	₹ -13,334.33 ₹ -44,78,100.85	₹ 129.90 ₹ 130.10
17th R.A	Sept'2022	₹ 4,10,53,512.00	87.17	10176716.00	10176716.00	374.14	149.6	151.9	9691115.388	₹ -1,85,600.61	₹ 131.30
18th R.A	Oct'2021	₹ 3,64,44,433.00	89.20	8793380.00	8793379.855	381.60	148.7	152.9	8729142.286	₹ -64,237.71	₹ 132.50
19th R.A	Nov'2022	₹ 5,44,66,894.00	89.20	12589963.00	12589963.42	381.60	146.4	152.5	12021433.12	₹ 31,468.12	₹ 132.50
20th R.A	Dec'2022	₹ 3,07,50,389.00	89.23	6783063.00	6783063.369	381.02	143.8	150.5	6777857.751	₹ -5,205.25	₹ 132.30
21st R.A	Jan'2023	₹ 3,44,96,705.00	90.29	7623933.00	7623933.178	382.46	144.1	150.7	7724040.692	₹ 1,00,107.69	₹ 132.80
22nd R.A	Feb'2023	₹ 3,62,12,167.00	90.57	8048448.00	8048448.588	382.18	150.5	150.9	8852954.939	₹ 8,04,505.94	₹ 132.70
23rd R.A	Mar'2023	₹ 3,36,94,997.00	90.57	8279753.00	8279753.144	383.95	151.0	151.0	8830984.361	₹ 50,831.36	₹ 133.30
24th R.A	April'23	₹ 1,21,66,916.00	90.578	3035136.00	3035135.983	386.50	150.4	151.1	3030883.553	₹ -4,152.45	₹ 134.20
25th R.A	May'23	₹ 2,48,26,694.00	91.34	5949160.00	5949159.849	387.84	147.7	149.4	5934140.065	₹ -15,019.94	₹ 134.70
26th R.A	June'23	₹ 78,10,619.00	91.98	1805366.18	1805366.179	392.83	144.5	148.9	1805366.179	₹ -0.00	₹ 136.40
	July'23	₹ 4,37,54,572.00	92.47	10326218.85	10326218.84	402.34	142.8	152.1	10364136.99	₹ 37,918.14	₹ 139.70
	Aug'23	₹ 4,21,29,172.00	92.57	9897112.56	9897112.569	400.90	141.8	152.5	9863471.559	₹ -33,641.00	₹ 139.20
	Sept'23	₹ 13,07,50,248.00	92.57	54830650.38	54830650.38	396.00	144.7	151.8	55075402.88	₹ 3,44,752.50	₹ 137.90
27th R.A	Sept'23	₹ 4,58,43,730.63	92.57	10893341.00	10893342.86	396.00	144.7	151.8	10941988.45	₹ 48,645.45	₹ 137.90
28th R.A	Sept'23	₹ 4,67,50,619.00	92.57	11118424.00	11118836.79	396.00	144.7	151.8	11158424.31	₹ 0.31	₹ 137.90
29th R.A		₹ 3,28,72,176.00	89.0975			373.79	153.19	147.20	7905459.989		
		₹ 2,57,98,63,436.63		₹ 50,74,91,712.87						₹ 1,78,29,366.85	
										7905459.989	

Total Balance/Liability against Price Variation to be paid = ₹ 2,53,34,826.34

Note: The Work completion date is 10.09.2

₹ 13,86,584.37 Amount Approved by IE against the final Sum payable to the contractor in lieu of variation in material density of cladded steel

₹ 99,88,78,287.34 Total Escalation paid upto 28th RA

~ 522 ~

J_HM_Escal_Pg 2 of 2

C26

J- Work: HM Equipment of Kapili Power House (Gates)

Sl. No	Description of Items	Unit	Assessment Cost			As per BOQ			As per Revised Estimate at May'21 PL							
									Completed work upto Mar'21			Committed Liabilities/Balance work			Total	
			Qty	Rate	Amt	Qty	Rate	Amt	Qty	Rate	Amt	Qty	Rate	Amt	Qty	Amt
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Intake Trash Rack															
1.1	Supply, fabrication and installation of 6 sets of Guide channel from El. 371.80 to El. 387.5 m (each set of Stainless steel complete)	LS	-	-	40,00,000.00	11.50 MT	50,000	5,75,000	8.42	50,000	48,48,480.00	1.47	50,000	12,10,389.00	12.9499	60,71,149.00
1.2	Repair and painting of 30 nos. of Trash Rack panels of size 0.623 m x 3.458 m complete	LS	-	-	10,00,000.00	0.018 Sqm	5000	2,63,472	5.515	5304	31,63,472.00	0	5304	-	5.515	31,63,472.00
2	Intake Bulkhead Gate		-	-												
2.1	Supply, fabrication and installation of side guide, sill beam and back assembly for Intake Bulkhead gate of size 3.353 m x 4.6 m made up of Stainless steel complete	LS	-	-	20,00,000.00	-	-	-	-	-	-	-	-	-	-	-
2.2	Refurbishment of Gate leaf of size 3.353 m x 4.6 m including replacement of wheel bearing, Rubber Seals alongwith SS hardwares complete	LS	-	-	1,00,000.00	-	-	-	-	-	-	-	-	-	-	-
2.3	Sand blast cleaning and Painting of Gate assembly of size 3.810 m x 4.6 m.	sft	-	-	2,00,000.00	33.24 Sqm	5304	1,69,924.56	100.711	5304	5,34,272.16	-68.581	5304	-2,16,679.61	132.13	6,86,592.64
2.4	Modification of 40 t capacity Rope drum hoist including replacement of valve rope, motor, brake, bearings, LCPS, Pulleys etc. complete with approach ladder handrails etc.	LS	-	-	10,00,000.00	-	-	-	-	-	-	-	-	-	-	-
2.5	Painting of 40 t capacity Rope drum hoist and Hoist complex	LS	-	-	1,00,000.00	1	100000	1,00,000	1	280000	2,80,000.00	0	500000	-	1	2,80,000.00
2.6	Installation of Radar Type Water level sensors	LS	-	-	1,00,000.00	-	-	-	-	-	-	-	-	-	-	-
3	Draft Tube Gate and Pressure Release Valve		-	-												
3.1	Supply, fabrication and installation of 3 sets of side guide, sill beam and back assembly for draft tube gate of size 3.35 mx 1.75 m made up of Stainless steel complete	LS	-	-	30,00,000.00	33.61	51,000	17,17,500	5.808	5,00,000	29,04,779.98	1.044	50,000	5,18,996.40	10.88	52,23,774.00
3.2	Refurbishment of Gate leaf including replacement of wheel bearing, Rubber Seals alongwith SS hardwares complete	LS	-	-	2,00,000.00	-	-	-	-	-	-	-	-	-	-	-
3.3	Sand Blast Cleaning and Painting of 4 set of Gate assembly of size 0.76 m x 1.75 m	LS	-	-	5,00,000.00	84.35	5304	2,17,755.60	421.29	5304	22,34,589.13	-77.35	5304	-2,55,663.72	333.9	17,83,271.00
3.4	Supply, fabrication and installation of 1 sets of 20t capacity electrically operated Rope Drum Hoist for Draft Tube Gate and 1 sets of 10t capacity Electrically operated Rope Drum Hoist of pressure release valve mounted on common handing platform complete. Chain set slip and piloting of the existing Gantry crane shall also be included	LS	-	-	2,10,00,000.00	-	-	-	-	-	-	-	-	-	-	-
3.5	Installation of Radar Type Water level sensors	LS	-	-	1,00,000.00	-	-	-	-	-	-	-	-	-	-	-
4	Tailrace Channel Stoplog Gate		-	-												
4.1	Supply, fabrication and installation of 2 sets side guide, sill beam and end assembly for gate size of 5.71 m x 3.5 m made up of Stainless steel complete	LS	-	-	40,00,000.00	13.11	51,000	6,70,894	13.093	51,000	40,20,503.34	0.055	51,000	3,47,131.06	13.184	54,67,666.40
4.2	Refurbishment of Stoplog Gate leaf of 5.71 m x 3.5 m including replacement of wheel bearing, Rubber Seals alongwith SS hardwares complete	LS	-	-	10,00,000.00	-	-	-	-	-	-	-	-	-	-	-
4.3	Sand Blast Blasting and Painting of 2 nos. of Gate assembly of 5.71 m x 3.5 m	LS	-	-	5,00,000.00	80.1	5304	3,69,972	385.94	5304	17,22,281.76	-290.672	5304	-12,99,880.39	179.268	9,92,301.47
4.4	Supply, fabrication and installation of 3 sets of 20t Capacity electrically operated Rope Drum Hoist mounted on steel trestle and hoist platform.	LS	-	-	30,00,000.00											
5	Design, fabrication, supply, transportation, fabrication and erection of 3 nos. of Hinge Type Gate of size 2.0 m x 2.0 m to be provided in Adit Plug each at Adit-II, Adit-III complete.	LS	-	-	40,00,000.00	-	-	-	-	-	-	-	-	-	-	-
6	Overhaul	LS	-	-	75,00,000.00											
	Not envisaged in DPR but subsequently added under BoQ															
1	Item No 1.0 Intake Trash Rack															
	Item No 1.1 Dismantling of concrete and removal of of existing Guide channels (for 6 Nos. of opening) including transportation of removed steel materials upto central store, all tools, tackles, plant, labour etc. complete as per technical specification	Cum	-	-	-	66	15000	9,90,000	31.324	28000	8,76,466.71	3.456	28000	97,056.00	34.56	9,60,549.60
	Item No 1.2 Design, Supply and installation of 1st stage Anchors in existing concrete alongwith chemical injection including all plants, tools, tackles, labour etc complete as per technical specification complete.	Nos	-	-	-	100	2100	90,600	144	3100	5,31,200.00	6.00	3000	-	150	5,31,200.00
7	Item No. 2.0 Intake Stoplog (1 Set)															

~523~

C27

J- Works: HM Equipment of Kopili Power House (Gates)

Sl. No.	Description of Items	Tendered (with respect to unaffected work)		Provision	Requisite	Variation due to						
		Qty.	Amt.			Price Escalation	Change in Design/Design	Underground Provisional sum provision	Addition /Deletion	Other causes (specify)	Quantum Variation	Remarks
1	2	10	11	12	13	14	15	16	17	18	19	20
1	Intake Trash Rack											
1.1	Supply, fabrication and installation of 6 nos of Guide channel from El. 577.00 m to El. 591.5 m made up of Stainless steel complete	0.0499	30,71,169.60	30,71,169.60	-			17,36,906.44			8,18,343.14	This item is executed under item no. 1.1 of the BoQ.
1.2	Repair and paining of 30 nos. of Trash Rack Panels of size 2.623 m x 2.908 m complete	100.0	23,63,472.00	23,63,471.09	-			20,02,982.07			3,60,171.63	This work is executed under item No. 2.1 of the BoQ.
2	Intake Bulkhead Gate			-								
2.1	Supply, fabrication and installation of side guide, sill beam and stock assembly for Intake Bulkhead gate of size 3.8x3.0 m x 1 e.m. made up of Stainless steel complete	-	99,60,000.00	-	99,00,000.00				-16,94,945.75		-16,39,283.75	This item is executed under item No. 2.3 of the BoQ& shown as under:
2.2	Refurbishment of Gate Leaf of size 3.8x3.0 m x 6 & m including, replacement of wheel bearing, Rubber Seals alongwith SS hardwares complete	-	6,00,500.00	-	5,50,000.00				-4,29,728.81		-96,271.19	Part of this work is executed under item No. 2.4 of the BoQ.
2.3	Sandblast Blasting and Painting of Gate assembly of size 3.8x3.0 m x 6.0 m	141.36	2,66,392.64	2,66,392.64	-			2,25,756.47			40,636.17	This item is executed under item No. 2.5 of the BoQ. Quantity deviation from BoQ is as per actual site execution. The site proposal is attached as HM_Annex-02.
2.4	Modification of 40 t capacity Rope drum hand hoisting replacement of wire rope, motor, seals, bearings, LCPs, Python etc. complete with appurtenances/other handmade etc.	-	50,00,000.00	-	50,00,000.00				-41,37,268.14		-7,62,731.86	This item is executed under item No. 3.1 of the BoQ.
2.4	Painting of 40 t capacity Rope drum hand and hoist bridge	1	35,000.00	35,000.00	-			20,508.47			14,491.53	This item is executed under item No. 3.2.2 of the BoQ.
2.5	Instrumentation of Radial Type Water level sensors	-	5,00,000.00	-	5,00,000.00				-4,23,728.81		-96,271.19	
3	Draft Tube Gate and Pressure Release Valve			-								
3.1	Supply, fabrication and installation of 4 nos of side guide, sill beam and stock assembly for draft tube gate of size 6.34 m x 1.75 m made up of Stainless steel complete	16.00	23,74,229.00	-	23,77,224.00			-18,12,001.01			-5,62,199.99	This item is executed under item No. 3.1 of the BoQ.
3.2	Refurbishment of Gate Leaf including, replacement of wheel bearing, Rubber Seals alongwith SS hardwares complete	-	13,00,000.00	-	12,00,000.00				-10,16,949.13		-1,83,050.87	Part of this work is executed under item No. 3.3 & 3.5 of the BoQ.
3.3	Sandblast Blasting and Painting of 4 nos of Gate assembly of size 6.34 m x 1.75 m.	17.19	5,01,385.60	5,01,385.60	-			1,12,911.86			38,344.74	This item is executed under item No. 3.4 of the BoQ. Quantity deviation from BoQ is as per actual site execution. The site proposal is attached as HM_Annex-03.
3.4	Supply, fabrication and installation of 4 nos of 10t capacity over-really operated Rope Drum Hoist for Draft Tube Gate and 4 nos of 10t capacity Electrically operated Rope Drum Hoist of pressure release valve mounted on semi-permanent/top platform complete. Dismantling and storing of the existing Gantry crane shall also be included	-	2,10,00,000.00	-	2,10,00,000.00				-1,77,95,810.17		-32,04,189.83	This item is executed under item Nos. 11, 12 & 13 of the BoQ.
3.5	Installation of Radial Type Water level sensors	-	5,00,000.00	-	5,00,000.00				-4,23,728.81		-96,271.19	
4	Draft Tube Control Shutter Gate											
4.1	Supply, fabrication and installation of 1 nos. side guide, sill beam and stock assembly for gate size of 5.75 m x 3.5 m made up of Stainless steel complete	32.384	14,37,034.40	14,37,034.40	-				12,43,888.81		2,93,145.59	This item is executed under item No. 20.2 of the BoQ.
4.2	Refurbishment of Dogs of Gate Leaf of 5.75 m x 3.5 m including, replacement of wheel bearing, Rubber Seals alongwith SS hardwares complete	-	10,00,000.00	-	10,00,000.00				-8,47,457.83		-1,52,542.17	Part of this work is executed under item No. 10.4 of the BoQ.
4.3	Sandblast Blasting and Painting of 2 nos. of Gates assembly of 5.75 m x 3.5 m.	178.368	91,301.47	91,301.47	-			78,721.59			12,579.89	Part of this work is executed under item No. 10.1of the BoQ. Quantity deviation from BoQ is as per actual site execution. The site proposal is attached as HM_Annex-04.
4.4	Supply fabrication and installation of 1 sets of 25 T capacity electrically operated Hoist Drum Hoist mounted on steel trusses and hoist platform.		60,00,000.00	-	50,00,000.00				-42,17,768.14		-7,82,711.86	Part of this work is executed under item No. 10.4 of the BoQ.
5	Design, fabrication, supply, transportation, fabrication and erection of 1 Nos. of Hinge Type Gate of size 2.0 m x 3.0 m to be provided in Add Plug each at Add-II & Add-III complete.	-	40,00,000.00	-	40,00,000.00				-33,89,805.51		-6,10,194.49	Not executed as per the suggestion of DSO.
6	Civil work		25,00,000.00	-	21,20,000.00				-17,94,917		-3,81,083	No civil work is executed in the HM Gate handled under MSW of KHEP.
	Not envisaged in DPR but subsequently added under BoQ											
7	Item No 1.0 Intake Trash Rack											
	Item No 1.1 Dismantling of concrete and removal of of existing Guide channels (for 6 Nos. of opening) including transportation of removed steel materials upto central store, all tools, tackles, plant, labour etc., complete as per technical specification	34.56	5,83,440.00	5,83,440.00	-				4,86,360.00		97,080.00	-
	Item No 1.2 Design, Supply and installation of 1st stage Anchoring existing concrete alongwith chemical injection including all plants, tools, tackles, labour etc complete as per technical specification complete.	144.00	3,31,200.00	3,31,200.00	-				2,80,355.76		50,844.24	
8	Item No. 2.0 Intake Staging (Steel)											

C28

A. Work: HM Equipment of Kwili Power House (Gates)

Sl. No.	Description of Items	Unit	Sanctioned Cost			As per BOQ			Anticipated Outturn as on May'21							
									Completed work upto May'21			Committed Liabilities/Balance work			Total	
			Qty	Rate	Amt	Qty	Rate	Amt	Qty	Rate	Amt	Qty	Rate	Amt	Qty	Amt
	Item No 2.1 Dismantling of concrete and removal of of existing 2nd stage embedded parts (for 1 Nos. of opening) comprising of sill beam, track beam, lintel beam, guide, bumper block etc including transportation of removed steel materials upto central store, all tools, tackles, plant, labour etc, complete as per technical specification	Cum	-	-	-	44.80	16284	729731.84	4.96	16284	80,768.64	0.00	16284	-	4.96	80,768.64
	Item No 2.2 Design, Supply and installation of 1st stage Anchors in existing concrete alongwith chemical injection including all plants, tools, tackles, labour etc complete as per technical specification complete	Nos	-	-	-	400	2570	1028000	134.8	2570	1,30,964.00	12.70	2320	29,104.00	137	1,60,340.00
	Item No 2.3 Design, supply, fabrication, transportation and installation 2nd stage embedded parts (for 1 nos. of opening) comprising of sill beam, track beam, lintel beam, guide, bumper block etc and other embedments as required as per technical specification complete. The work shall be inclusive of all tools, tackle, manpower, machinries etc.	MT	-	-	-	18.30	109000	1994700	2.583	109000	11,81,800.00	0.288	104000	1,45,152.00	1.871	11,66,984.00
	Item No 2.5 Sand blasting and painting of 1 sets of Slopings comprising of 5 elements with glass flakes epoxy as per technical specification complete including all tools, tackles, manpower, machinries etc.	Sqm	-	-	-	17,600	3500	61,600.0	336.64	3500	9,12,279.40	163.70	3500	1,90,078.00	170.446	1,16,399.84
II	Item No 3.0 Intake Bulk Head Gate (1 Nos.)															
	Item No 3.1 Dismantling of concrete and removal of of existing 2nd stage embedded parts (for 1 Nos. of opening) comprising of sill beam, track beam, lintel beam, guide, bumper block etc including transportation of removed steel materials upto central store, all tools, tackles, plant, labour etc, complete as per technical specification	Cum	-	-	-	83.7	16284	1363031.8	15.00	16284	1,95,305.12	3.60	16284	-	18.60	1,95,305.12
	Item No 3.2 Design, Supply and installation of 1st stage Anchors in existing concrete alongwith chemical injection including all plants, tools, tackles, labour etc complete as per technical specification complete.	Nos	-	-	-	440	2570	1130800	34.0	2570	6,43,865.00	9.00	2570	-	343	6,57,690.00
	Item No 3.3 Design, supply, fabrication, transportation and installation 2nd stage embedded parts (for 1 nos. of opening) comprising of sill beam, track beam, lintel beam, guide, bumper block etc and other embedments as required as per technical specification complete. The work shall be inclusive of all tools, tackle, manpower, machinries etc.	Kg	-	-	-	8.81	0.01602	0.1121481	3.810	109.0000	4,17,315.00	0.000	104.0000	46,000.00	0.00	4,63,600.00
	Item No 3.8 Design, fabrication, supply, installation testing and commissioning of steel liner on the upstream and downstream of the intake bulkhead head gate including all anchors/embedments to secure the liner in position. Also the work shall include all tools tackles, storage, transportation etc complete as per technical specification complete	MT	-	-	-	20	0.04000	1209.6000	4.8907	400000	42,09,226.34	0.7733	404000	4,67,691.64	1.733	46,76,918.40
III	Item No 5.0 Draft Tube Gate (4 Nos.)															
	Item No 5.1 Dismantling of concrete and removal of existing 2nd stage embedded parts (for 4 Nos. of opening) comprising of sill beam, track beam, lintel beam, guide, bumper block etc including transportation of removed steel materials upto central store, all tools, tackles, plant, labour etc complete as per technical specification	Cum	-	-	-	92.24	16284	1502039	23.73	16284	3,86,409.32	0.80	16284	13,027.20	24.53	3,99,436.52
	Item No. 5.2 Design, Supply and installation of 1st stage Anchors in existing concrete alongwith chemical injection including all plants, tools, tackles, labour etc complete as per technical specification complete	No	-	-	-	1299	2570	3337860	457.2	2570	11,75,004.00	93.80	2570	2,02,016.00	508.00	13,36,160.00
IV	Item No 9.0 Pressure Release Valve Gate (4 Nos.)															
	Item No 9.1 Dismantling of concrete and removal of existing 2nd stage embedded parts (for 4 Nos. of opening) comprising of sill beam, track beam, lintel beam, guide, bumper block etc including transportation of removed steel materials upto central store, all tools, tackles, plant, labour etc, complete as per technical specification	Cum	-	-	-	44.17	16130	712068.4	15.25	16130	1,18,800.00	0.00	14820	9,121.20	15.24	2,27,921.20
	Item No. 9.2 Design, Supply and installation of 1st stage Anchors in existing concrete alongwith chemical injection including all plants, tools, tackles, labour etc complete as per technical specification complete	No	-	-	-	881	2896	2124472	335.4	1896	6,35,478.40	35.60	1896	67,497.60	456	8,79,976.00
	Item No. 9.3 Design, supply, fabrication, transportation and installation 2nd stage embedded parts (for 4 nos. of opening) comprising of sill beam, track beam, lintel beam, guide, bumper block etc and other embedments as required as per technical specification complete. The work shall be inclusive of all tools, tackle, manpower, machinries etc.	MT	-	-	-	12.00	510000	6123000	6.80	510000	46,12,800.00	0.76	514000	3,91,456.00	7.55	50,00,256.00
	Item No. 9.4 Sand blasting and painting of 4 sets of Pressure Release Valve Gate with glass flakes epoxy as per technical specification complete including all tools, tackles, manpower, machinries etc.	sqm	-	-	-	32	3540	113280	86.74	3540	3,33,379.60	17.26	3540	63,662.40	81.76	2,97,042.00
	Item No 10.0 Tail Race Channel Outlet Gate (4 Nos.)															

~ 525 ~

C29

J- Work: HM Equipment of Kaali Power House (Gates)

Sl. No.	Description of Item	Variation with respect to sanctioned cost				Variation due to						
		Qty	Amt	Positive (+ ve)	Negative (- ve)	Site Condition	Change in Scope/Design	Inadequate Provision/ wrong provision	Addition/ deletion	Other reason specify	Statutory Levies	Remarks
	Item No 2.1 Dismantling of concrete and removal of of existing 2nd stage embedded parts (for 1 Nos. of opening) comprising of sill beam, track beam, lintel beam, guide, bumper block etc including transportation of removed steel materials upto central store, all tools, tackles, plant, labour etc, complete as per technical specification	4.39	80,768.64	80,768.64	-				68,408.00		12,360.64	
	Item No 2.2 Design, Supply and installation of 1st stage Anchors in existing concrete alongwith chemical injection including all plants, tools, tackles, labour etc complete as per technical specification complete	107.68	2,33,040.00	2,04,540.00	-				2,17,406.78		39,133.22	
	Item No 2.3 Design, supply, fabrication, transportation and installation 2nd stage embedded parts (for 1 nos. of opening) comprising of sill beam, track beam, lintel beam, guide, bumper block etc and other embedments as required as per technical specification complete. The work shall be inclusive of all tools, tackles, manpower, machineries etc.	3.87	14,46,864.00	14,46,864.00	-				12,09,237.83		2,37,726.17	
	Item No 2.4 Sand blasting and painting of 1 sets of Stoplogs consisting of 5 elements with glass flakes epoxy as per technical specification complete including all tools, tackles, manpower, machineries etc	179.64	6,04,200.48	6,33,200.48	-				5,22,333.82		99,866.66	Claim is in excess from BoQ in as per actual site execution. The site protocol is attached in HM_Annex-III
3	Item No 3.0 Intake Bulk Head Gate (1 Nos.)											
	Item No 3.1 Dismantling of concrete and removal of of existing 2nd stage embedded parts (for 1 Nos. of opening) comprising of sill beam, track beam, lintel beam, guide, bumper block etc including transportation of removed steel materials upto central store, all tools, tackles, plant, labour etc, complete as per technical specification	15.60	2,51,355.12	2,51,355.12	-				2,12,164.98		39,190.13	
	Item No 3.2 Design, Supply and installation of 1st stage Anchors in existing concrete alongwith chemical injection including all plants, tools, tackles, labour etc complete as per technical specification complete	323.00	6,93,855.00	6,93,855.00	-				5,87,165.69		1,06,689.31	
	Item No 3.3 Design, supply, fabrication, transportation and installation 2nd stage embedded parts (for 1 nos. of opening) comprising of sill beam, track beam, lintel beam, guide, bumper block etc and other embedments as required as per technical specification complete. The work shall be inclusive of all tools, tackles, manpower, machineries etc.	0.87	4,02,680.00	4,02,680.00	-				3,32,349.16		70,330.84	This item was covered in DPR under item No. 3.1 where however a lumpsum cost was considered in the DPR.
	Item No 3.4 Design, fabrication, supply, installation testing and commissioning of steel liner on the upstream and downstream of the intake bulkhead head gate including all anchor/embedments to secure the liner in position. Also the work shall include all tools tackles, storage, transportation etc. complete as per technical specification complete.	7.731	46,76,810.48	46,76,810.48	-				39,53,492.17		7,23,318.31	
11	Item No 8.0 Draft Tube Gate (4 Nos.)											
	Item No 8.1 Dismantling of concrete and removal of existing 2nd stage embedded parts (for 4 Nos. of opening) comprising of sill beam, track beam, lintel beam, guide, bumper block etc including transportation of removed steel materials upto central store, all tools, tackles, plant, labour etc,complete as per technical specification	24.59	3,99,446.93	3,99,446.93	-				3,38,514.00		60,932.93	
	Item No. 8.2 Design, Supply and installation of 1st stage Anchors in existing concrete alongwith chemical injection including all plants, tools, tackles, labour etc complete as per technical specification complete	604.00	10,36,160.00	10,26,160.00	-				8,89,627.13		1,36,532.88	
12	Item No 9.0 Pressure Release Valve Gate (4 Nos.)											
	Item No 9.1 Dismantling of concrete and removal of existing 2nd stage embedded parts (for 4 Nos. of opening) comprising of sill beam, track beam, lintel beam, guide, bumper block etc including transportation of removed steel materials upto central store, all tools, tackles, plant, labour etc, complete as per technical specification	13.58	2,24,811.20	2,24,811.20	-				1,90,940.00		33,871.20	
	Item No. 9.2 Design, Supply and installation of 1st stage Anchors in existing concrete alongwith chemical injection including all plants, tools, tackles, labour etc complete as per technical specification complete	354.00	6,76,974.00	6,76,974.00	-				5,72,013.56		1,02,960.44	
	Item No. 9.3 Design, supply, fabrication, transportation and installation 2nd stage embedded parts (for 4 nos. of opening) comprising of sill beam, track beam, lintel beam, guide, bumper block etc and other embedments as required as per technical specification complete. The work shall be inclusive of all tools, tackles, manpower, machineries etc.	7.73	89,68,190.00	9038,190.00	-				80,95,464.45		9,32,945.55	
	Item No. 9.4 Sand blasting and painting of 4 sets of Pressure Release Valve Gate with glass flakes epoxy as per technical specification complete including all tools, tackles, manpower, machineries etc.	91.76	2,09,410.34	2,09,410.34	-				1,91,316.00		18,094.34	Claim is in excess from BoQ in as per actual site execution. The site protocol is attached in HM_Annex-III
13	Item No 10.0 Tail Race Channel Outlet Gate (4 Nos.)											

~ 526 ~

C30

J- Work: HM Equipment of Kwoli Power House (Extn)

Sl. No.	Description of Item	Unit	Contractual Cost			As per BOQ			As per Revised Estimate at 3Q (Q4 FY)							
									Completed works up to 3Qtr Q4			Committed Liabilities/Balance work			Total	
			Qty	Rate	Amt	Qty	Rate	Amt	Qty	Rate	Amt	Qty	Rate	Amt	Qty	Amt
	Item No. 10.1 Design, Supply and installation of 1st stage Anchors on existing concrete alongwith chemical injection including all plants, tools, tackles, labour etc complete as per technical specification complete.	Nos.	-	-	-	520	3000	1560000	458.00	3000	8,25,000.00	6.00	3000	-	-458	8,25,000.00
12	Item No. 11.0 Rope Drum Hoist for Draft Tube Gate (4 Nos)		-	-												
	Item No. 11.1 Dismantling of Existing Gantry crane including rail track and other complete and transportation of the same to central store of NEEPCO	LS	-	-	-	1	250000	250000	0.5	250000	1,47,500.00	0.50	250000	1,47,500.00	1	2,95,000.00
	Item No. 11.2 Design, manufacture, inspection, shop assembly, painting, transportation, site storage & site erection, testing & commissioning (including provision for all labour, plant & material) of electrically operated rope drum hoist of capacity 25 ton (approx.) with provision of manual operation with complete accessories in accordance with the specification	Set	-	-	-	4	4390000	17560000	3.0	4390000	1,33,84,300.00	0.00	4390000	17,56,000.00	4	1,75,60,000.00
13	Item No. 12.0 Rope Drum Hoist for Pressure Release Valve Gate (4 Nos):- Design, manufacture, inspection, shop assembly, painting, transportation, site storage & site erection, testing & commissioning (including provision for all labour, plant & material) of electrically operated rope drum hoist of capacity 10 ton (approx.) with provision of manual operation with complete accessories in accordance with the specification	Set	-	-	-	4	2065000	8260000	3.0	2065000	72,28,000.00	0.40	2000000	8,00,000.00	4	80,28,000.00
14	Item No. 13 Common Hoisting Platform for Rope drum drum hoist of Draft Tube & PRV Gate- Design, supply, fabrication, transportation, painting, erection and commissioning of 4 sets of hoist platform including textile column, bearings, guard rails, ladders etc complete as per technical specification	MT	-	-	-	32	227500	7280000	31.4400	227500	98,38,956.00	0.6029	227500	1371.441.00	32.00	1,07,10,000.00
15	Item No. 14 Rope Drum Hoist for Tail Race Channel Outlet Gate (2 Nos)- Design, manufacture, inspection, shop assembly, painting, transportation, site storage & site erection, testing & commissioning (including provision for all labour, plant & material) of electrically operated rope drum hoist of capacity 25 ton (approx.) with provision of manual operation with complete accessories in accordance with the specification	Set	-	-	-	2	4390000	8780000	1.8	4390000	79,02,000.00	0.2	4390000	8,78,000.00	2.00	87,80,000.00
16	Item No. 15 Hoisting Platform for Rope drum drum of Tail Race Channel Outlet Gate- Design, supply, fabrication, transportation, painting, erection and commissioning of 2 sets of hoist platform including textile column, bearings, guard rails, ladders etc complete as per technical specification	MT	-	-	-	32	243750	7800000	28.1198	243750	68,53,484.81	3.8181	243750	9,30,828.43	32.182	78,84,313.24
17	Item No. 16 Design, manufacturing, supply and installation at site of the following instrumentation & control equipment as per technical specification complete		-	-	-											
	Item No. 16.1 A local control board for following equipments		-	-												
	Item No. 16.1.1 Intake Gate	Set	-	-	-	1	370000	370000	0.7	350000	2,62,500.00	0.3	370000	1,11,000.00	1	3,73,500.00
	Item No. 16.1.2 Radial Gate	Set	-	-	-	2	810000	1620000	2.1	810000	17,10,000.00	0.9	810000	7,31,000.00	3	24,41,000.00
	Item No. 16.1.4 Draft Tube Gate	LS	-	-	-	1	950000	950000	3.0	950000	14,25,000.00	0.4	950000	3,84,000.00	4	18,07,000.00
	Item No. 16.3 Pressure release valve gate	LS	-	-	-	1	440000	440000	3.0	440000	13,87,000.00	0.4	440000	1,71,000.00	4	15,58,000.00
	Item No. 16.2.1 Tail Race Outlet Gate	Set	-	-	-	1	370000	370000	1.4	370000	5,29,000.00	0.6	370000	2,21,000.00	2	7,50,000.00
	Item No. 16.3 Design, supply, fabrication and installation of operation facilities in Intake Control Building complete in all respect as per specification	Set	-	-	-	1	3110000	3110000	0.7	3110000	21,77,000.00	0.3	3110000	9,33,000.00	1	31,10,000.00
	Item No. 16.4 Water Level Measuring system to be installed at the following locations:															
	Item No. 16.4.1 Two (2) Nos. at intake area for measuring screen head loss and intake sluice condition	Nos.	-	-	-	2	135000	270000	1.4	135000	2,70,000.00	0.6	135000	98,280.00	2	3,27,000.00
	Item No. 16.4.3 One (1) at tail race end for measurement of water level at tail race side	Set	-	-	-	1	163000	163000	0.7	163000	1,14,100.00	0.3	163000	48,900.00	1	1,63,000.00
	Item No. 16.5 Digital and analogue type of gate position indicator in each of the following locations alongwith all necessary interconnection complete as per technical specification		-	-	-											
	Item No. 16.5.1 Intake Gate	Set	-	-	-	1	61900	61900	0.7	61900	57,330.00	0.3	61900	24,570.00	1	81,900.00
	Item No. 16.5.2 Under Sluice Gate	Set	-	-	-	2	61900	61900	1.4	61900	1,14,660.00	0.6	61900	49,140.00	2	1,63,800.00
	Item No. 16.5.4 Draft Tube Gate	Set	-	-	-	1	61900	61900	2.8	61900	1,25,330.00	1.2	61900	98,280.00	4	3,17,600.00
	Item No. 16.5.5 Pressure release valve gate	Set	-	-	-	1	61900	61900	2.8	61900	1,25,330.00	1.2	61900	98,280.00	4	3,17,600.00
	Item No. 16.5.6 Tail Race Outlet Gate	Set	-	-	-	1	61900	61900	1.4	61900	1,14,660.00	0.6	61900	49,140.00	2	1,63,800.00

~ 527 ~

C31

J- Stock: HM Equipment of Kopili Power House (Gates)

Sl. No.	Description of Items	Variation (with respect to contractual work)				Variation due to						
		Qty.	Amt.	Positive (+ve)	Negative (-ve)	Price Escalation	Change in Scope/Design	Inadequate Provision/ cost provision	Additional Deletion	Other causes (specify)	Statutory Levies	Remarks
	Item No. 11.1 Design, Supply and installation of Tail siege Anchors in existing concrete alongwith chemical injection including all plants, tools, tackles, labour etc complete as per technical specification complete.	418.00	5,23,140.00	5,23,140.00	-				7,68,200.00		2,45,059.13	
ii)	Item No. 11.2 Rope Drum Hoist for Draft Tube Gate (4 Nos.)											
	Item No. 11.1 Dismantling of Existing Gantry crane including rail track and other complete and transportation of the same to central store of NEEPCO	1.00	2,50,000.00	2,50,000.00	-				2,50,000.00		20,000.00	
	Item No. 11.2 Design, manufacture, inspection, shop assembly, painting, transportation, site storage & site erection, testing & commissioning (including provision for all labour, plant & material) of electrically operated rope drum hoist of capacity 25 ton (approx.) with provision of manual operation with complete accessories in accordance with the specification	4.00	1,75,00,000.00	1,75,00,000.00	-				1,48,91,911.91		23,78,664.67	
iii)	Item No. 12.0 Rope Drum Hoist for Pressure Release Valve Gate (4 Nos.)- Design, manufacture, inspection, shop assembly, painting, transportation, site storage & site erection, testing & commissioning (including provision for all labour, plant & material) of electrically operated rope drum hoist of capacity 10 ton (approx) with provision of manual operation with complete accessories in accordance with the specification	4.00	80,32,000.00	80,32,000.00	-				69,06,771.64		12,85,228.36	
iv)	Item No. 13 Common Hoisting Platform for Rope drum drum hoist of Draft Tube & PRV Gate- Design, supply, fabrication, transportation, painting, erection and commissioning of 4 sets of hoist platform including trestle columns, bearings, guard rails, ladders etc complete as per technical specification	68.00	1,07,10,000.00	1,07,10,000.00	-				90,76,171.19		16,33,728.81	
v)	Item No. 14 Rope Drum Hoist for Tail Race Channel Outlet Gate (2 Nos)- Design, manufacture, inspection, shop assembly, painting, transportation, site storage & site erection, testing & commissioning (including provision for all labour, plant & material) of electrically operated rope drum hoist of capacity 20 ton (approx.) with provision of manual operation with complete accessories in accordance with the specification	2.00	67,50,000.00	67,50,000.00	-				71,40,077.97		12,10,922.03	
vi)	Item No. 15 Hoisting Platform for Rope drum drum of Tail Race Channel Outlet Gate- Design, supply, fabrication, transportation, painting, erection and commissioning of 2 sets of hoist platform including trestle columns, bearings, guard rails, ladders etc complete as per technical specification	22.00	32,04,094.12	32,04,094.12	-				27,15,095.17		4,88,798.95	
vii)	Item No. 16 Design, manufacturing, supply and installation at site of the following instrumentation & control equipment as per technical specification complete											
	Item No. 16.1 A local control board for following equipments											
	Item No. 16.1.1 Intake Gate	1.00	3,76,000.00	3,76,000.00	-				3,28,588.09		51,841.91	
	Item No. 16.1.2 Radial Gate	3.00	24,37,000.00	24,37,000.00	-				20,82,263.25		3,54,736.75	
	Item No. 16.1.4 Draft Tube Gate	4.00	15,67,600.00	15,67,600.00	-				13,45,124.73		2,42,175.27	
	Item No. 16.2 Pressure release valve gate	4.00	17,94,000.00	17,94,000.00	-				14,94,918.41		2,91,081.59	
	Item No. 16.2.1 Tail Race Outlet Gate	2.00	7,56,000.00	7,56,000.00	-				6,48,677.97		1,15,322.03	
	Item No. 16.3 Design, supply, fabrication and installation of operation facilities in Intake Control Building complete in all respect as per specification	1.00	31,10,000.00	31,10,000.00					25,35,263.04		4,74,436.96	
	Item No. 16.4 Water Level Measuring system to be installed at the following locations											
	Item No. 16.4.1 Two (2) Nos. at intake area for measuring screen head loss and intake bulkhead condition	2.00	3,77,600.00	3,77,600.00					3,21,657.03		55,942.97	
	Item No. 16.4.3 One (1) at tail race are for measurement of water level at tail race side	1.00	1,03,000.00	1,03,000.00					1,26,313.50		21,956.61	
	Item No. 16.5 Digital and analogue type of gate position indicator at each of the following locations alongwith all necessary interconnection complete as per technical specifications											
	Item No. 16.5.1 Intake Gate	1.00	81,900.00	81,900.00	-				69,206.78		12,693.22	
	Item No. 16.5.3 Under Sluice Gate	2.00	1,44,600.00	1,63,600.00	-				1,38,313.56		25,286.44	
	Item No. 16.5.4 Draft Tube Gate	4.00	3,27,600.00	3,27,600.00	-				2,77,427.12		49,972.88	
	Item No. 16.5.5 Pressure release valve gate	4.00	3,27,600.00	3,27,600.00	-				2,77,427.12		49,972.88	
	Item No. 16.5.6 Tail Race Outlet Gate	2.00	1,63,800.00	1,63,800.00	-				1,38,913.56		24,986.44	

C32

J) Work: HM Equipment at Kopili Power House (Gates)

Sl. No.	Description of Items	Unit	Sanctioned Cost			As per BOQ			As per Revised Estimate at May'24 Pr.							
			Qty	Rate	Amt	Qty	Rate	Amt	Completed work up to Mar'21			Committed Liabilities/Balance work			Total	
									Qty	Rate	Amt	Qty	Rate	Amt	Qty	Amt
	Item No. 17 Design, manufacturer & supply at site of the spare parts as per list given in Part Tech. Specifications.	LS	-	-	-	1	7718000	7718000	1.00	7718000	7718000.00	0.0	7718000	0.00	1	77,18,000.00
	Item No. 18 Miscellaneous metal works like cateway, ladder, chequered plate, covers etc fabricated with rolled steel section, pipes, tubes of general purpose structural steel as per specification and as directed by Engineer in Charge.	MT	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	Extra Items		-	-	-											
22	Extra Item No 1.0 Conduction of Ultrasonic Testing on fresh rock panels of Umrong Intake.	Spots	-	-	-	-	-	-	96	1160	1,13,280.00	0.00	1160	0.00	96	1,13,280.00
23	Extra Item No 2.0 Dewatering of pad wls of Umrong Intake to facilitate repair works of HM components of Umrong System	KWH	-	-	-	-	-	-	46851	40	45,45,315.00	0.00	40	0.00	46851	45,45,315.00
	Extra Item No 3.0 Design, Fabricaion, Supply, Installation, testing and commissioning of Stainless-steel liner in 2 Nos. of Under sluice Sloping gate groove (both L.H.S & R.H.S) including all anchors to secure the liner in position inclusive of all tools, tackles, labour etc		-	-	-	-	-	-	3,425	604800	20709[illegible].20	0.00	604800	0.00	1,285	20,93,051.20
	Extra Item No 4.0 Chemical anchoring of foundation bolts of base plate for erection of columns for TRC Rope Drum Hoist using Injectable Epoxy Mortar								120.00	21680	2600[illegible].00	0.00	21680	0.00	120.000	26,00,000.00
	Sub Total [J-Gates] =				4,15,00,000.00			12,93,44,[illegible]76.12			19,61,91,895.20			1,02,24,040.72		11,96,16,856.16

11,96,16,856.16

C33

A Work: HM Equipment at Kwai II Power House (Gates)

Sl. No.	Description of Items	Variation with respect to agreement work				Variation due to						
		Qty	Amt	Positive (+ ve)	Negative (- ve)	New Existence	Change in Design/Drawings	Inadequate Provision in the given items	Additions (Deletion)	Other causes (specify)	Statutory Levies	Remarks
	Item No. 17 Design, manufacturer & supply at site of the spare parts as per list given in Part Tech. Specifications	1.00	77,10,000.00	77,10,000.00					65,63,677.00		11,77,322.00	
	Item No. 18 Miscellaneous metal works like railway, ladder, chequered plate, covers are fabricated with rolled steel section, pipes, tubes of general purpose structural steel as per specification and as directed by Engineer in Charge.	3.13	7,00,940.00	7,00,940.00					5,93,478.42		1,06,461.58	
	Extra Items											
20	Extra Item no 1.0 Conduction of Ultrasonic Testing on main rack panels of Urmrong intake	36.00	1,11,390.00	1,11,390.00					94,282.00		17,107.00	Copy of Notesheet for technical approval is attached as HM_Annex-27 & Copy of approval order is attached as HM_Annex-28.
21	Extra Item No 2.0 Dewatering of pool u/s of Urmrong intake to facilitate repair works all HM components of Urmrong System	46,811.000	49,41,315.00	49,41,315.00					42,82,470.00		6,62,844.96	
	Extra Item No 3.0 Design, Fabrication, Supply, Installation, testing and commissioning of Stainless-steel liner in 2 No. of Under Sluice Stopplog gate groove (both L.H.S & R.H.S) including all anchors to secure the liner in position inclusive of all rivets, bolt&nut, rubber etc	1.440	22,95,051.20	22,95,051.20					17,79,645.49		3,20,841.71	Copy of Noteshoot administrative approval is attached as HM_Annex-29, Copy of Noteshoot for Technical approval is attached as HM_Annex-30 & Copy of approval order is attached as HM_Annex-31.
	Extra Item No 4.0 Chemical anchoring of foundation bolts of base plate for erection of columns for TRC Rope Drum Hoist using Injectable Epoxy Mortar	200.00	13,33,000.00	13,33,000.00					11,45,762.71		1,87,237.29	Copy of Noteshoot for Technical approval is attached as HM_Annex-32 & Copy of approval order is attached as HM_Annex-33.
	Sub Total(I+Extra) =		5,47,14,450.12	19,05,85,881.20	5,73,75,330.00			19,45,111.41	5,45,14,614.20		83,45,606.67	

5,47,14,450.12

~ 530 ~

E Gate

C34

J-POWER PLANT CIVIL WORKS (HRT, Penstock & TH)

Sl. No.	Sl No.(as per SOD)	Description of Items	Unit	CEA Vetted Cost /SOD			As per Realised Cost Rollervale at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	6	9	7	8	9	10	11	12	13	14	15	16
1	1	1. Dewatering													
2	1.1	1.1 Dewatering of Surface/ Underground Construction Sites including all construction works, labour plant and materials necessary to keep the construction sites including all construction works, labour, plant and materials necessary for dewatering. Complete in all respect as per technical specification, drawings and as directed by the Engineer-in-Charge													
3	1.1.1	1.1.1 Dewatering of Surface Construction Sites including all labour, plant, materials, installation, operation, power supply, maintenance and removal of pumping equipments from site	Mnths	3600.00	65.00	3,25,000	0.00	00.00	0.00		60.00	0.00	5	65.00	0
4	1.1.2	1.1.2 Dewatering of Underground Construction Sites including all labour, plant, materials, installation, operation, power supply, maintenance and removal of pumping equipments from site	Mnths	3600.00	65.00	3,25,000	29,165.00	65.00	1833784.00	0.00	60.00	0.00	28,160	65.00	1833784.0
5	2	2. Dismantling										0.00	5	0.00	0
6	2.1	2.1 Dismantling of Designated Portion of existing Anchor Blocks with Core Cutting including dismantling of RCC alongwith cutting of Reinforcement & dismantling of PCC carrying all labour, materials, equipments and services for successful completion of the works as shown in the construction drawings, as per the technical specification or as directed by the Engineer-in-Charge	sqm	4850.00	28,000.00	13,52,50,500	7,790.780	28,000.00	21811384.00	0.00	28,000.00	0.00	7,790	28000.00	21811384.0
7	2.2	2.2 Dismantling of Structures (excluding Dismantling of designated portions of Anchor Blocks with Core Cutting): Dismantling & Demolishing of existing structures including cracking of steel to bars and disposal of unserviceable materials within 50m lead as per the direction of the Engineer-in-Charge By Manual Means/ Mechanical Means													
8	2.2.1	2.2.1 Dismantling Brick Work manually by mechanical means including stacking of serviceable material and disposal of unserviceable materials within 50m lead as per direction of Engineer-in-Charge In Cement Mortar	cum	50.00	1,400.00	70,000	32.922	1,400.00	46090.80	0.00	1,400.00	0.00	33	1400.00	46,091
9	2.2.2	2.2.2 Reinforced Cement Concrete	cum	1150.00	2,568.72	44,00,824	172.742	2,568.72	443759.33	0.00	2,568.72	0.00	114	2568.72	440160.240
10	2.2.3	2.2.3 Dismantling Tile Works on Floors & walls laid in cement Mortar including stacking material within 50m lead as per the direction of the Engineer-in-Charge													
11	2.2.3.1	2.2.3.1 Flat Thickness of Tiles 10mm to 20mm	sqm	600.00	60.00	33,000	234.719	60.00	14103.55	0.00	60.00	0.00	235	60.00	14,736
12	2.2.3.2	2.2.3.2 Flat Thickness of Tiles above 20mm and upto 40mm	sqm	1500.00	63.00	1,24,500	3.00	60.00	0.00		60.00	0.00	0	60.00	0
13	2.3	2.3 Cost of haulage excluding loading & unloading for removal of dismantled concrete pieces: Kutcha Track beyond the initial lead of 50m (Lead = 2.0 km)	ton/km	2250.00	80.00	2,80,000	05.282	80.00	7647.30	0.00	80.00	0.00	96	80.00	7,647

2531

C35

~ 532 ~

POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	BOQ No. (as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Satisfactory Levels	
1	2	3	17	18							9
1	1	1. Dewatering									
2	1.1	1.1 Dewatering of Surface/ Underground Construction Sites including all construction works, labour plant and materials necessary to keep the construction sites including all construction works, labour, plant and materials necessary for dewatering. Complete in all respect as per technical specification, drawings and as directed by the Engineer-in-Charge									
3	1.1.1	1.1.1 Dewatering of Surface Construction Sites including all labour, plant, materials, installation, operation, power supply, maintenance and removal of pumping equipments from site	0	335000			0.00	-2704223.73		-4455% 2F	Item has not been executed due to site condition requiring Dewatering of Underground Construction sites only
4	1.1.2	1.1.2 Dewatering of Underground Construction Sites including all labour, plant, materials, installation, operation, power supply, maintenance and removal of pumping equipments from site	1595764	0			1276671.19	0		229052.81	Inadequate provision in BOQ. Work completed.
5	2	2. Dismantling	0	0			0.00	0			
6	2.1	2.1 Dismantling of Designated Portion of existing Anchor Blocks with Core Cutting including dismantling of RCC alongwith cutting of Reinforcement & dismantling of PCC covering all labour, materials, equipments and services for successful completion of the works as shown in the construction drawings, as per the technical specification or as directed by the Engineer-in-Charge	8791384	0			7465254.24	0		1341030.76	EE has settled the dispute in respect of undertaken/executed scope of work of cutting removal and disposal of designated portion of Anchor Blocks No. 2,3,4,5 and 7 or / upto of Penstocks nt 1 and 2 by the Contractor as per their desired and submitted methology in absence of pre-defined methology (Cl no. of Work) in the Technical Specification in Contract Agreement.
7	2.2	2.2 Dismantling of Structures (excluding Dismantling of designated portions of Anchor Blocks with Core Cutting) Dismantling & Demolishing of existing structures including working at steel re bars and disposal of unserviceable materials within 50m lead as per the direction of the Engineer-in-Charge By Manual Means/ Mechanical Means									
8	2.2.1	2.2.1 Dismantling Brick Work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable materials within 50m lead as per direction of Engineer-in-Charge In Cement Mortar	0	23068.3			-20082.63			3047.17	Item Executed as per site requirement. Work Completed
9	2.2.2	2.2.2 Reinforced Cement Concrete	0	3851554.61			-3348351.36			-503703.25	Item Executed as per site requirement. Work Completed
10	2.2.3	2.2.3 Dismantling Tile Works on Floors & walls laid in cement Mortar including stacking material within 50m lead as per the direction of the Engineer-in-Charge									
11	2.2.3.1	2.2.3.1 For Thickness of Tiles 10mm to 20mm	0	15284.65			-12935.64			-2326.41	Item Executed as per site requirement. Work Completed
12	2.2.3.2	2.2.3.2 For Thickness of Tiles above 20mm and upto 40mm	0	124408			0.00	-110508.47		-13881.53	Item Executed as per site requirement. Work Completed
13	2.3	2.3 Cost of haulage including loading & unloading for removal of dismantled concrete pieces. Kaleshu Track beyond the initial lead of 50m (Lead = 2.0 km)	0	252302.04			-213856.17			-38484.87	Item Executed as per site requirement. Work Completed

C36

J-POWER PLANT CIVIL WORKS (HRT, Penstock & TR)

Sl. No.	Sl No (as per BOQ)	Description of Items	Unit	CEA Vetted Cost /BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities/Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
14	2.4	2.4 Chipping of concrete Chipping of unsound and removal of all loose and friable materials followed by proper cleaning and removal of foreign materials, complete in all respect with all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	sqm	6000.00	280.00	17,40,000	280.757	280.00	77338.32	0.00	280.00	0.00	281	280.00	77,360
12	3	3. Clearing of Debris										0.00			
	3.1	3.1 Clearing of Debris along the Penstock Alignment: Clearing of Debris including Loading and unloading by mechanical means, transportation & disposal upto the initial lead of 1.0km	cum	7560.00	220.00	16,63,200	16,401.040	220.00	3608228.80	0.00	220.00	0.00	16,401	220.00	3608228.80
17	3.2	3.2 Cost of haulage excluding loading & unloading for removal of debris along penstock alignment Kalaba Track beyond the initial lead of 1.0km (Lead = 2.0 km)	cum/km	7560.00	80.00	6,00,000	0.00	80.00	0	0	80.00	0.00	0	80	0
18	3.3	3.3 Clearing of Debris in HRT: Clearing of Debris including Loading and unloading by mechanical means, transportation & disposal upto the initial lead of 1.0km	cum	600.00	275.00	1,37,500	449.690	275.00	123637.39	0.00	275.00	0.00	449	275.00	123637.250
19	3.4	3.4 Cost of haulage excluding loading & unloading for removal of debris in HRT: Kalaba Track beyond the initial lead of 1.0km (Lead = 2.0 km)	cum/km	600.00	80.00	48,000	0.00	80.00	0	0	80.00	0.00	0	80	0
20	3.5	3.5 Clearing of Debris in Power House: Clearing of Debris including loading &unloading by mechanical means, transportation & disposal upto initial lead of 1.0km	cum	200.00	205.00	41,000	526.829	205.00	108002.60	0.00	205.00	0.00	527	205.00	108001.990
21	3.6	3.6 Cost of haulage excluding loading & unloading for removal of debris along penstock alignment/Kalaba Track beyond the initial lead of 1.0km (Lead = 2.0 km	cum/km	200.00	80.00	16,000	0.00	80.00	0.00	0.00	80.00	0.00	0	80.00	0
22	4	4. Surface Excavation										0.00	0	0.00	0
23	4.1	4.1 Excavation using manual means: Excavation using manual means including loading and conveying of excavated material to disposal areas with all lifts & leads upto 1000m	cum	2160.00	350.00	8,76,000	1,206.80	350.00	422379.80	0.00	350.00	0.00	1,207	350.00	422379.800
24	4.2	4.2 Excavation using mechanical means: Excavation using mechanical means including cutting, loading and carrying of excavated materials to disposal areas with all lifts & leads upto 1000m	cum	5500.00	140.00	7,70,000	2,378.55	140.00	332997.00	0.00	140.00	0.00	2,379	140.00	332997.0
25	4.3	4.3 Cost of haulage excluding loading & unloading for removal of excavated muck: Kalaba Track beyond the initial lead of 1.0km	cum/km	16800.00	40.00	6,40,000	0.00	40.00	0.00	0.00	40.00	0.00	0	40.00	0
26	4.4	4.4 Earth Sand Filling Earth sand Filling in Plinth in layers not more than 150mm thick including necessary sarriage, watering, ramming, etc. complete as directed and specified including payment of land compensation, crop royalty, sales tax and other duties and taxes as may be necessary. With earth or silt or sand obtained by head load with lead upto 50m and lift upto 2m	cum	150.00	140.00	21,000	362.71	140.00	50829.20	0.00	140.00	0.00	363	140.00	50,829

C37

J.POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
14	2.6	2.6 Chipping of concrete: Chipping of concrete and removal of all loose and friable materials followed by proper cleaning and removal of foreign materials, concrete in all respect with all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	0	992994.47			-1429017.35			250423.13	Item Executed as per site requirement. Work Completed
15	3	3. Cleaning of Debris									
	3.1	3.1 Cleaning of Debris along the Penstock Alignment: Cleaning of Debris including Loading and unloading by mechanical means, transportation & disposal upto the initial lead of 1.5km	1058228.8	0			1669515.93	0		295712.67	Balance quantity executed in surface preparation works between Anchor Block 7 to Anchor Block 8 as per site condition. Work Completed
17	3.2	3.2 Cost of haulage excluding loading & unloading for removal of debris along penstock alignment. Kutcha Track beyond the initial lead of 1.0km (Lead = 2.0 km)	0	60000			0.00	-508474.58		-91525.42	Item not required to be Executed as per site condition
18	3.3	3.3 Cleaning of Debris in HRT: Cleaning of Debris including Loading and unloading by mechanical means, transportation & disposal upto the initial lead of 1.5km	85637.25	0			85540.64	0		14697.31	Inadequate provision in BOQ. Work Completed
19	3.4	3.4 Cost of haulage excluding loading & unloading for removal of debris in HRT: Kutcha Track beyond the initial lead of 1.0km (Lead = 2.0 km)	0	40000			0.00	-33898.31		-6101.69	Item not required to be Executed as per site condition.
20	3.5	3.5 Cleaning of Debris in Power House: Cleaning of Debris including loading & unloading by mechanical means, transportation & disposal upto mass haul cl 1.0km	67801.695	0			56761.35	0		10228.64	Inadequate provision in BOQ. Work Completed
21	3.6	3.6 Cost of haulage excluding loading & unloading for removal of debris along penstock alignment/Kutcha Track beyond the initial lead of 1.0km (Lead = 2.0 km	0	15000			0.00	-12881.32		-2440.68	Item not required to be Executed as per site condition
22	4	4. Surface Excavation	0	0			0.00	0			
23	4.1	4.1 Excavation using manual means: Excavation using manual means including loading and carrying of excavated material to disposal areas with all lifts & leads upto 1000m	0	421109.55			-356891.83			64218.72	Item Executed as per site requirement. Work Completed
24	4.2	4.2 Excavation using mechanical means: Excavation using mechanical means including cutting, loading and carrying of excavated material to disposal areas with all lifts & leads upto 1500m	0	437000			-370341.53			-66658.47	Item Executed as per site requirement. Work Completed
25	4.3	4.3 Cost of haulage excluding loading & unloading for removal of excavated muck. Kutcha Track beyond the initial lead of 1.0km	0	940000			0.00	-9402372.88		-97627.12	Item not required to be Executed as per site condition.
26	4.4	4.4 Earth/ Sand Filling Earth/ sand Filling in Patch in layers not more than 150mm thick including necessary sahalge, watering, ramming, etc. complete as directed and specified including payment of land compensation, seed royalty, sales tax and other duties and taxes as may be neccessary; With cartin or set or sand obtained by head load with lead upto 60m and lift upto 3m	295252	1			25063.72	0		4063.47	Inadequate provision in BOQ. Work Completed

C38

J-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(as per BOQ)	Description of Items	Unit	CSA Vetted Cost/BOQ			Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
27	4.5	4.5 Random Backfilling Backfilling behind penstock as per drawings & technical Specification. Complete in all respect with all materials, labourer, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	cum	1500.00	1,740.00	26,10,000	5,996.670	1,740.00	10434205.80	0.00	1,740.00	0.00	5,997	1740.00	10434205.8.0
28	5	5. Generating Works									0.00	0.00	0	0	0
29	5.1	5.1 Plain Cement Concrete									0.00	0.00	0	0	0
30	5.1.1	5.1.1 Plain Cement Concrete in Anchor Blocks Plain Cement Concrete in open foundation complete as per drawings & Technical Specification including steel shuttering formwork Without Plasticizer PCC Grade M15	Cum	25.00	5,500.00	1,37,500	19.140	5,500.00	105270.00	0.00	5,500.00	0.00	19	5500.00	105270.0
31	5.1.2	5.1.2 Plain Cement Concrete along Penstock Alignment Plain Cement Concrete in open foundation complete as per drawings & Technical Specification including steel shuttering formwork Without Plasticizer PCC Grade M15	cum	28500.00	5,500.00	15,67,50,000	32,758.452	5,560.00	180127485.00	0.00	5,500.00	0.00	32,759	5660.00	180127485.0
32	5.1.3	5.1.3 Plain Cement Concrete in HRT. Plain Cement Concrete complete as per drawings & Technical Specification including steel shuttering formwork. Without Plasticizer PCC Grade M20	cum	1000.00	5,700.00	57,00,000	0.00	5,700.00	0.00	0.00	5,700.00	0.00	0	5780.00	0
33	5.1.4	5.1.4 Plain Cement Concrete in Power House									0.00	0.00	0	0.00	0
34	5.1.4.1	5.1.4.1 Plain Cement Concrete: Plain Cement Concrete in open foundation complete as per drawings & Technical Specification including steel shuttering formwork. Without Plasticizer PCC Grade M15	cum	50.00	5,500.00	2,75,000	609.511	5,560.00	3352110.50	0.00	5,500.00	0.00	610	5560.00	3352110.50
35	5.1.4.2	5.1.4.2 Plain Cement Concrete: Plain Cement Concrete complete as per drawings & Technical Specification including steel shuttering formwork. Without Plasticizer PCC Grade M20	cum	125.00	5,700.00	7,12,500	56.32	5,700.00	312424.00	0.00	5,700.00	0.00	56	5780.00	312424.0
36	5.2	5.2 Reinforced Cement Concrete									0.00	0.00	0	0.00	0
37	5.2.1	5.2.1 Reinforced Cement Concrete in Anchor Blocks: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plasticizer RCC Grade M20 Using Concrete Mixer	cum	4000.00	7,600.00	3,04,00,000	3,318.575	7,600.00	25160377.64	0.00	7,600.00	0.00	3,319	7600.00	25160377.6.0

C39

J-POWER PLANT CIVIL WORKS (KRT, Perelack & PH)

Sl.No.	Sl No.(as per BOQ)	Description of items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
27	4.5	4.5 Random Backfilling Backfilling/ Surround complete as per drawings & contracted Specification Complete in all respect with all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	7624205.8	0			6630682.86	0		1163522.02	Inadequate provision in BOQ. Excess quantity executed between Anchor Block 7 and Anchor Block 8 for backfilling works on the left side of penstock alignment. Work Completed
28	5	5. Concreting Works	0	0							
29	5.1	5.1 Plain Cement Concrete	0	0							
30	5.1.1	5.1.1 Plain Cement Concrete in Anchor Blocks: Plain Cement Concrete in open foundation complete as per drawings & Technical Specification including steel shuttering formwork Without Plasticizer PCC Grade M15	0	32350			-27113.84			-4910.44	Item Executed as per site requirement. Work Completed
31	5.1.2	5.1.2 Plain Cement Concrete along Penstock Alignment Plain Cement Concrete in open foundation complete as per drawings & Technical Specification including steel shuttering formwork Without Plasticizer PCC Grade M15	33277486	0			1991426.81	0		3566987.19	Excess quantity executed in backfilling works between Anchor Block 7 to Anchor Block 8 as per site condition. Work Completed
32	5.1.3	5.1.3 Plain Cement Concrete in KRT: Plain Cement Concrete complete as per drawings & Technical Specification including steel shuttering formwork Without Plasticizer PCC Grade M25p	0	5730008			0.00	-4830569.475		-899491.53	Item not required to be Executed as per site condition.
33	5.1.4	5.1.4 Plain Cement Concrete in Power House	0	0							
34	5.1.4.1	5.1.4.1 Plain Cement Concrete: Plain Cement Concrete in open foundation complete as per drawings & Technical Specification including steel shuttering formwork Without Plasticizer PCC Grade M15	3877510.5	0			2937090.26	0		-469420.25	Inadequate provision in BOQ. Work completed.
35	5.1.4.2	5.1.4.2 Plain Cement Concrete: Plain Cement Concrete complete as per drawings & Technical Specification including steel shuttering formwork Without Plasticizer PCC Grade M20	0	380078			-332058.31			-57977.68	Item Executed as per site requirement. Work Completed
36	5.2	5.2 Reinforced Cement Concrete	0	0							
37	5.2.1	5.2.1 Reinforced Cement Concrete in Anchor Blocks: Reinforced Cement Concrete as per drawings and Technical Specification including Steel Shuttering Formwork Without Plasticizer RCC Grade M25 Using Concrete Mixer	0	5233622.4			-4443257.97			-778364.43	Item Executed as per site requirement. Work Completed

C40

J-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(as per BOQ)	Description of Items	Unit	CEA Vetted Cost/RCC			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
38	5.2.2	5.2.2 Reinforced Cement Concrete in Saddle Supports: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plastisizer RCC Grade M30 Using Concrete Mixer	cum	2100.00	7,600.00	1,59,60,000	380.881	7,600.00	2894771.60	30.00	7,606.00	228180.00	411	7600.00	3122771.60
39	5.2.3	5.2.3 2nd Stage Reinforced Cement Concrete in Saddle Supports: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plastisizer RCC Grade M25 Using Concrete Mixer	cum	105.00	7,600.00	8,19,000	128.215	7,600.00	1000577.00	15.00	7,606.00	114090.00	143	7600.00	1117077.0
40	5.2.4	5.2.4 Reinforced Cement Concrete in Power House									0.00	0.00	0	0.00	0
41	5.2.4.1	5.2.4.1 Reinforced Cement Concrete in Substructure: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plastisizer RCC Grade M20 Using Concrete Mixer	cum	70.00	7,600.00	5,32,000	417.609	7,600.00	3176033.40	10.00	7,600.00	76008.00	428	7600.00	3252033.40
42	5.2.4.2	5.2.4.2 Reinforced Cement Concrete in Superstructure: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plastisizer RCC Grade M20 Using Concrete Mixer	cum	200.00	7,600.00	15,20,000	224.13	7,600.00	1703392.00	10.00	7,600.00	76008.00	234	7600.00	1779462.00
43	5.2.4.3	5.2.4.3 2nd Stage Reinforced Cement Concrete in Superstructure/Block Out: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plastisizer RCC Grade M25 Using Concrete Mixer	cum	100.00	7,600.00	7,60,000	204.469	7,600.00	1507975.40	0.00	7,606.00	0.00	205	7600.00	1527975.40
44	6	6. Steel for Reinforcement									0.00	0.00	0	0.00	0
45	6.1	6.1 Reinforcement in Anchor Blocks: Supplying, filling and placing TMT reinforcing bs IS: 1786 Fe 500D reinforcement including splicing complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	MT	180.00	48,800.00	73,44,000	140.427	43,551.00	6883291.62	0.00	48,800.00	0.00	147	43900.00	6883291.62
46	6.2	6.2 Steel Fe-500 as Dowels in Anchor Blocks: Supplying, filling and placing TMT reinforcing bs IS: 1786 Fe 500D reinforcement including splicing complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	MT	95.00	48,800.00	38,76,000	40.363	43,551.00	1850358.93	0.00	48,800.00	0.00	43	43900.00	1850358.9

~ 537 ~

C41

Sl. No.	Sl No (as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							9
39	5.2.2	5.2.2 Reinforced Cement Concrete in Saddle Supports Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plasticizer RCC Grade M20 Using Concrete Mixer	0	1267228.4			-1567902.12			-155822.28	Item Executed as per site requirement. Work Completed. Final Bill yet to be raised by the contractor.
40	5.2.3	5.2.3 2nd Stage Reinforced Cement Concrete in Saddle Supports: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plasticizer RCC Grade M25 Using Concrete Mixer	294877	0			282807.63	0		45408.27	Inadequate provision in BOQ. Work Completed, Final Bill yet to be raised by the contractor.
40	5.2.4	5.2.4 Reinforced Cement Concrete in Power House:	0	0							
41	5.2.4.1	5.2.4.1 Reinforced Cement Concrete in Substructure: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plasticizer RCC Grade M30 Using Concrete Mixer	2720032.4	0			2355113.35	0		414935.30	Inadequate provision in BOQ Work Completed, Final Bill yet to be raised by the contractor.
42	5.2.4.2	5.2.4.2 Reinforced Cement Concrete in Superstructure Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plasticizer RCC Grade M30 Using Concrete Mixer	368983.8	0			272888.47	0		39894.33	Inadequate provision in BOQ Excess Quantity executed in construction of Pear Top Control Room. Work Completed. Final Bill yet to be raised by the contractor.
43	5.2.4.3	5.2.4.3 2nd Stage Reinforced Cement Concrete in Grooves/Block Out: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plasticizer RCC Grade M30 Using Concrete Mixer	617970.4	0			930199.29	0		134778.18	Inadequate provision in BOQ. Excess quantity executed in RCC works of guide groove of TRC gate. Work Completed.
44	6	6. Steel for Reinforcement	0	0							
45	6.1	6.1 Reinforcement in Anchor Blocks: Supplying, filling and placing TMT conforming to IS: 1786 Fe 500D reinforcement including cutting complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	0	1261018.4			-1143813.80			-207704.60	Item Executed as per site requirement. Work Completed
46	6.2	6.2 Steel Rebar as Dowels in Anchor Blocks: Supplying, filling and placing TMT conforming to IS: 1786 Fe 500D reinforcement including cutting complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	0	2625312			-1716365.10			-388945.80	Item Executed as per site requirement. Work Completed

C42

J-POWER PLANT CIVIL WORKS (IBT, Pondeek & PH)

Sl. No.	Sl No.(as per BOQ)	Description of Items	Unit	CEA Vetted Cost /BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
41	6.3	6.3 Reinforcement in Saddle Supports: Supplying, fitting and placing TMT conforming to IS: 1786 Fe 500D reinforcement including splicing complete as per drawing and technical specifications. TMT- IS 1786 (Fe 500D)	MT	48.00	40,600.00	19,32,000	12.240	40,600.00	546096.00	1.00	40,600.00	40600.00	14	40600.00	586696.0
42	6.4	6.4 Reinforcement in Power House: Supplying, fitting and placing TMT conforming to IS: 1786 Fe 500D reinforcement including splicing complete as per drawing and technical specifications. TMT- IS 1786 (Fe 500D)	MT	48.00	40,600.00	19,32,000	19.903	40,600.00	2352842.40	3.00	40,600.00	122400.00	76	40600.00	3015242.40
43	7	7 Drilling & Grouting:									0.00	0.00	0	0.00	0
50	7.1	7.1 Drilling: Percussion drilling of designated areas as shown in the construction drawings or as directed by the Engineer-in-Charge including casing, shoring and serviceability tests progressively complete in all respect with all labours, materials, plant, equipments, etc. as per technical specification given drawing and as directed by the Engineer-in-Charge. Drilling of holes upto 48mm dia.	rm	6000.00	4,000.00	2,40,00,000	1601.71	4,000.00	6006840.00	0.00	4,000.00	0.00	1,502	4000.00	6006840.0
51	7.2	7.2 Cement Grouting: Cement Grouting including supply of all materials like cement, sand, admixture, etc.) which are not specifically mentioned but required to complete the job), water testing of holes including supply of all required apparatus complete, labours, plants and equipments, etc. in all respect as per technical specification and as directed by the Engineer-in-Charge	per 50kg bags of cement	12000.00	1,220.00	1,47,60,000	1231.00	1,220.00	1514120.00	0.00	1,220.00	0.00	1,231	1220.00	1514120.0
52	7.3	7.3 Sand required for Grouting	cum	30.00	1,150.00	34,500	0.00	1,150.00	0.00	0.00	1,150.00	0.00	0	1150.00	0
53	8	8. Drilling & Fixing of Steel Rebars at Dowels							0.00		0.00	0.00	0	0.00	0
54	8.1	8.1 Providing, Fixing and fixing in position Chemical-clear Anchors including drilling of holes of specified size and depths upto 250mm into the old concrete, cleaning holes, placing chemicals,inside the holes and fixing reinforcement bars all complete as per specification or as directed by the Engineer-in-Charge at locations indicated in the Construction Drawings								0.00	0.00	0.00	0	0.00	0
55	8.1.1	8.1.1 20mm dia or bar Rebars	Nos	30800.00	300.00	1,14,00,000	40,610.00	300.00	18831800.00	0.00	300.00	0.00	45,610	300.00	18831800.0
56	9	9. Non- Shrink Grouting									0.00	0.00	0	0.00	0
57	9.1	9.1 Non- Shrink Grouting: Providing & injecting approved grout in proportion recommended by the manufacturer at location as directed by the Engineer-in-Charge by suitable grout pump at required pressure including cutting of nipples after curing, etc. complete as per the technical specification or as directed by the Engineer-in-Charge									0.00	0.00	0	0.00	0

C43

J/POWER PLANT CIVIL WORKS (HRT, Pensteck & PH)

Sl. No.	ID No (as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							1
41	6.3	6.3 Reinforcement in Saddle Supports: Supplying, fitting and placing TMT rainforcing bs ID: 1786 Fe 500D reinforcement including splicing complete as per drawing and technical specifications TMT- ID 1786 (Fe 500D)	0	1053894			-855511.89			-198282.14	Item Executed as per site requirement. Work Completed. Final Bill yet to be raised by the contractor.
48	6.4	6.4 Reinforcement in Power House: Supplying, fitting and placing TMT rainforcing bs ID: 1786 Fe 500D reinforcement including splicing complete as per drawing and technical specifications TMT- ID 1786 (Fe 500D)	1383242.4	0			1172239.32	0		211002.68	Inadequate provision in BOQ. Excess Quantity executed in reinstallation of Wall Top Control Room. Work Completed. Final Bill yet to be raised by the contractor.
49	7	7. Drilling & Grouting	0	0							
50	7.1	7.1 Drilling Percussion drilling in triassic/soft zones as shown in the construction drawings or as directed by the Engineer-in-Charge including sinking, driving and permeability tests progressively complete in all respect with all labours, materials, plant, equipments, etc. as per technical specifications given, drawing and as directed by the Engineer-in-Charge. Drilling of holes upto 46mm dia	0	17993363			-1524644.65			-270471.32	Item Executed as per site requirement. Work Completed.
51	7.2	7.2 Cement Grouting: Cement Grouting including supply of all materials like cement, sand, admixture, etc (which are not specifically mentioned but required to complete the job), water testing of holes including supply of all required appendices complete, labours, plants and equipments, etc. in all respect as per technical specification and as directed by the Engineer-in-Charge	0	13240873			-11225313.00			-3250556.44	Item Executed as per site requirement. Work Completed.
52	7.3	7.3 Sand required for Grouting	0	34600			0.00	-28364.41		-6235.59	Item not required to be Executed as per site condition
53	8	8. Drilling & Fixing of Steel Rebars as Dowels	0	0							
54	8.1	8.1 Providing, Planing and fixing in position Chemical rebar bolters including drilling of holes of specified size and depths upto 250mm into the old concrete, cleaning holes, placing chemicals inside the holes and fixing reinforcement bars all complete as per specification or as directed by the Engineer-in-Charge in locations indicated in the Construction Drawings	0	1							
55	8.1.1	8.1.1 25mm dia rebar bolting	1431000	1			831084.76	0		119671.25	Inadequate provision in BOQ. Excess quantity executed in anchoring works of repair of gate groove of DT gate, PRV Gate, TRD gate etc. Work completed.
56	9	9. Non- Shrink Grouting	0	0							
57	9.1	9.1 Non- Shrink Grouting: Providing & injecting approved grout in properties recommended by the manufacturer at location as directed by the Engineer-in-Charge by suitable pan/pump at required pressure including curing of approx 450m curing, etc. complete as per the technical specification or as directed by the Engineer-in-Charge	0	1			0.00	0			

C44

J POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl. No.(as per BOQ)	Description of Items	Unit	SEA: Vetted Cost (BOQ)			As per Revised Cost Estimate at May 2020 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
49	9.1.1	9.1.1 Stained tinted resin shrink compatible as grout of approved make	kg	1709000.00	72.00	12,24,83,000	13,65,100.00	72.00	9827200.00	0.00	72.00	0.00	1365100.0	72.00	98272200.0
50	10	10. Concrete Waterproofing									0.00	0.00	0	0.00	0
51	10.2	10.1 Providing, applying "KYPEX" Concrete Water Proofing & Durability Enhancement by Crystallization to be supported by at least two International Test Reports showing clear Scanning Electron Microscopic (SEM) Photographs of doubled and mature crystals forming to plug all the capillary tracks and pores of the concrete permanently and permeability test as per IS 728 conducted by CBRI. The concrete should not absorb water more than 0.5 grams and not more than 1mm from the concrete surface. The product to be tested in CC-ES-EVALUATION REPORT 9426X January 2008. The treatment to be carried out on the concrete surfaces as per manufacturer's specification and as directed by the Engineer-in-Charge. The treatment to be carried out on the concrete surfaces including cleaning of all RCC surfaces as per manufacturer's specification/ datasheet. The application to be carried out in two coats with coverage rate of 5 Sq.m per coat	sqm	2000.00	1,800.00	36,00,000	0.00	1,800.00	0.00	0.00	1,800.00	0.00	0	1800.00	0
51	11	11. Epoxy based Bonding Agent									0.00	0.00	0	0.00	0
52	11.1	11.1 Supplying, mixing and applying a Epoxy resin based bonding agent of reputed make for proper bond of old to new concrete	sqm	2600.00	1,090.00	32,70,000	16,031.256	1,090.00	17463171.22	0.00	1,090.00	0.00	16,031	1090.00	17463171.22
53	12	12. Masonry and Allied Works									0.00	0.00	0	0.00	0
54	12.1	12.1 Stone Work Stone Masonry Works in Cement Mortar 1:3 complete in all respect as per construction drawings and technical specification									0.00	0.00	0	0.00	0
55	12.1.1	12.1.1. Random Rubble Masonry	cum	500.00	5,350.00	26,75,000	482.02	5,350.00	2546827.35	0.00	5,350.00	0.00	482	5350.00	2546827.358
56	12.2	12.2 Brick Work									0.00	0.00	0	0.00	0
57	12.2.1	12.2.1 230mm thick Brick Wall in cement mortar with 1st class brick including racking out joints and curing complete as directed in drawing									0.00	0.00	0	0.00	0
58	12.2.1.1	12.2.1.1 In Substructure upto plinth level including dewatering, if necessary									0.00	0.00	0	0.00	0
59	12.2.1.1 a)	a) In Proportion 1:4	sqm	200.00	1,810.00	3,62,000	69.69	1,810.00	126738.58	62.00	1,810.00	50500.00	117	1810.00	211296.60
70	12.2.2	12.2.2 1st Class Brick Hogged Wall in cement mortar including racking out joints and curing complete as per technical specification and as directed by the Engineer-in-Charge									0.00	0.00	0	0.00	0

C45

J-POWER PLANT CIVIL WORKS (WBT, Peelaiah & PH)

Sl. No.	Sl No.(as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							1
58	9.1.1	9.1.1 Stone masonry rock dentk consolidation grout of approved make	0	2267880			-1921437.28			-345582.71	Item Executed as per site requirement. Work Completed.
59	10	10. Concrete Waterproofing	0	0							
60	10.1	10.1 Providing, applying 'XYPEX' Concrete Waterr Proofing & Durability Enhancement by Crystallization to be supported by at least two International Test Reports showing clear Scanning Electron Microscope (SEM) Photographs of dendrite and mature crystals forming to plug all the capillary tracks and pores of the concrete per meter/cu and permeability test as per IS: 720 conducted by CERI. The concrete should not absorb water more than 0.5 grams and not more than 10cm from the concrete surface. The product is to be listed in ICC-ES EVALUATION REPORT INDEX January 2008. The treatment to be carried out on the concrete surfaces as per manufacturer's specification and as directed by the Engineer-in-Charge. The treatment to be carried out on the concrete surfaces including cleaning of all RCC surfaces as per manufacturer's specification datasheet. The application to be carried out in two coats with coverage rate of 5 Kg per meet	0	3000000			0.00	-3058847.46		949152.54	Item not required to be Executed as per site condition
61	11	11. Epoxy bound Bonding Agent	0	0							
62	11.1	11.1 Supplying, mixing and applying a Epoxy resin based bonding agent w'required, water tar proper bond at old to new concrete	14183171.22	0			12838111.20	0		2145060.02	1. Excess quantity executed/nil/ex executing works at various locations of powerhouse, valve house etc. for bonding between old and new concrete. 2. Excess quantity executed/nil/ex executing "HRT resurfacing works using conventional mortar conforming to BS EN 1504-3 PM with compatible bonding agent" as per advice of Site. (Annexure -LVI/f)
63	12	12. Masonry and Allied Works	0	1							
64	12.1	12.1 Stone Work Stone Masonry Works in Cement Mortar 1:3 complete in all respect as per construction drawings and technical specification	0	1							
65	12.1.1	12.1.1 Random Rubble Masonry	871627.39	1			718867.25	0		152960.13	Inadequate provision in BOQ. Excess quantity executed in Retaining wall works at Surge Shaft,Switchyard etc. Work Completed
66	12.2	12.2 Brick Work	0	1							
67	12.2.1	12.2.1 230mm thick Brick Wall in cement mortar with 1st class brick including racking out joints and curing complete as directed in structure	0	1							
68	12.2.1.1	12.2.1.1 In Substructure upto plinth level including dewatering, if necessary	0	1							
69	12.2.1.1 a)	a) In Proportion 1:4	0	160841.1			-127788.07			-33053.03	Item Executed as per site requirement. Work Completed. Final Bill yet to be raised by the contractor.
70	12.2.2	12.2.2 1st Class Brick Nagged Wall in cement mortar including racking out joints and curing complete as per technical specification and as directed by the Engineer-in-Charge	0	1							

~ 542 ~

C46

~543~

J.POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl.No.	Sl No.(as per BOQ)	Description of Items	Unit	CBE Vetted Cost (BOQ)			As per Revised Cost Estimate on May 2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
71	12.2.2.1	12.2.2.1 112mm Thick Brick Wall									0.00	0.00	0	0.00	0
72	12.2.2.1 a)	a) In cement mortar in proportion 1:4 (1 cement: 4 sand)	sqm	800.00	870.00	5,22,000	443.51	670.00	385853.70	50.00	870.00	43500.00	494	870.00	429353.70
73	12.3	12.3 Providing and laying 25mm thick Damp Proof Course with cement concrete in prop. 1:1.5:3 with graded stone aggregate of 12mm down nominal size including providing approved chemical admixture in proportion as recommended by the manufacturer including curing, etc. complete in all respect as per the technical specification and as directed by the Engineer-in-Charge	sqm	75.00	235.00	17,625	0.00	235.00	0.00	0.00	235.00	0.00	0	235.00	0
74	12.4	12.4 Plinth Protection Works									0.00	0.00	0	0.00	0
75	12.4.1	12.4.1 Providing Plinth Protection with Boldar Rip rap in cement mortar 1:4 and finished with 15mm thick cement plaster in cures. 1:2 with a finishing coat of neat cement. Total	sqm	150.00	600.00	1,20,500	0.00	600.00	0.00	0.00	600.00	0.00	0	600.00	0
76	12.4.2	12.4.2 Providing drain with Cement Concrete (1:3:6) 150m thick sides 150m thick bed over river bed excluding excluding 15mm thick cement plastering in prop 1:3 finished with a floating coat of cement slurry as directed with necessary shuttering for sides and earth work in excavation of foundation trenches and refilling sides after completion of exert etc. as specified. 300mm wide and average 250mm deep with bed slope 1 in 100 with initial depth of 100mm	rm	500.00	1,200.00	6,00,000	0.00	1,200.00	0.00	0.00	1,200.00	0.00	0	1200.00	0
77	13	13. Plastering Works									0.00	0.00	0	0.00	0
78	13.1	13.1 Cement Plaster in Fine Sand: Cement Plaster in Single Coat including arises or rounded angles not exceeding 50mm/girth and finished even and smooth including curing complete as per technical specification and as directed by the Engineer-in-Charge									0.00	0.00	0	0.00	0
79	13.1.1	13.1.1 12 mm Thick Cement Plaster of Mix 1:4 (1 Cement: 4 Fine Sand)	sqm	1800.00	250.00	4,50,000	280.650	250.00	140467.00	286.00	350.00	60050.00	766	266.00	188747.00
80	13.1.2	13.1.2 15 mm Thick Cement plaster on the rough side of single or half brick wall of mix 1:4 (1 Cement: 4 Fine Sand)	sqm	358.00	260.00	1,01,500	286.65	290.00	83028.50	58.00	395.00	14000.00	347	286.00	100528.50
81	13.1.3	13.1.3 6mm Thick Plaste of Mix 1:3 (1 Cement: 3 Fine Sand)	sqm	200.00	200.00	40,000	168.11	200.00	33630.00	38.00	200.00	6990.00	168	236.00	39,639
82	13.1.4	13.1.4 Cement Plaster with a Floating Coat of Neat Cement									0.00	0.00	0	0.00	0
83	13.1.4.1	13.1.4.1 15 mm Thick Cement Plaster finished with a floating coat of neat cement of mix: 1:3 (1 Cement : 3 Fine Sand)	sqm	108.00	320.00	32,800	31.82	320.00	10118.40	0.00	320.00	0.00	32	320.00	10,118
84	14	14. Finishing Works							0.00		0.00	0.00	0	0.00	0
85	14.1	14.1 Angle Spikes	sqm	200.00	520.00	1,04,000	0.00	520.00	0.00	0.00	520.00	0.00	0	520.00	0
86	14.2	14.2 Floor Finishing Works									0.00	0.00	0	0.00	0
87	14.2.1	14.2.1 Vetrified Tiles									0.00	0.00	0	0.00	0



J-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(as per BSQ)	Description of items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
71	12.2.2.1	12.2.2.1 112mm Thick Brick Wall	0	1							
72	12.2.2.1 a)	a) In cement mortar in proportion 1:6 (1 cement: 6 sand)	0	82844.3			-7831.2.81			-14132.45	Item Executed as per site requirement Work Completed, Final Bill yet to be raised by the contractor.
73	12.3	12.3 Providing and laying 25mm thick Deep Proof Course with cement concrete in prop 1:1.5:3 with graded stone aggregate of 10mm down nominal size including providing approved damp proof admixture in proportion as recommended by the manufacturers, including curing, etc. complete in all respect as per the technical specification and as directed by the Engineer-in-Charge	0	17925			0.00	-14636.44		-3288.56	Item not required to be Executed as per site condition.
74	12.4	12.4 Plinth Protection Works	0	1							
75	12.4.1	12.4.1 Providing Plinth Protection with Bricks flat laid in cement mortar 1:4 and finished with 15mm thick cement plaster in prop. 1:3 with a floating coat of neat cement finish	0	133580			0.00	-113139.59		-25384.41	Item not required to be Executed as per site condition.
76	12.4.2	12.4.2 Providing drain with Cement Concrete (1:2:4) 10cm thick sides 15cm thick top over brick flat soling including 15mm thick cement plastering in prop 1:3 finished with a floating coat of cement slurry as directed with necessary shuttering for sides and earth work in excavation of foundation trenches and refilling sides after completion of work etc. as specified. 100mm wide and average 250mm deep with inclination 1 in 150 with initial depth of 100mm	0	600000			0.00	-508474.58		-91525.42	Item not required to be Executed as per site condition
77	13	13. Plastering Works	0	1							
78	13.1	13.1 Cement Plaster in Fine Sand: Cement Plaster in Gargo Coat including arises or rounded angles not exceeding 90mm girth and finished even and smooth including curing complete as per technical specification and as directed by the Engineer-in-Charge	0	1							
79	13.1.1	13.1.1 12 mm Thick Cement Plaster of Mix 1:4 (1 Cement: 4 Fine Sand)	0	259030.5			-21079.39			-3974.11	Item Executed as per site requirement Work Completed, Final Bill yet to be raised by the contractor.
80	13.1.2	13.1.2 15 mm Thick Cement plaster on the rough side of single or half brick wall of mix 1:4 (1 Cement: 4 Fine Sand)	0	971.8			-823.31			-148.19	Item Executed as per site requirement Work Completed, Final Bill yet to be raised by the contractor.
81	13.1.3	13.1.3 6mm Thick Plaster of Mix 1:3 (1 Cement: 3 Fine Sand)	0	364			-308.47			-55.53	Item Executed as per site requirement Work Completed, Final Bill yet to be raised by the contractor.
82	13.1.4	13.1.4 Cement Plaster with a Floating Coat of Neat Cement	0	1							
83	13.1.4.1	13.1.4.1 15 mm Thick Cement Plaster finished with a floating coat of neat cement of mix: 1:3 (1 Cement : 3 Fine Sand)	0	21861.8			-18543.71			-3317.87	Item Executed as per site requirement Work Completed
84	14	14. Finishing Works	0	1							
85	14.1	14.1 Stone Soling	0	104000			0.00	-88135.59		-15864.41	condition.
86	14.2	14.2 Floor Finishing Works	0	1							
87	14.2.1	14.2.1 Vitrified Tiles	0	1							

C48

J/POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	SI No.(as per BOQ)	Description of items	Unit	CEA Vetted Cost/BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities/Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
68	14.2.1.1	14.2.1.1 On Floor: Providing Vitrified Floor Tiles of approved quality of specified size, shape and thickness not less than 10mm on floors over 15mm thick base of cement mortar in prop 1:3 (1 cement: 3 coarse sand) including cutting where necessary finished with fush pointing with Fix-A-Tile/ White Cement Slurry mixed with approved pigment to match the shade of the tiles, complete at all levels as specified in the technical specification and as directed by the Engineer-in-Charge Deluxe Range: Of Size 1200mm x 1800mm and above	sqm	285.00	3,200.00	9,48,800	296.32	3,200.00	948224.00	28.68	3,200.00	91860.00	325	3200.00	1040084.0
69	14.2.1.2	14.2.1.2 On Skirting: Providing Vitrified Floor Tiles of approved quality of specified size, shape and thickness not less than 10mm on skirting over 15mm thick base of cement mortar in prop 1:3 (1 cement: 3 coarse sand) including cutting where necessary finished with fush pointing with Fix-A-Tile/ White Cement Slurry mixed with approved pigment to match the shade of the tiles, complete at all levels as specified in the technical specification and as directed by the Engineer-in-Charge Deluxe Range: Of Size 1200mm x 1800mm and above	sqm	100.00	3,200.00	3,20,000	33.33	3,200.00	106624.00	28.68	3,200.00	91860.00	62	3200.00	202324.0
70	14.2.2	14.2.2 Ceramic Tiles									0.00	0.00	0	0.00	0
71	14.2.2.1	14.2.2.1 On Walls: Providing polished Ceramic Wall Tiles of approved quality, size, shape and thickness not less than 6mm on walls and skirting over cement mortar bed 10mm thick in prop. 1:3 (1 cement: 3 coarse sand) including cutting where necessary finished with fush pointing with Fix-a-Tile/ White Cement Slurry mixed with approved pigment to match the shade of tiles complete as all levels as specified in the technical specification and as directed by the Engineer-in-Charge Deluxe Range: Of Size 300mm x 450mm and above	sqm	599.02	1,240.00	7,32,589	155.69	1,243.00	131943.20	152.00	1,240.00	188508.00	308	1240.00	317843.20
72	14.2.3	14.2.3 Anti- Skid Tiles									0.00	0.00	0	0.00	0
73	14.2.3.1	14.2.3.1 On Floor: Providing Anti Skid Tiles of approved quality size, shape and thickness not less than 8mm on floor over a cement mortar bed of 15mm thick in prop 1:3 (1 cement: 3 coarse sand) approved make tile with Fix-a_Tile/ White Cement, complete at all level as specified in the technical specification and as directed by the Engineer-in-Charge Verified: Executive Range- 2 (Size 600mm x 600mm and above)	sqm	200.00	1,710.00	3,42,000	26.28	1,710.00	44955.90	53.00	1,710.00	85308.00	79	1710.00	130455.90
74	14.2.3.2	14.2.3.2 On Skirting: Providing Anti Skid Tiles of approved quality size, shape and thickness not less than 8mm on floor over a cement mortar bed of 15mm thick in prop 1:3 (1 cement: 3 coarse sand) approved make tile with Fix-a_Tile/ White Cement, complete at all level as specified in the technical specification and as directed by the Engineer-in-Charge Verified: Executive Range- 2 (Size 600mm x 600mm and above)	sqm	50.00	1,710.00	85,500	0.00	1,710.00	0.00	0.00	1,710.00	0.00	0	1710.00	0
75	14.2.4	14.2.4 Granite Flooring									0.00	0.00	0	0.00	0

C49

J.POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(as per BOQ)	Description of items	Variation		VARIATION ANALYSIS [Variation due to]						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
89	14.2.1.1	14.2.1.1 On Floor: Providing Vitrified Floor Tiles of approved quality of specified size, shape and thickness not less than 16mm on floors over 150mm thick base of cement mortar in prop 1:3 (1 cement: 3 coarse sand) including cutting where necessary finished with flush pointing with Fe-A-Tile/ White Cement Slurry mixed with approved pigment to match the shade of the tiles, complete at all levels as specified in the technical specification and as directed by the Engineer-in-Charge Deluxe Range: Of Size 1200mm x 1800mm and above	482004	0			320550.80	0		81173.15	Incongruity provision in BOQ. Work is in progress.
90	14.2.1.2	14.2.1.2 On Skirting: Providing Vitrified Floor Tiles of approved quality of specified size, shape and thickness not less than 16mm on skirting over 15mm thick base of cement mortar in prop 1:3 (1 cement: 3 coarse sand) including cutting where necessary finished with flush pointing with Fe-A-Tile/ White Cement Slurry mixed with approved pigment to match the shade of the tiles, complete at all levels as specified in the technical specification and as directed by the Engineer-in-Charge Deluxe Range: Of Size 1200mm x 1800mm and above	0	117000			-80743.37			-17662.63	Item executed as per site requirement. Work is in progress.
96	14.2.2	14.2.2 Ceramic Tiles	0	0							
97	14.2.2.1	14.2.2.1 On Walls: Providing polished Ceramic Wall Tiles of approved quality, size, shape and thickness not less than 8mm on walls and skirtings over cement mortar bed 10mm thick in prop. 1:3 (1 cement: 3 coarse sand) including cutting where necessary finished with flush pointing with Fe-a_Tile/ White Cement Slurry mixed with approved pigment to match the shade of tiles complete as all levels as specified in the technical specification and as directed by the Engineer-in-Charge Deluxe Range: Of Size 300mm x 450mm and above	0	415325.8			-351979.80			40254.75	Item Executed as per site requirement. Work Completed. Final Bill yet to be raised by the contractor.
98	14.2.3	14.2.3 Anti- Skid Tiles	0	1						0.00	
99	14.2.3.1	14.2.3.1 On Floor: Providing Anti Skid Tiles of approved quality size, shape and thickness not less than 8mm on floor over a cement mortar bed of 15mm thick in prop 1:3 (1 cement: 3 coarse sand) approved make tile with Fe-a_Tile/ White Cement complete as at level as specified in the technical specification and as directed by the Engineer-in-Charge Verified: Executive Range- 2 (Size 600mm x 600mm and above)	0	251564.1			-178274.66			-32289.44	Item Executed as per site requirement. Work Completed. Final Bill yet to be raised by the contractor.
94	14.2.3.2	14.2.3.2 On Skirting: Providing Anti Skid Tiles of approved quality size, shape and thickness not less than 8mm on floor over a cement mortar bed of 15mm thick in prop 1:3 (1 cement: 3 coarse sand) approved make tile with Fe-a_Tile/ White cement complete at all level as specified in the technical specification and as directed by the Engineer-in-Charge Verified: Executive Range- 2 (Size 600mm x 600mm and above)	0	66000			8.00	-73457.55		-11642.37	Item not agreed to be Executed as per site condition.
95	14.2.4	14.2.4 Granite Flooring	0	0							

1-546-7

C50

J-POWER PLANT CIVIL WORKS (HRT, Penstock & Pit)

Sl. No.	Sl No.(as per BOQ)	Description of Items	Unit	CEA Vetted Cost /BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
96	14.2.4.1	14.2.4.1 Providing Polished Granite Tiles of approved quality, size shape and thickness not less than 18mm on floors, steps, landings, risers and treads of steps over 150mm thick base of cement mortar in grade C3 (1 cement: 3 coarse sand) including cutting where necessary finished with flush pointing with Pure White Cement Slurry mixed with approved pigment to match the shade of tiles complete in all levels as specified in Tch technical specification and as directed by the Engineer-in-Charge									0.00	0.00	0	0.00	0
97	a)	a) With Pure Tile	sqm	250.00	1,520.00	3,80,000	206.38	1,520.00	380677.60	0.00	1,520.00	0.00	250	1520.00	380677.60
98	b)	b) With White Cement	sqm	250.00	1,550.00	3,87,500	0.00	1,550.00	0.00	0.00	1,550.00	0.00	0	1550.00	0
99	14.2.5	14.2.5 Metallic Hardtact Iranite Flooring									0.00	0.00	0	0.00	0
100	14.2.5.1	14.2.5.1 Providing & laying 65mm thick CC Floor with metallic concrete hardner topping under layer of 50mm thick cement concrete 1:2:4 (1 Cement: Coarse Sand: 4 Coarse Aggregate of 20mm & down) and top layer of 15mm thick of metallic cement hardner consisting of mix 1:2 (1 cement hardner and 2 stone aggregate 6mm and down) by volume with which metallic hardening compound of approved quality is mixed in the ratio of 4:1 (4 parts of cement: 1 part of metallic floor hardening compound of approved quality by weight including finishing with curing complete as directed	sqm	400.00	800.00	3,20,000	0.00	800.00	0.00	400.00	809.09	323600.00	400	809.00	323600.0
101	14.2.6	14.2.6 Acid/ Alkali Resistant Tiles									0.00	0.00	0	0.00	0
102	14.2.6.1	14.2.6.1 Providing and laying 12mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resistant mortar bedding and joints filled with acid and/or alkali resistant cement as per IS: 4457, complete as per the direction of the Engineer-in-Charge									0.00	0.00	0	0.00	0
103	a)	14.2.6.1 a) In flooring on a bed of 10mm thick mortar 1:4 (1 acid proof cement: 4 coarse sand) Acid and Alkali Resistant Tiles	sqm	300.00	1,490.00	4,47,000	75.340	1,490.00	111809.60	0.00	1,490.00	0.00	75	1490.00	111809.60
104	b)	14.2.6.1 b) In dado/ Skirting on 12mm thick mortar 1:4 (1 acid proof cement: 4 coarse sand) Acid and Alkali Resistant Tiles	sqm	300.00	1,600.00	4,80,000	36.220	1,600.00	57328.00	0.00	1,600.00	0.00	36	1590.00	57,328
105	14.2.7	14.2.7 Epoxy Flooring									0.00	0.00	0	0.00	0
106	14.2.7.1	14.2.7.1 Providing and applying screed cutting, self levelling epoxy modified cementitious floor topping (Sikafloor 81 EpoCem of Sika (India) Ltd. or equivalent using trowel followed by applying self smoothing epoxy floor coating (Sikafloor 261(3) of Sika (India) Ltd / Dr. Fosroc's EPU Floor Seal/ L (Asian Chemicals)/ MASTERTOP 942 ECC of BASF or equivalent using serrated trowel and rolled with a spiked roller roller after proper surface preparation and application of a priming coat of Sikafloor 03 Primer or equivalent, as specified and directed by the Engineer-in-Charge	sqm	1258.00	2,690.00	33,82,586	1,247.90	2,690.00	3356956.51	1000.00	2,690.00	2690000.00	2,248	2690.00	6046956.350
107	14.3	14.3 Door, Windows & Ventilator									0.00	0.00	0	0.00	0
108	14.3.1	14.3.1 Aluminium Doors									0.00	0.00	0	0.00	0
109	14.3.1.1	14.3.1.1 Providing, fixing and fixing anodised aluminium trained glazed doors with anodised aluminium frame made of 100mm x 45mm x 2.5mm section of approved brand with door style of size 46mm x 45mm x 2.5mm, top rail 228mm x 45mm x2mm, lock rail 188mm x 45mm x 2mm and bottom rail 100mm x 45mm x 2.5mm fitted with glazing clip, special type rubber gasket complete including hydraulic floor spring, pivot, lower bolt in each leaf, aluminium door handle, lock angles, door, etc. complete as specified and directed by the Engineer-in-Charge of all levels including cost of Glass & Glazing									0.00	0.00	0	0.00	0
110	a)	a) 6mm Clear Glass	sqm	50.00	13,920.00	6,96,000	0.00	13,920.00	0	0	13,920.00	0.00	0	13,920	0

~ 547 ~

C51

J-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl.No.	Sl No.(as per BOQ)	Description of items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Payline(+)	Negative(-)	Price Escalation	Change in design/scope	Under/Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
96	14.2.4.3	14.2.4.3 Providing Polished Granite Tiles of approved quality, non shiny and thickness not less than 18mm on floors, pantings, risers and treads of steps over 12mm thick base of cement mortar in proop 1:3 (1 cement: 3 coarse sand) including nailing where necessary finished with Bulk pointing with Fix or Tile/ White Cement Slurry mixed with approved pigment to match the shade of tiles complete at all levels as specified in teh technical specification and as directed by the Engineer-in-Charge	0	0			0.00	0			
97	iii	a) With Fevi-Tile	577.6	0			455.40	0		88.11	
98	iv	b) With Wihte Cement	0	39*500			0.00	-39389.83		531.17	Item not required to be Executed as per site condition.
99	14.2.5	14.2.5 Metallic Hardner/ Iranite Flooring	0	0			0.00	0			
100	14.2.5.1	14.2.5.1 Providing & laying 65mm thick CC Floor with metallic corundum hardner topping under layer of 30mm thick cement concrete 1:2:4 (1 Cement: Coarse Sand: 4 Coarse Aggregate of 20mm & down) and top layer of 15mm thick of metallic cement hardner consisting of mix 1:2 (1 cement hardner and 2 stone aggregate 6mm and down) by volume with which metallic hardening compound of approved quality is mixed in the ratio of 4:1 (4 parts of cement: 1 part of metallic floor hardening compound of approved quality by weight) including finishing with roving complete as directed	0	0			0.00	0			Item yet to be executed.
101	14.2.6	14.2.6 Acid/ Alkali Resistant Tiles	0	0			0.00	0			
102	14.2.6.1	14.2.6.1 Providing and fixing 10mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resistant mortar bedding and joints filled with acid and/or alkali resistant cement as per IS: 4457, complete as per the direction of the Engineer-in-Charge	0	0			0.00	0		0.00	
103	a)	14.2.6.1 a) In flooring on a bed of 10mm thick mortar 1:4 (1 acid proof cement: 4 coarse sand) Acid and Alkali Resistant Tiles	0	330180.4			-296058.68			51130.74	Item Executed as per site requirement. Work Completed.
104	b)	14.2.6.1 b) In dado/ Skirting on 12mm thick mortar 1:4 (1 acid proof cement: 4 coarse sand) Acid and Alkali Resistant Tiles	0	415612			-354698.78			-43661.22	Item Executed as per site requirement. Work Completed.
105	14.2.7	14.2.7 Epoxy Flooring	0	0			0.00	0			
106	14.2.7.1	14.2.7.1 Providing and applying normal setting, self levelling epoxy modified cementitious floor topping (Sikafloor P/ EpoCem of Sika (India) Ltd. or equivalent using trowel followed by applying self smoothing epoxy floor coating (Sikafloor 261(S) of Sika (India) Ltd./ Dr. Fenitel/BPL/ Roar Self L (Asian Chemicals)/ MASTERTOP 242 ECC of BASF or equivalent using serrated trowel and rolled with a spiked nylon roller after proper surface preparation and application of a priming coat of Sikafloor 150 Primer or equivalent as specified and directed by the Engineer-in-Charge	2084459.95	0			2274909.11	0		409439.84	Item Executed as per site requirement. Excess quantity executed in the flooring works of generator floor. Work is in progress.
107	14.3	14.3 Door, Windows & Ventilator	0	0							
108	14.3.1	14.3.1 Aluminium Doors	0	0							
109	14.3.1.1	14.3.1.1 Providing, fitting and fixing anodised aluminium formed glazed doors with anodised aluminium frame made of 100mm x 45mm x 2.5mm section of approved brand with door shutter of size 48mm x 45mm x 2.0mm, top rails 50mm x 45mm x 2mm, lock rails 100mm x 45mm x 2mm and bottom rails 150mm x 45mm x 2.5mm filled with glazing clip, special type rubber gasket complete including hydraulic floor spring, pivot, tower bolt in each leaf, aluminium door handle, lock angles, steel, etc. complete as specified and directed by the Engineer-in-Charge at all levels including cost of Glass & Glazing	0	0							
110	a)	a) 6mm Clear Glass	0	69600			0.00	-69600.01		-1393.40	Item not required to be Executed as per site condition.

548

Uttar Pradesh Power Corporation Ltd.

J-POWER PLANT CIVIL WORKS / IRT, Panipat & PH

Sl.No.	Sl No (as per BOQ)	Description of items	Unit	CEA Vetted Cost @Q0			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
111	b)	b) 5mm Frosted Glass	sqm	60.00	12,000.00	6,96,800	0.00	13,960.00	0	0	13,960.00	0.00	0	13,960	0
112	14.3.1.2	14.3.1.2 Providing and fixing anodised aluminium frame double leaf doors of approved brand with styles size 45mm x 48mm x 1.2mm, top rails 58mm x 45mm x 2.5mm, lock rails 48mm x 45mm x 2.5mm, bottom rails 100mm x 45mm x 2.5mm fitted with copper clips of size 28mm x 15mm x 1.2mm complete with automatic floor mounted door closure, butterfly type handles, special cylindrical lock, concealed type aluminium tower bolt, neoprene dryset rubber gasket, clear felt gasket, etc. complete in all respect as directed by the Engineer-in-Charge at all levels including cost of Glass & Glazing									0.00	0.00	0	0	0
113	a)	a) Double Leaf Doors									0.00	0.00	0	0	0
114	i	i) 5mm thick plain tinted glass	sqm	100.00	10,200.00	10,20,000	0.00	10,200.00	0	0	10,200.00	0.00	0	10,200	0
115	ii	ii) Gem thick clear glass	sqm	100.00	10,200.00	10,20,000	30.94	10,200.00	315700.00	0.00	10,200.00	0.00	31	10200.00	315700.0
116	14.3.1.3	14.3.1.3 Providing and fixing anodised aluminium framed single leaf door of approved brand with styles 45mm x 48mm x 2.0mm, top rails 58mm x 45mm x 2.0mm, lock rails 48mm x 45mm x 2.5mm, bottom rails 100mm x 45mm x 2.5mm fitted with copper clips of size 28mm x 15mm x 1.2mm complete with automatic hydraulic mounted door closure, butterfly type handles, special cylindrical locks, concealed type tower bolt, neoprene dryset, rubber gasket, etc. complete as directed by the Engineer-in-Charge at all levels including cost of Glass & Glazing									0.00	0.00	0	0	0
117	a)	a) 5mm clear glass	sqm	100.00	9,400.00	9,40,000	58.31	9,400.00	547999.00	0.00	9,400.00	0.00	58	9400.00	547599.0
118	b)	b) 5mm plain frosted glass	sqm	100.00	9,400.00	9,40,000	0.00	9,400.00	0	0	9,400.00	0.00	0	9,400	0
119	14.3.2	14.3.2 Aluminium Windows & Ventilators									0.00	0.00	0	0	0
120	14.3.2.1	14.3.2.1 Providing, fitting and fixing anodised aluminium windows and ventilators of standard sections of approved brand without horizontal glazing bars joints mitred and welded (manufactured to relevant IS specifications) fitted with glass 3.1mm sqm 100mm long embedded in CC Blocks 150mm x 100mm x 100mm in 1:3:6 mix including providing and fixing handles, fasten stays, casing chain, bolting clamps, locking arrangement, spring catch as required complete as specified and directed for all levels including cost of Glass & Glazing									0.00	0.00	0	0	0

C53

J-POWER PLANT CIVIL WORKS (HRT, Feedback & PH)

Sl. No.	Sl No.(as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							9
111	a)	a) 6mm Frosted Glass	0	636508			0.00	-602796.61		-33706.38	Item not required to be Executed as per site condition.
112	14.3.1.2	14.3.1.2 Providing and fixing anodised aluminium bronz shade roof doors of approved brand with styles size 45mm x 48mm x 3.2mm, top rails 50mm x 45mm x 2.5mm, lock rails 48mm x 45mm x 2.5mm, bottom rails 100mm x 45mm x 2.5mm fitted with copper clips of size 30mm x 15mm x 1.2mm complete with automatic floor mounted door closure, butterfly type handles, special cylindrical lock, concealed type aluminium tower bolt, neoprene dryer rubber gasket, door felt gasket, etc. complete in all respect as directed by the Engineer-in-Charge at all levels including cost of Glass & Glazing	0	0			0.00	0		0.00	
113	a)	a) Gradric Lorel Doors	0	1			0.00	0			
114	i.	i. 5mm thick plain toughed glass	0	1020008			0.00	-864408.78		-155593.22	Item not required to be Executed as per site condition.
115	ii	ii. 6mm thick clear glass	0	704208			696788.44			-107421.56	Item Executed as per site requirement. Work Completed.
116	14.3.1.3	14.3.1.3 Providing and fixing anodised aluminium framed single leaf door of approved make with styles 48mm x 48mm x 2.2mm, top rails 50mm x 45mm x 2.5mm, lock rails 48mm x 45mm x 2.5mm, bottom rails 100mm x 45mm x 2.5mm fitted with copper clips of size 30mm x 15mm x 1.2mm complete with automatic hydraulic mounted door closure, butterfly type handles, special cylindrical locks, concealed type tower bolt, neoprene dryer, rubber gasket, etc. complete as directed by the Engineer-in-Charge at all levels including cost of Glass & Glazing	0	0						0.00	
117	iii	iii) 6mm clear glass	0	39309			-332983.05			-59836.95	Item Executed as per site requirement. Work Completed.
118	iv	iv) 5mm glass frosted glass	0	648000			0.00	-605647.46		-144152.54	Item not required to be Executed as per site condition
119	14.3.2	14.3.2 Aluminium Windows & Ventilators	0								
120	14.3.2.1	14.3.2.1 Providing, fixing and fixing anodised aluminium windows and ventilators of standard sections of approved brand without horizontal glazing bars jamb (vertical and central (manufacturer's relevant IS specifications) fitted with Glass x 2.15mm lugs 100mm long embedded in CC Blocks 150mm x 150mm x 100mm in 1:3:6 mix including providing and fixing handles, friction stays, locking stay, bolting device, locking arrangement, spring catch as required complete as specified and directed for all levels including cost of Glass & Glazing	0								

Sl. No.	Sl. No. as per BOQ	Description of items	Unit	CEA Vetted Cost /BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
121	c)	c) Side Hung and Top Hung Windows and Ventilators									0.00	0.00	0	0	0
122	i	i. 6mm clear glass	sqm	800.00	7,865.00	63,51,200	60.65	7,865.00	484532.50	0.00	7,865.00	0.00	61	7865.00	484532.500
123	ii	ii. 5mm Fenkuri glass	sqm	30.00	8,040.00	2,41,200	0.00	8,040.00	0	0	8,040.00	0.00	0	8,040	0
124	b)	b) Fixed windows and ventilators									0.00	0.00	0	0	0
125	i	i. 6mm clear glass	sqm	33.00	3,850.00	1,27,050	19.90	3,450.00	31999.50	0.00	3,850.00	0.00	16	3850.00	57,099
126	ii	ii. 5mm frosted Glass	sqm	25.00	3,670.00	91,750	0.00	3,670.00	0	0	3,670.00	0.00	0	3,670	0
127	14.3.3	14.3.3 Steel Doors									0.00	0.00	0	0	0
128	14.3.3.1	14.3.3.1 Providing and fixing 1.6mm thick M2 Sheet door with frame of 45x40x5mm angle iron and 3mm MS Gusset Plates at the junctions and corners, all necessary fittings complete including applying a priming coat of approved steel primer									0.00	0.00	0	0	0
129	a)	a) Using MS Angles for 45x40x5mm for diagonal bracings	sqm	10.00	4,420.00	44,200	0.00	4,420.00	0	0	4,420.00	0.00	0	4,420	0
130	14.3.4	14.3.4 PVC, FRP Doors & Door Frames									0.00	0.00	0	0	0
131	14.3.4.1	14.3.4.1 Providing, fitting and fixing Syntex PVC Door frame made out of extruded PVC section in an overall size of 58mm x 82mm having multi chamber cross section with maximum wall thickness of min. +0.3mm with special polymeric reinforcement having an overall size of 32mm x 28mm width, 190mm length at hardware location. The corner joints shall be either mitre cut and welded or joined by means of expanded studs with necessary screws fittings	rm	26.00	370.00	9,480	0.00	370.00	0	0	370.00	0.00	0	370	0
132	14.3.4.2	14.3.4.2 FRP Frame Providing & Fixing of factory made FRP Door Frame having three legged of cross section 98mm x 45mm having angle rebate of 32mm x 15mm to receive shutter of 35mm thickness. The laminate door frame moulded with fire resistant grade unsaturated polyster resin and chopped mat. Door Frame Laminate and shall be filled with suitable wooden block in all the three legs the frame shall be reverse with recessed glass here all sides. MS Strip shall be provided at the bottom to steady the frame	rm	48.00	748.00	35,904	0.00	748.00	0	0	748.00	0.00	0	748	0

C55

J-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(as per BOQ)	Description of items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	change in design/scope	Under/over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							3
121	a)	a) Side Hung and Top Hung Windows and Ventilators	0								
122	i	i. 6mm clear glass	0	1808867.15			-5056856.13			-81017.02	Item Executed as per site requirement. Work Completed.
123	ii	ii. 5mm frosted glass	0	241338			0.00	304406.78		-16793.33	Item not required to be Executed as per site condition.
124	b)	b) Fixed windows and ventilators	0	0			0.00	0			
125	i	i. 6mm clear glass	0	687913			-3511.44			-10648.09	Item Executed as per site requirement. Work Completed.
126	ii	ii. 5mm frosted Glass	0	91745			0.00	-71754.34		-13955.15	Item not required to be Executed as per site condition.
127	14.3.3	14.3.3 Steel Doors	0	0			0.00	0			
128	14.3.3.1	14.3.3.1 Providing and fixing 1mm thick MS Sheet door with frame of 40x40x6mm angle iron and 3mm MS Gusset Plates at the junctions and corners, all necessary fittings complete including applying a priming coat of approved paint primer	0	0			0.00	0			
129	iii	iii) Using MS Angles for 40x40x6mm for diagonal bracings	0	4000			0.00	-31457.43		-4743.17	Item not required to be Executed as per site condition.
130	14.3.4	14.3.4 PVC, FRP Doors & Door Frames	0	0			0.00	0			
131	14.3.4.1	14.3.4.1 Providing, fitting and fixing 6mm PVC Door frame made out of extruded PVC section in an overall size of 50mm x 60mm having multi chamber cross section with minimum wall thickness of 4mm, +0.3mm with special polymeric reinforcement having an overall size of 38mm x 25mm width, 150mm length at hardware location. The corner joints shall be either mitre cut and welded or joined by means an concealed dowels with necessary screws fittings	0	5460			0.00	-4576.27		-823.73	Item not required to be Executed as per site condition.
132	14.3.4.2	14.3.4.2 FRP Frame: Providing & Fixing of factory made FRP Door Frame having three legged of cross section 50mm x 40mm having single rebet of 32mm x 15mm to receive shutter of 35mm thickness. The laminate door frame moulded with fire retardant grade unsaturated polyster resin and chopped strat. Door Frame Laminate and shall be filled with suitable wooden block in all the three legs the frame shall be complete with cavered glass from all sides. MS Stay shall be provided at the bottom to steady the frame	0	39559			0.00	-25365.83		-4564.37	Item not required to be Executed as per site condition.

J-POWER PLANT CIVIL WORKS (NRT, Panipat & PH)

Sl No.	SI No.(as per BOQ)	Description of items	Unit	CEA Vetted Cost /BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
133	14.3.4.3	14.3.4.3 Providing, fitting and fixing PVC Door Shutters of 37mm (Single Panel Seamless Finish) of Sydlex make, of all kinds made o extruded sections in the configuration of "A". The overall dimension is 37mm x 80mm, with usual domestic variation having a wall thickness of 2mm with ± variation of +0.20mm provided with all plastic reinforcement to avoid rusting. The shutter frame is mitred and joined at the corners by means of stainless steel screws. The corners of the frame are being reinforced by polymeric reinforcement for the size 120mm x 200mm and the lock rail is reinforced by 40 x 18 x 2MS razor metal sections	sqm	20.00	2,500.00	51,000	0.00	2,500.00	0	0	2,500.00	0.00	0	2,500	0
	14.3.4.4	14.3.4.4 FRP Flush Door: Supplying & fixing of factory made 35mm thick FRP Moulded Door shutter of required colour made with fire retardant grade unsaturated polyster resin, moulded to 2mm thick FRP laminate for forming hollow rails and styles, with wooden frame & suitable blocks of seasoned wood made at required places for fixing, cost inseparably with 3mm thick FRP laminates for panel and conforming to IS: 14856- 2000 including fixing to frames complete as per the direction of the Engineer-in-Charge	sqm	40.00	4,100.00	1,64,000	0.00	4,100.00	0	0	4,100.00	0.00	0	4,100	0
135	14.3.5	14.3.5 Door & Window Fittings									0.00	0.00	0	0	0
136	14.3.5.1	14.3.5.1 Providing oped fixing mild steel round holding down bolts with nuts and washer plates complete	kg	100.00	80.00	8,000	0.00	80.00	0	0	80.00	0.00	0	80	0
137	14.3.5.2	14.3.5.2 Providing and fixing bolts including nuts & washers complete	kg	200.00	125.00	25,000	0.00	125.00	0	0	125.00	0.00	0	125	0
138	14.3.5.3	14.3.5.3 Providing and Fixing MS Rivets of sizes in position	kg	200.00	210.00	42,000	0.00	210.00	0	0	210.00	0.00	0	210	0
139	14.3.6	14.3.6 Electro Galvanised Iron Fittings Supplying, tiring, fixing electro galvanised iron fittings of approved make, reasonably smooth, free from sharp edges and corners, flows and other defects and with counter sunk holes including necessary screws etc complete									0.00	0.00	0	0	0
140	14.3.6.1	14.3.6.1 Sliding Door Bolts									0.00	0.00	0	0	0
141	a)	a) 200mm x 16mm	each	30.00	220.00	6,600	0.00	220.00	0	0	220.00	0.00	0	220	0
142	b)	b) 250mm x 16mm	each	20.00	200.00	4,000	0.00	200.00	0	0	200.00	0.00	0	200	0
143	14.3.6.2	14.3.6.2 Tower Bolts									0.00	0.00	0	0	0
144	a)	a) 300mm x 10mm	each	10.00	210.00	2,100	0.00	210.00	0	0	210.00	0.00	0	210	0
145	b)	b) 250mm x 10mm	each	10.00	180.00	1,800	0.00	180.00	0	0	180.00	0.00	0	180	0

C57

...POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
133	14.2.4.2	14.2.4.2 Providing, fitting and fixing PVC Door Shutters of 31mm (Single Panel Decorative Finish) of Surface made, of all kinds wards in extended numbers in the amalgamation of 'A'. The overall dimension is 37mm x 90mm, with wood or wood substitute having a wall thickness of 3mm with a variation of +0.03mm provided with all plastic constituent in wood netting. The shutter frame is mitred and joined at the corners by screws of stainless steel screws. The corners of the frame are being reinforced by polyhenic reinforcement to the rate 125mm x 250mm and the lock rail is reinforced by 45 x 16 x 255 size reinforcement	0	51000			0.00	-43320.34		-7178.66	Item not required to be Executed as per site condition
	14.3.4.4	14.3.4.4 FRP Flush Door Supplying & fixing of factory made 20mm thick FRP Panelled Door shutter of required colour made with fire retardant grade unsaturated polyester resin, moulded in 3mm thick FRP laminate for forming hollow rails and styles, with wooden frame & suitable blocks of seasoned wood/resins at required places for fixing, cast monolithically with 5mm thick FRP laminates for panel and conforming to IS: 14856: 2000 including fixing to frames complete as per the direction of the Engineer-in-Charge	0	284000			0.00	-128892.00		-25048.00	Item not required to be Executed as per site condition.
135	14.3.5	14.3.5 Door & Window Fittings	0	0			0.00	0		0.00	
136	14.3.5.1	14.3.5.1 Providing and fixing mild steel sound heavy steel bolts with rods and washer plates complete	0	8200			0.00	-6779.06		-1220.94	Item not required to be Executed as per site condition.
137	14.3.5.2	14.3.5.2 Providing and fixing bolts including nuts & washers complete	0	25850			0.00	-21156.44		-3813.56	Item not required to be Executed as per site condition.
139	14.3.5.3	14.3.5.3 Providing and Fixing MS Rivets of sizes in position	0	42000			0.00	-35093.22		-6906.78	Item not required to be Executed as per site condition.
139	14.3.6	14.3.6 Electro Galvanised Iron Fittings Supplying, fitting, fixing electro galvanised iron fittings of approved make, reasonably smooth, free from sharp edges and corners, burrs and other defects cast with counter sunk holes including necessary screws etc. complete	0	0			0.00	0			
140	14.3.6.1	14.3.6.1 Sliding Door Rails	0	0			0.00	0			
141	a)	a) 300mm x 19mm	0	8600			0.00	-6893.22		-1606.78	Item not required to be Executed as per site condition.
142	b)	b) 250mm x 10mm	0	4000			0.00	-3289.83		-610.17	Item not required to be Executed as per site condition.
143	14.3.6.2	14.3.6.2 Tower Bolts	0	0			0.00	0		0.00	
144	a)	a) 300mm x 10mm	0	3150			0.00	-2689.46		-460.54	Item not required to be Executed as per site condition
145	a)	a) 250mm x 10mm	0	1600			0.00	-1325.42		-274.58	Item not required to be Executed as per site condition

2554

(J)POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl.No.	Sl No.(as per SOQ)	Description of Items	Unit	OEA Vetted Cost (SOQ)			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
146	14.3.6.3	14.3.6.3 MS Door handles									0.00	0.00	0	0	0
147	a)	a) 100mm	each	15.00	45.00	450	0.00	45.00	0	0	45.00	0.00	0	45	0
148	b)	b) 150mm	each	15.00	60.00	900	0.00	60.00	0	0	60.00	0.00	0	60	0
149	14.3.6.4	14.3.6.4 MS Butt Hinge Heavy Type									0.00	0.00	0	0	0
150	a)	a) 80mm x 40mm x 2.5mm	Pair	25.00	63.00	1,680	0.00	63.00	0	0	63.00	0.00	0	63	0
151	b)	b) 15mm x 60mm x 3.15mm	Pair	20.00	107.00	2,140	0.00	107.00	0	0	107.00	0.00	0	107	0
152	14.3.6.5	14.3.6.5 MS Double Acting Spring Hinge									0.00	0.00	0	0	0
153	a)	a) 125mm	Pair	10.00	500.00	5,000	0.00	500.00	0	0	500.00	0.00	0	500	0
154	b)	b) 150mm	Pair	10.00	680.00	6,800	0.00	680.00	0	0	680.00	0.00	0	680	0
155	14.3.6.6	14.3.6.6 Mortice Lock Vertical Type (Mitsa make Bolt Lock- 6 Lever	Set	50.00	1,200.00	60,000	0.00	1,200.00	0	0	1,200.00	0.00	0	1,200	0
156	14.3.6.7	14.3.6.7 Door Closure & Floor Spring: Providing, fitting and fixing Door Closer of various type UL listed and fire rated good quality depending on the door specification and as directed by the Engineer-in-Charge									0.00	0.00	0	0	0
157	a)	a) Heavy Duty Door Closer (Size 185mm x 65mm x 64mm)	each	25.00	2,560.00	51,600	0.00	2,560.00	0	0	2,560.00	0.00	0	2,560	0
158	b)	b) Concealed Door Closer (230mm x 76.5mm x 38.5mm)	each	25.00	5,320.00	1,00,600	0.00	5,320.00	0	0	5,320.00	0.00	0	5,320	0
159	14.3.6.8	14.3.6.8 Providing, fitting and fixing Floor Spring of various weight & type UL listed and fire rated good quality depending on the door specification and as directed by the Engineer-in-Charge									0.00	0.00	0	0	0
160	a)	a) Heavy Duty Floor Spring DI 60 (Size 214mm x 97mm x 40mm)	each	10.00	7,480.00	74,800	0.00	7,480.00	0	0	7,480.00	0.00	0	7,480	0
161	b)	b) Fire rated Floor Spring BRDr BR4 (Size 307mm x 169mm x 40mm/ 307mm x 109mm x 45mm)	each	25.00	10,450.00	2,09,000	0.00	10,450.00	0	0	10,450.00	0.00	0	10,450	0
162	14.3.7	14.3.7 Brass Fittings Supplying, fitting, fixing brass iron fittings of approved make, reasonably smooth, free from sharp edges and corners, flaws and other defects and with counter sunk holes including necessary screws etc. complete									0.00	0.00	0	0	0

J-POWER PLANT CIVIL WORKS (JWT, Bunkwk & PH)

Sl. No.	SI No.(as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	11							7
146	14.3.6.3	14.3.6.3 MS Door handles	0	0			0.00	0		0.00	
147	a)	a) 100mm	0	400			0.00	-361.36		-65.64	Item not required to be Executed as per site condition.
148	b)	b) 150mm	0	500			0.00	-423.73		-76.27	Item not required to be Executed as per site condition.
149	14.3.6.4	14.3.6.4 MS Butt Hinge Heavy Type	0	0			0.00	0		0.00	
150	a)	a) 38mm x 40mm x 2.5mm	0	1600			0.00	-1486.74		-253.25	Item not required to be Executed as per site condition.
151	b)	b) 75mm x 60mm x 3.15mm	0	2240			0.00	-1913.56		-326.44	Item not required to be Executed as per site condition.
152	14.3.6.5	14.3.6.5 MS Double Action Spring Hinge	0	1			0.00	0		0.00	
153	a)	a) 125mm	0	5000			0.00	-4237.29		-762.71	Item not required to be Executed as per site condition.
154	b)	b) 150mm	0	6000			0.00	-5762.71		-1037.29	Item not required to be Executed as per site condition.
155	14.3.6.6	14.3.6.6 Mortice Lock Vertical Type Alstay withe Bolt Lock- 5 Lever	0	6500			0.00	-5898.31		-1601.69	Item not required to be Executed as per site condition.
156	14.3.6.7	14.3.6.7 Door Closure & Floor Spring Providing, fitting and fixing Door Closer of various type UL listed and tno rated good quality depending on the door specification and as directed by the Engineer-in-Charge	0	1			0.00	0		0.00	
157	a)	a) Heavy Duty Door Closer (Size 180mm x 65mm x 64mm)	0	3360			0.00	-2969.49		-390.51	Item not required to be Executed as per site condition.
158	b)	b) Concealed Door Closer (230mm x 76.5mm x 35.5mm)	0	10800			0.00	-9538.98		-1261.02	Item not required to be Executed as per site condition.
159	14.3.6.8	14.3.6.8 Providing, fitting and fixing Floor Spring of various weight & type UL listed and tno rated good quality depending on the floor specification and as directed by the Engineer-in-Charge	0	0			0.00	0		0.00	
160	a)	a) Heavy Duty Floor Spring D100 (Size 27mm x 57mm x 40mm)	0	15600			0.00	-13786.44		-1813.56	Item not required to be Executed as per site condition.
161	b)	b) Fire rated Floor Spring BMDU 6800 (Size 35mm x 165mm x 40mm/ 267mm x 120mm x 40mm)	0	200000			0.00	-176694		-23881.36	Item not required to be Executed as per site condition.
162	14.3.7	14.3.7 Brass Fittings Supplying, fitting, fixing brass extra fittings of approved make, reasonably smooth, free from sharp edges and corners, flows and other defects and with counter sunk holes including necessary screws etc. complete	0	0			0.00	0		0.00	

~ 556 ~

				CSA Variant Item (BOQ)			Completed as on May'24			As per Revised Cost Estimate at May 2024 Price Level					
										Executed Liabilities /Balance Works			Total		
Sl. No.	Sl No/(as per BOQ)	Description of Items	Unit	Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
163	14.3.7.1	14.3.7.1 Sliding Door Bolts									0.00	0.00	0	0	0
164	a)	a) 300mm x 10mm	each	30.00	1,100.00	33,000	0.00	1,100.00	0	0	1,100.00	0.00	0	1,100	0
	b)	b) 250mm x 10mm	each	20.00	1,020.00	20,400	0.00	1,020.00	0	0	1,020.00	0.00	0	1,020	0
166	14.3.7.2	14.3.7.2 Tower Bolts									0.00	0.00	0	0	0
167	a)	a) 300mm x 10mm	each	15.00	500.00	7,500	0.00	500.00	0	0	500.00	0.00	0	500	0
168	b)	b) 250mm x 10mm	each	10.00	165.00	1,650	0.00	165.00	0	0	165.00	0.00	0	165	0
169	14.3.7.3	14.3.7.3 Door Handles									0.00	0.00	0	0	0
	a)	a) 140mm	each	10.00	87.00	870	0.00	87.00	0	0	87.00	0.00	0	87	0
171	b)	b) 150mm	each	10.00	110.00	1,100	0.00	110.00	0	0	110.00	0.00	0	110	0
172	14.3.7.4	14.3.7.4 Bolt Hasp									0.00	0.00	0	0	0
173	a)	a) 125mm x 50mm x 4mm	Pair	20.00	590.00	11,800	0.00	590.00	0	0	590.00	0.00	0	590	0
174	b)	b) 150mm x 50mm x 4mm	Pair	20.00	439.00	8,850	0.00	439.00	0	0	439.00	0.00	0	439	0
175	14.3.7.5	14.3.7.5 Spring Hinge									0.00	0.00	0	0	0
176	a)	a) 125mm	Pair	10.00	1,380.00	13800	0.00	1,380.00	0	0	1,380.00	0.00	0	1,380	0
177	b)	b) 150mm	Pair	10.00	1,550.00	15,500	0.00	1,550.00	0	0	1,550.00	0.00	0	1,550	0
178	14.3.7.6	14.3.7.6 Mortised Lock Victoria Type 75mm	each	30.00	1,820.00	54,600	0.00	1,820.00	0		1,820.00	0.00	0	1,820	0
179	14.3.8	14.3.8 Rolling Shutter Supplying and fixing rolling shutters of approved make, made of required size M.S Laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shafts with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27 Swg long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454- Part I and MS Top Cover of required thickness for rolling shutters.										0.00	0.00	0	0.00	0

C61

J-POWER PLANT CIVIL WORKS (HRT, Penstock &PH)

Sl. No.	Sl No./Unit per BOQ	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under river estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
163	14.3.7.1	14.3.7.1 Sliding Door Bolts	0	0			0.00	0		0.00	
164	a)	a) 300mm x 16mm	0	53000			0.00	-27966.10		5033.30	Item not required to be Executed as per site condition.
	a)	a) 250mm x 16mm	0	30400			0.00	-17265.14		3111.86	Item not required to be Executed as per site condition.
166	14.3.7.2	14.3.7.2 Tower Bolts	0	0			0.00	0		0.00	
167	a)	a) 500mm x 10mm	0	7300			0.00	-6355.53		-1144.37	Item not required to be Executed as per site condition.
168	b)	b) 250mm x 10mm	0	1550			0.00	-1567.68		-282.20	Item not required to be Executed as per site condition.
169	14.3.7.3	14.3.7.3 Door Handles	0	0			0.00	0		0.00	
	a)	a) 150mm	0	670			0.00	-737.29		-132.71	Item not required to be Executed as per site condition.
171	b)	b) 150mm	0	1100			0.00	-912.20		-197.80	Item not required to be Executed as per site condition.
172	14.3.7.4	14.3.7.4 Butt Hinge	0	0			0.00	0		0.00	
173	a)	a) 125mm x 50mm x 4mm	0	11800			0.00	-10000		-1800.00	Item not required to be Executed as per site condition.
174	b)	b) 100mm x 50mm x 4mm	0	8800			0.00	-7288.14		-1311.86	Item not required to be Executed as per site condition.
175	14.3.7.5	14.3.7.5 Spring Hinge	0	0			0.00	0		0.00	
176	a)	a) 125mm	0	13800			0.00	-11494.92		-2305.08	condition.
177	b)	b) 150mm	0	15500			0.00	-12718.99		-2284.41	condition.
178	14.3.7.6	14.3.7.6 Mortised Lock Vertical Type 75mm	0	54600			0.00	-46271.19		-8328.81	condition.
179	14.3.8	14.3.8 Rolling Shutter Supplying and fixing rolling shutters of approved make, made of required size MS Laths, interlocked together through their entire length and jointed together at the end by end locks ,mounted on specially designed pipe shafts with brackets, side guides and arrangements for inside and outside locking with pad/s and pad operation complete, including the cost of providing and fixing necessary 27.5cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454- Part I and MS Top Cover of required thickness for rolling shutters	0	0			0.00	0		0.00	

C62

J-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	SR No.(As per BOQ)	Description of Items	Unit	CEA Vetted Cost/BOQ			As per Revised Cost Estimate at May 2021 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
100	14.3.6.1	14.3.6.1 80 x 125mm MS Latta with 1.25mm thick tos cover	sqm	100.00	2,940.00	2,94,000	157.71	2,940.00	463667.40	0.00	2,940.00	0.00	158	2940.00	463667.40
101	14.3.6.2	14.3.6.2 Providing & Fixing Ball Bearing for Rolling Shutter	each	20.00	400.00	8,000	8.00	400.00	3200.00	0.00	400.00	0.00	8	400.00	3,200
102	14.3.6.3	14.3.6.3 Extra for providing mechanical device studs and crank operation for operating rolling shutters Excavating 10 Sqm in once	sqm	60.00	1,100.00	66,000	157.71	1,100.00	173481.00	0.00	1,100.00	0.00	158	1100.00	173481.0
103	14.4	14.4 Painting Works									0.00	0.00	0	0.00	0
104	14.4.2	14.4.1 Construction of chamber for 100mm stoneo valve; Providing two coats of JK wall Putty (White Cement based putty for Concrete/ Mortar walls and ceiling both internal and external) after removing all loosely adhering material from the wall surface with the help of emery stone, putty blade or wire brush and smoothening the wall with sufficient quantity of clean water as specified and directed by the Engineer-in-Charge (total thickness of two coats is maximum 1.0mm)	sqm	16500.00	75.00	12,37,500	20,029.950	75.00	1501628.75	108.20	75.00	7580.00	20,138	75.00	1504438.750
105	14.4.2	Exterior Painting									0.00	0.00	0	100.00	0
106	14.4.2.1	14.4.2.1 Finishing walls with water proofing Cement Paint of Required Shade: (two or more coats applied @ 3.84 kg/10 sqm)	sqm	3300.00	80.00	2,15,000	0.00	00.00	0	0	80.00	0.00	0	80	0
107	14.4.2.2	14.4.2.2 Finishing Walls with textured exterior paint of required shade (two or more coats applied @ 1.28 ltr/10 sqm) over & including priming coat of exterior primer applied @ 2.2kg/10 sqm	sqm	2600.00	230.00	5,15,000	0.00	230.00	0	0	230.00	0.00	0	230	0
108	14.4.2.3	14.4.2.3 Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade: (two or more coats applied @ 1.43 ltr/ 10 sqm over & including priming coat of exterior primer applied @ 2.28 kg/10 sqm)	sqm	1500.00	160.00	2,40,000	4,533.00	160.00	725065.80	100	160.00	16000.00	4,634	160	741388.80
109	14.4.3.1	14.4.3.1 Finishing with deluxe Multi Surface Paint System for interiors and exteriors using Primer as per Manufacturers Specifications and as directed by the Engineer-in-Charge									0.00	0.00	0	0.00	0
110	c)	c) Two or more coats applied on walls @ 1.25 ltrs/ 10 sqm over and including one coat of special primer applied @ 0.75 ltrs/ 10 sqm	sqm	4000.00	140.00	5,60,000	19,145.57	140.00	2680539.80	100.00	140.00	14000.00	19,250	140.00	2694539.80

C63

JHOWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under/Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	10	11							7
183	14.3.8.1	14.3.8.1 80 x 1.25mm MS Lathi with 1.25mm thick top cover	189607.4	0			143789.81	0		25851.47	Inadequate Provision in BOQ. Item Executed as per site requirement. Work Completed.
184	14.3.8.2	14.3.8.2 Providing & Fixing Ball Bearing for Rolling Shutter	0	4693			-4007.82			-732.20	Item Executed as per site requirement. Work Completed.
185	14.3.8.3	14.3.8.3 Extra for providing mechanical device chain and crank operation for operating rolling shutters Exceeding 10 Sqm in area	85681	0			72941.53	0		13309.47	Inadequate Provision in BOQ. Item Executed as per site requirement. Work Completed.
186	14.4	14.4 Painting Works	0	0			0.00	0		0.00	
187	14.4.2	14.4.2 Construction of chamber for 100mm dia/sq mtrs: Providing two coats of 20 mm thick Putty (White Cement based putty for Concrete/ Mortar work and ceiling both internal and external) after removing all loosely adhering materials on the surface with the help of sand/emery stone, putty blocks or wire brush and moistening the wall with sufficient quantity of clean water as specified and directed by the Engineer-in-Charge (total thickness of two coats is maximum 1.5mm)	649938.75	0			548253.18	0		98685.57	Inadequate Provision in BOQ. Excess quantity executed in Painting works of other buildings like, DG Room, Valve House Control Room, Security Room, etc. Work Completed, Final Bill yet to be raised by the contractor
188	14.4.2	Exterior Painting	0	0			0.00	0		0.00	
189	14.4.2.1	14.4.2.1 Finishing walls with water proofing Cement Paint of Required Shade (two or more coats applied @ 3.84 kg/10 sqm)	0	215000			0.00	-1368949.13		-48708.83	Item not required to be Executed as per site condition.
190	14.4.2.2	14.4.2.2 Finishing Walls with textured exterior paint of required shade (two or more coats applied @ 3.28 lts/10 sqm) over & including priming coat of exterior primer applied @ 2.2kg/10 sqm	0	670000			0.00	-467358.14		-6711.60	Item not required to be Executed as per site condition.
191	14.4.2.3	14.4.2.3 Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade (two or more coats applied @ 1.42 ltr/ 10 sqm) over & including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	551359.6	0			424906.76	0		75653.09	Inadequate Provision in BOQ. Excess quantity executed in Painting works of other buildings like, DG Room, Valve House Control Room, Security Room, etc. Work Completed, Final Bill yet to be raised by the contractor.
192	14.4.3.1	14.4.3.1 Finishing with sixteen Multi Surface Paint System for interiors and exteriors using Primer as per Manufacturers Specifications and as directed by the Engineer-in-Charge	0	0			0.00	0		0.00	
193	nil	a) Two or more coats applied on walls @ 1.25 litres/ 10 sqm over and including one coat of special primer applied @ 0.75 litre/ 10 sqm	2134028.8	0			1499271.22	0		326868.18	Inadequate Provision in BOQ. Excess quantity executed in Painting works of other buildings like, DG Room, Valve House Control Room, Security Room, etc. Work Completed, Final Bill not to be raised by the contractor.

C64

J:POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(as per BOQ)	Description of Items	Unit	CEA Vetted Cost /DOD			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on Nov'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
190	ii)	b) Finishing with Epoxy Paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation on surface, etc. complete as per specification and as directed by the Engineer-in-Charge: On Concrete Works	sqm	5800.00	187.00	9,10,600	823.19	187.00	153836.53	0.00	187.00	0.00	823	187.00	153836.530
193	14.4.4	14.4.4 Painting of Steel Works									0.00	0.00	0	0.00	0
194	14.4.4.1	14.4.4.1 Painting with Alkyd Multi Surface Paint System for interior and exterior using Primer as per Manufacturers Specifications and as directed by the Engineer-in-Charge									0.00	0.00	0	0.00	0
195	ii)	a) Painting Steel Work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.20 litre/10 sqm over an under coat of primer applied @ 0.80 litre/ 10 sqm of approved brand and manufacturer	sqm	200.00	125.00	25,000	646.57	125.00	80870.75	200.00	125.00	25000.00	847	125.00	105870.750
196	ii)	b) Finishing with Epoxy Paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation on surface, etc. complete as per specification and as directed by the Engineer-in-Charge: On Steel Works	sqm	200.00	180.00	36,000	0.00	180.00	0	200	180.00	36000.00	200	180	36,000
197	14.4.4.2	14.4.4.2 Painting (two or more coats) on rain water, soil waste and vent pipes and fittings with synthetic enamel paint of approved brand and manufacturer and required colour over a priming coat of approved steel primer on new work									0.00	0.00	0	0	0
198	ii)	a) 100mm Diameter Pipes	rm	100.00	60.00	6,000	0.00	60.00	0	0	60.00	0.00	0	60	0
199	ii)	a) 150mm Diameter Pipes	rm	200.00	80.00	16,000	0.00	80.00	0	0	80.00	0.00	0	80	0
200	14.5	14.5 Spandrel Glass Panelling									0.00	0.00	0	0	0
201	14.5.1	14.5.1 Providing, fabricating and supplying stainless tiles of required size and shape, for fixing in the spandrel portion of the structural glazing, in linear as well as curvilinear portions of the building by providing non-cogd, inorganic, non-combustible fibre glass wool insulation 50mm thick, conforming to IS: 8183 and BS: 3958 Part 5. The insulation layer shall have facing (factory bonded on surface # 1 of the fibre glass insulation layer) of black non-woven fibre glass tissue of nominal thickness 0.5mm and nominal mass not less than 60gm/sqm, made of randomly oriented glass fibres distributed in a binder by a wet lay process including 1.5mm thick solid aluminium sheet backing using 6mm thick cement board including SS rivets, nuts, bolts, washers, etc. complete.	sqm	1500.00	1,880.00	28,20,000	0.00	1,880.00	0	300	1,880.00	564000.00	300	1,880	564000.0
202	14.5.2	14.5.2 Providing and supplying Spandrel Glass panels comprising of 6mm thick heat strengthened monolithic float glass of approved colour and shade with reflective soft coating on surface # 2 of approved colour and shade so as to match the colour and shade so as to match the colour and shade of the IGUs in the vision panels etc. all complete for the required performances as specified, as per the Architectural Drawings, as per the approved shop drawings, as specified, and as directed by the Engineer-in-Charge	sqm	1500.00	2,120.00	31,80,000	0.00	2,120.00	0	600	2,120.00	1272000.00	600	2,120	1272000.0
203	14.6	14.6 False Ceiling & Partition Works									0.00	0.00	0	0.00	0

~ 561 ~

J-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under/Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
192	iii	iii) Finishing with Epoxy Paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation on surface, etc. complete as per specification and as directed by the Engineer-in-Charge On Concrete Works	0	781362.47			-681918.18			-119143.29	Item executed as per site requirement. Work Completed.
193	14.4.4	14.4.4 Painting of Steel Works	0	0			0.00	0		0.00	
194	14.4.4.1	14.4.4.1 Finishing with deluxe Matt Surface Paint Spectrum for interiors and exteriors using Primer as per Manufacturers Specifications and as directed by the Engineer-in-Charge	0	0			0.00	0		-	
195	iii	a) Painting Steel Work with Deluxe Matt Surface Paint or glue as over shade. Two or more coat applied @ 0.90 lter/10 sqm over an under coat of primer apple @ 0.60 liter/ 10 sqm of approved brand and manufacturer	80670.75	0			67550.57	0		13218.18	Item/quan. Provision in BOM. Work Completed, Final Bill yet to be raised by the contractor.
196	iii	iii) Finishing with Epoxy Paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation on surface, etc. complete as per specification and as directed by the Engineer-in-Charge. On Steel Works	0	0			0.00	0			Item is yet to start
197	14.4.4.2	14.4.4.2 Painting (two or more coats) on ram water, pot vessel and vent pipes and fittings with synthetic enamel paint of approved brand and manufacturer and required colour over a priming coat of approved steel primer on new work	0	0			0.00	0			
198	vi	vi) 100mm Sprinkler Pipes	0	6000			0.00	-5094.76		-905.25	Item not required to be Executed as per site condition.
199	iv	iv) 150mm Sprinkler Pipes	0	15000			0.00	-12734.24		-2263.76	Item not required to be Executed as per site condition.
200	14.5	14.5 Specialist Glass Pane/Seg	0	0			0.00	0			
201	14.5.1	14.5.1 Providing, fabricating and supplying shadow box of required size and shape, for fixing in the openings portion of the structural glazing, in line or as well as curvilinear portions of the building by providing semi-rigid, inorganic, non-combustible fibre glass wool insulation 50mm thick, conforming to IS: 8183 and BS: 3958 Part: 5. The insulation layer shall have tissue factory bonded on surface # 1 of the fibre glass insulation layer), of black non-reverse fibre glass tissue of nominal thickness 0.5mm and nominal mass not less than 50gm/sqm, made of randomly oriented glass fibres distributed in a binder by a wet-lay process including 1.5mm thick solid aluminium sheet backing using 6mm thick cement board including GS rivets, nuts, bolts, washers, etc. complete.	0	2256000			0.00	-1511904.41		-344125.59	Work Executed as per site requirement. Work Completed. Final Bill yet to be raised by the contractor.
202	14.5.2	14.5.2 Providing and supplying Spandrel Glass panels comprising of 6mm thick toughened monolithic float glass of approved colour and shade with reflective soft coating on surface# 2 of approved colour and shade so as to match the colour and shade of the IGUs in the vision panels etc. all complete for the required performances as specified, as per the Architectural Drawings, as per the approved shop drawings, as specified, and as directed by the Engineer-in-Charge	0	1808000			0.00	-1210943.153		-291056.85	Work Executed as per site requirement. Work Completed. Final Bill yet to be raised by the contractor.
203	14.6	14.6 False Ceiling & Partition Works	0	0			0.00	0			

C66

J-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(as per BOQ)	Description of Items	Unit	CEA Vetted Cost/BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Completed vs on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
204	14.6.1	14.6.1 Ceiling with Exposed Metal (GI) Frame Work with E-Grid 0431 Providing & Fixing in position Suspended false Ceiling using B- Grid (Exposed Ceiling Suspension 2438 System) of grid size 600mm x 600mm/ 1200mm x 600mm with main runner 38mm x 24mm, Cross Tee 28mm x 24mm & wall angle 24mm x 24mm. Using 4mm/ 6mm thick High pressure Stern Guard Non Asbestos Fibre cement Board as per IS: 14862, to be placed in a grid of										0.00	0.00	0	0.00	0
205	14.6.1.1	14.6.1.1 Standard Ceiling as directed by the Engineer-in-Charge										0.00	0.00	0	0.00	0
206	a)	a) Using 6mm thick FC Board	sqm	500.00	1,210.00	6,05,000	450.71	1,210.00	545415.00	0.00	1,210.00	0.00	451	1210.00	545415.00
207	14.6.1.2	14.6.1.2 Designer Ceiling as directed by the Engineer-in-Charge										0.00	0.00	0	0.00	0
208	a)	a) Using 6mm thick FC Board	sqm	1000.00	1,430.00	14,30,000	0.00	1,430.00	0.00	0.00	1,430.00	0.00	0	1430.00	0
209	14.6.2	14.6.2 Pre- Laminated Partion Board										0.00	0.00	0	0.00	0
210	14.6.2.1	14.6.2.1 Providing, fitting and fixing in position 62mm thick double side partition with wall assistance Sal. Bonzum/ Sandil/ Hollock frame in size 75mm x 38mm and internal bars of 50mm x 38mm and fixing on both sides 8mm thick fire pressed melamine faced pre- laminated flaxgauge board medium density fibre boards (MDF) bonded with phenol formaldehyde synthetic resin of approved grade as specified and directed at all levels. With boys- cotonex grade (exc side dimension) 8 mm thick	sqm	500.00	5,800.00	29,00,000	0.00	5,800.00	0.00	0.00	5,800.00	0.00	0	5029.00	0
211	14.7	14.7 Water Proof Coatings										0.00	0.00	0	0.00	0
212	14.7.1	14.7.1 Applying one coat of epoxy coating followed by two coats of Polyurethane Waterproofing coating at an interval of 12 hours cush for waterproofing as specified & directed by the Engineer-in-Charge	sq/m	1500.00	630.00	9,45,000	0.00	630.00	0		630.00	0.00	0	630	0
213	14.7.2	14.7.2 Applying 2 coats of 1mm thick acrylic polymer modified cementitious waterproofing coating at approved brand for waterproofing of structures structures as specified after proper surface preparation and soaking the surface with water prior to application complete in all respect as per technical specification and as directed by the Engineer-in-Charge	sqm	1500.00	430.00	6,45,000	380.00	430.00	163400.00	200.00	430.00	86000.00	502	430.00	254360.0
214	15	15 Repairing of Existing Damaged Concrete										0.00	0.00	0	0.00	0
215	15.1	15.1 Installation of injection system for epoxy grout/ non- shrink grout. Installation of non-returnable Packers fixed at required interval including drilling of holes upto a depth of approx. 1/3rd depth of the concrete thickness using a heavy duty drill machine, cleaning of holes, fixing of packers with recessed mortar of epoxy mortar, etc. complete in all respect including all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	Nos	8960.00	360.00	19,60,000	11,312.000	360.00	4072320.00	0.00	360.00	0.00	11,312	360.00	4072320.0

C67

J-POWER PLANT CIVIL WORKS (HRT, Pondock & PH)

Sl. No.	Sl No.(as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variations over 10)						REMARKS / REASONS OF DEVIATION
			Pos(Excess)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
204	14.6.1	14.6.1 Ceiling with Exposed Metal (GI) Frame Work with E-Grid 2438 Providing & Fixing in position Suspended false Ceiling using G- Grid (Exposed Ceiling Suspension 2438 System) of grid size 600mm x 600mm/ 1200mm x 600mm with main runner 38mm x 24mm, Cross Tee 23mm x 24mm & wall angle 24mm x 24mm, Using 4 mm/ 5mm thick High pressure Stern Cured Non Asbestos Fibre cement Board as per IS: 14862, to be placed in a grid of	0	0			0.00	0			
205	14.6.1.1	14.6.1.1 Standard Ceiling as directed by the Engineer-in-Charge	0	0			0.00	0			
206	40	a) Using 6mm thick FC Board	0	58580.4			-50451.66			-8058.54	Work Executed as per site requirement. Work Completed.
207	14.6.1.2	14.6.1.2 Designer Ceiling as directed by the Engineer-in-Charge	0	0			0.00	0		0.00	
208	41	a) Using 8mm thick FC Board	0	1453000			0.00	-1211564.41		-181235.59	Item not required to be Executed as per site condition.
209	14.6.2	14.6.2 Pre-Laminated Particle Board	0	0			0.00	0		0.00	
210	14.6.2.1	14.6.2.1 Providing, fitting and fixing in position 62mm thick double skin partition with wall assurement Sal, Semwal/ Shisham/ Kail/ Haldoo/ Teakwood in size 75mm x 38mm and internal frame of 50mm x 38mm and fixing on both sides 8mm thick flat pressed melamine faced pre- laminated baggage board/ medium density fibre boards (MDF) bonded with internal formaldehyde synthetic resin of approved shade as specified and directed at all levels. With bajaj- valance grade (one side decorative) 8 mm thick	0	2950000			0.00	-2360474.58		-421525.42	Item not required to be Executed as per site condition
211	14.7	14.7 Water Proof Coatings	0	0			0.00	0			
212	14.7.1	14.7.1 Applying one coat of epoxy coating followed by two coats of Polyurethane Waterproofing coating at an interval of 12 hours each for waterproofing as specified & directed by the Engineer-in-Charge	0	941000			0.00	-809847.46		-144152.54	Item not required to be Executed as per site condition
213	14.7.2	14.7.2 Applying 2 coats of Trowel Grade acrylic polymer modified cementitious waterproofing coating of approved brand for waterproofing of structures/ structures as specified after proper surface preparation and sealing the surface with water joint in application complete in all respect as per technical specification and as directed by the Engineer-in-Charge	0	388440			-330881.36			-57558.64	Work Executed as per site requirement. Work Completed.
214	15	15. Repairing of Existing Damaged Concrete	0	0			0.00	0		0.00	
215	15.1	15.1 Installation of injection system for epoxy grout/ non- shrink grout, installation of non-returnable Packers fixed at required interval including drilling of holes upto a depth as approx. 150ml depth of the concrete structure using a heavy duty drill machine, cleaning of holes, fixing of packers with structural mortar or epoxy mortar, etc. complete in all respect including all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	2952300	0			2752192.14	0		310107.42	

C68

J-POWER PLANT CIVIL WORKS (HRT, Pansaka & PH)

Sl. No.	Sl No (as per BOQ)	Description of Items	Unit	CEA Vetted Cost/BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Considered as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	6	6	7	8	9	10	11	12	13	14	15	16
216	15.2	15.2 Cutting both sides of construction joints in V Groove of size as directed by the Engineer-in-Charge along the construction joints for application of high grade dual shrinkage compensated epoxy mortar complete in all respect including labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	rm	1600.00	410.00	7,28,000	2,713.715	410.00	1137223.15	0.00	410.00	0.00	2,774	410.00	1137223.150
217	15.3	15.3 Placing of high grade dual shrinkage compensated epoxy repair mortar for repair of designated locations as directed by the Engineer-in-Charge with high flow, single component, dual shrinkage compensated, cementitious micro concrete that achieves a comprehensive strength of minimum 50 MPa in 3 days and 70MPa in 28 days, complete in all respect with all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	kg	1200.00	1,600.00	19,20,000	5,996.000	1,600.00	18883825.00	0.00	1,600.00	0.00	5,996	1600.00	18883825.0
218	15.4	15.4 Application of Epoxy Grout Application of low viscous, high reactive, thixotropic epoxy grout with hardner solution through already fixed non-returnable packers along the cracks/ construction joints using medium to high pressure special injection pumps. The mixing should be done as per the manufacturer's specification and using specialized applicator. The amount of hardner per litre depends on the required pot life at persent ambient temperature, the epoxy hardner shall be mixed until the colour gets uniform and application shall be carried out before the pot life. Complete in all respect with all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	kg	1200.00	1,200.00	16,80,000	5,443.000	1,200.00	6532080.00	0.00	1,200.00	0.00	5,444	1200.00	6532080.0
219	15.5	15.5 Restrengthening Works									0.00	0.00	0	0	0
220	15.5.1	15.5.1 Restrengthening of RCC Members by the following processes as ipproved and directed by the Engineer-in-Charge/ competent at all levels									0.00	0.00	0	0	0
221	15.5.1.1	15.5.1.1 Giving patch work in oppression of concrete surface wherever necessary by mixing epoxy putty, Carerepair 2000 of BASF India Ltd. or equivalent as specified & directed by the Engineer-in-Charge complete after proper surface preparation and proper scraping of concrete protrusion	sqm	1600.00	2,200.00	22,00,000	0.00	2,200.00	0	0	2,200.00	0.00	0	2,200	0

C69

J-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.as per BOQ	Description of Items	Variation		VARIATION ANALYSIS (Variation Rs/ M)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							1
216	15.2	15.2 Cutting both sides of construction joints in V Groove of size as directed by the Engineer-in-Charge along the construction bl joints for Application of high grade dual shrinkage compensated epoxy mortar complete in all respect including labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	388223.15	0			336024.76	0		60898.41	
217	15.3	15.3 Placing of high grade dual shrinkage compensated epoxy repair mortar for repair of designated locations as directed by the Engineer-in-Charge with high flow, single component, dual shrinkage compensated, cementitious mixe concrete that achieves a compressive strength of minimum 50 MPa in 3 days and 70MPa in 28 days, complete in all respect with all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	14373600	0			-11993710.86	0		2146820.14	Inadequate provision in BOQ. Owing to site conditions, the executed quantities of epoxy mortar, epoxy grout etc. are more due to extensive damage of concrete surface in HRTs. Work Completed.
218	15.4	15.4 Application of Epoxy Grout Application of low viscous, high swelling, Solventless epoxy grout with hardner solution through already fixed non-returnable packers along the cracks/ construction joints using medium to high pressure special injection pumps. The mixing should be done as per the manufacturer's specification and using specialized applicator. The amount of hardner per litre depends on the required pot life at prevalent ambient temperature, the epoxy hardner shall be mixed until the colour gets uniform and application shall be carried out within the pot life. Complete in all respect with all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	4972200	0			4212738.81	0		759471.19	
219	15.5	15.5 Primary lightening Works	0	0			0.00	0		0.00	
220	15.5.1	15.5.1 Restoring/shoring of RCC Members by the following processes as specified and directed by the Engineer-in-Charge complete in all levels	0	0			0.00	0		0.00	
221	15.5.1.1	15.5.1.1 Doing patch work in depression of concrete surface wherever necessary by using epoxy putty, Conmaster 2200 of BASF India Ltd. or equivalent as specified & directed by the Engineer-in-Charge complete after proper surface preparation and proper scrapping of concrete protrusion	0	2200000			0.00	-1661406.78		338593.22	Item not required to be Executed as per site condition.

~ 995 ~

C70

JHPONER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. no.	Sr No.(as per BOQ)	Description of items	Unit	CEA Vetted Cost/BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Considered up on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
222	15.5.2	15.5.2 Application of MBRACE Fibre strengthening System of BASF India Ltd. or equivalent including laminate and sheet products for increasing the strength of concrete structures.									0.00	0.00	0	0	0
223	15.5.2.1	15.5.2.1 In Columns Purchase, supply and application of MBRACE CF 230: Unidirectional Carbon Fibre reinforcement System of BASF India Ltd. or equivalent having 480 gm/sqm weight and having modulus of elasticity of 240 MN/mm2 on the entire length of the beam with one layer after proper application of Concresive 3200 at the entire beam area at a thickness of 2mm, which will be followed by the application of MBRACE saturant on the green condition and after proper wrapping the second layer of MBRACE triaxium to be applied. Sand to be broadcasted over the MBRACE saturant layer in green condition for application of anti slip paved or plastering	sqm	480.00	6,300.00	25,20,000	0.00	6,300.00	0	0	6,300.00	0.00	0	4,200	0
224	15.5.2.2	15.5.2.2 In Slabs & Beams: Purchase, supply and application of ready to use Carbon laminates (Fibre Reinforced Polymer) for the reinforcement of concrete elements with MBRACE FRP Laminates of 165/0505, 50mm wide & 1.4mm thick system or equivalent at the bottom portion of the beam, after application of MBRACE Laminate Adhesive or equivalent, which is having minimum 3.5 MPa adhesion strength	rm	580.00	4,600.00	23,29,000	0.00	4,600.00	0	0	4,600.00	0.00	0	4,600	0
225	15.5.3	15.5.3 Strengthening with Glass Fibre	sqm	1000.00	3,500.00	35,00,000	0.00	3,500.00	0	0	3,500.00	0.00	0	1,000	0
226	15.6	15.6 Application of Micro Concrete/ Retrofitting / Rebounding/Shotcrete									0.00	0.00	0	0	0
227	15.6.1	15.6.1 Chipping and breaking/ cutting of loose concrete, mortars, etc. using Electrical Chipping Hammers to the satisfaction of the Engineer-in-Charge for successful execution of the concrete rehabilitation works at all heights with all leads, lifts, etc. complete with all tools and implements required for the job, operator, application, labour, scaffolding for staging and supervision, etc.	sqm	580.00	170.00	85,000	77.45	170.00	13165.50	0.00	170.00	0.00	77	170.00	13,161
228	15.6.2	15.6.2 Providing and applying two coats of Alkaline Primer a low consumed epoxy zinc rich primer/ Sika Top Armatec 108 or equivalent product on the properly cleaned and prepared steel bars after the required chipping and cleaning of the concrete surface as per the manufacturer's specifications	sqm	580.00	600.00	3,00,000	0.00	600.00	0	0	600.00	0.00	0	600	0
229	15.6.3	15.6.3 Before laying of the Micro Concrete, the substrate shall be coated with a bonding agent, Nitobond EP Std./ Sikadur-32 LP or equivalent product and the micro concrete shall be placed within 6 hour 4hrs or as applicable at the application of the Bonding Agent	sqm	580.00	950.00	4,75,000	72.51	950.00	68863.50	0.00	950.00	0.00	74	950.00	69,864

Sl. No.	Sl No.(as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
222	15.5.2	15.5.2 Application of MBRACE Fibre reinforcing System of BASF India Ltd. or equivalent including laminate and allied products for increasing the strength of concrete structures.	0	0			0.00	0		0.00	
223	15.5.2.1	15.5.2.1 In Columns: Purchase, supply and application of MBRACE CF 230- Unidirectional Carbon Fibre reinforcement System of BASF India Ltd. or equivalent having 400 gm/sqm weight and having modulus of elasticity of 240 kN/mm2 in the entire length of the beam with one layer after proper application of Concressive 2200 at the entire beam area at a thickness of 2mm, which will be followed by the application of MBRACE saturant as the given condition and after proper wrapping the saturant layer of MBRACE saturant to be applied. Sand to be broadcasted over the MBRACE saturant layer in given condition for application at and top accord of plastering	0	2000000			0.00	-2120000.00		-384450.78	Item not required to be Executed as per site condition.
224	15.5.2.2	15.5.2.2 In Slabs & Beams: Purchase, supply and application of ready to use Carbon laminates (Fibre Reinforced Polymer) for the reinforcement of concrete elements with MBRACE FRP Laminates of 165/2500, 50mm wide & 1.4mm thick system or equivalent at the bottom portion of the beam, after application of MBRACE Laminate Adhesive or equivalent, which is having minimum 2.5 MPa adhesion strength	0	2125000			0.00	+970336.00		-3540011.02	Item not required to be Executed as per site condition.
225	15.5.3	15.5.3 Strengthening with Glass Fibre	0	3000000			0.00	-3000674.00		-541925.42	Item not required to be Executed as per site condition
226	15.6	15.6 Application of Micro Concrete for Retrofitting / Restrengthening	0	0			0.00	0			
227	15.6.1	15.6.1 Chipping and breaking/ cutting of loose concrete, mortars, etc. using Electrical Chipping Hammers to the satisfaction of the Engineer-in-Charge for successful execution of the subsequent rehabilitation works at all heights with all tools, lifts, etc. complete with all tools and machineries required for the job., operator, applicator, labour, scaffolding for winging and supervision, etc.	0	71603.3			40875.63			-10957.69	Item Executed as per site requirement. Work Completed.
228	15.6.2	15.6.2 Providing and applying two coats of Nitobond Primer (a low component epoxy zinc rich primer/ Zinc Tau Amadine- 105 or equivalent product as the properly cleaned and prepared steel bars after the required chipping and cleaning of the concrete surface as per the manufacturer's specifications	0	100000			0.00	-294327.28		-46762.71	Item not required to be Executed as per site condition
229	15.6.3	15.6.3 Before laying of the Micro Concrete, the substrate shall be coated with a bonding agent, Nitobond EP 5121/ Sikadur- 32 LP or equivalent product and the micro concrete shall be placed within 8 hrs/ 4hrs or as applicable of the	0	408148.9			-343344.40			-61822.51	Item Executed as per site requirement. Work Completed.

C72

JAPSWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl.No.	Sl No.(as per BOQ)	Description of items	Unit	CEA Vetted Cost/BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
200	15.6.4	15.6.4 Providing and fixing sleeve connections of 12mm dia at 400 c/c HYSD Steel with two components Styrene & cement free, epoxy acrylate fixing and anchoring compound supplied in cell rotating Dyleeve-in-Cartridge from the wreath site viewing using standard custom applicator gun after drilling holes of 16mm diameter to a minimum depth of 80-100mm at required locations, inclusive of all materials, manpower, (Sleeve to be paint shot at PMLTV Painter or equivalent)	Nos	2500.00	1,120.00	28,00,000	0.00	1,120.00	0	0	1,120.00	0.00	0	1,120	0
201	15.6.5	15.6.5 Providing and placing free flow micro concrete Readymix RGI Sika Micro-Concrete-2 or equivalent product of other fixing slurry tight shuttering. The micro concrete should be mixed mechanically with mandatory water, power value of 0.16 strictly in accordance with the manufacturer's instructions and as per the direction of the Engineer-in-Charge. The micro concrete should develop a compressive strength of 15 N/mm2 within 1 day, 40 N/mm2 within 7 days and 50 N/mm2 within 28 days. The cost is inclusive of materials, transportations, labour, taxes, etc. all complete	sqm	100.00	80,000.00	80,00,000	35.46	69,000.00	2291560.00	0.00	69,000.00	0.00	35	69000.00	2291560.0
202	15.6.6	15.6.6 Plastered Shuttering Providing formwork of 12mm thick Plywood Board so as to give a rough finish including centering, shuttering, strutting and propping, viz. height of propping and centering below supporting floor is ceiling not exceeding 4.0m and removal of the same for in situ reinforced concrete and plain concrete work etc.									0.00	0.00	0	0.00	0
203	15.6.6.1	15.6.6.1 Columns, Pillars, Piers & Struts of square/ rectangular/ polygonal/ plain or any shape like TEE/ I, etc. having plane vertical face	sqm	100.00	370.00	37,000	0.00	370.00	0.00	0.00	370.00	0.00	0	370.00	0
204	15.6.6.2	15.6.6.2 Flat Surfaces such as soffits of suspended floors, roofs, landings, cantilever slabs, chajjas, Balconies and the like									0.00	0.00	0	0.00	0
205	a)	a) Floors, etc. upto 200mm in thickness	sqm	200.00	460.00	1,00,000	0.00	460.00	0.00	0.00	460.00	0.00	0	460.00	0
206	b)	b) Floors, etc. above 200mm in thickness	sqm	200.00	926.00	1,01,200	0.00	200.00	0.00	0.00	926.00	0.00	0	926.00	0
207	16	16 Water Supply, Sewage and Sanitation									0.00	0.00	0	0.00	0
208	16.1	16.1 Sanitary Works									0.00	0.00	0	0.00	0
209	16.1.1	16.1.1 Providing, fixing & fixing Vitreous China Dual Flush Floor Mounted Coupled Extended Water Closet (European type WC Pan 450mm high) with seat & lead, Flushing Cistern, CP Brass Hinges and rubber buffers, DI MS Brackets, 40mm dia flush bend with fittings including opening of fittings and brackets, if required Hardware make White Wall Faced Water Closet									0.00	0.00	0	0	0
210	16.1.1.1	16.1.1.1 Atlas (Cat. No. 90552) (inclusive of Seat Cover and fittings)	each	2.00	31,000.00	62,000	0.00	31,000.00	0	2	31,000.00	62000.00	2	31,000	62,000

~ 569 ~

Sl. No.	ID No.(as per BOQ)	Description of Items	Variation		VERIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	11							4
224	15.6.4	15.6.4 Providing and fixing screw connectors of 10mm dia at 400 c/c HYSD Steel with two components Styrene & cement free, epoxy acrylate fixing and anchoring compound supplied in self mixing Cylinder or Cartridge Type that expands upon mixing using standard sealant applicator gun after drilling holes of 18mm diameter to a minimum depth of 80 - 100mm as required locations, inclusive of all materials, manpower, (Steel to be paint value) (HILTI Fischer or equivalent)	0	380000			0.00	-2373881.36		-427118.64	Item not required to be Executed as per site condition
231	15.6.5	15.6.5 Providing and placing free flow micro concrete Renderoc RG/ Sika Mono Cementir-2 or equivalent product of other fixing slurry type shuttering. The micro concrete should be mixed mechanically while maintaining water, power ratios at 0.18 ratio in accordance with the manufacturer's instructions and as per the direction of the Engineer-in-Charge. The micro concrete should develop a compressive strength of 10 N/mm2 within 1 day, 40 N/mm2 within 7 days and 50 N/mm2 within 28 days. The cost is inclusive of materials, transportation, labour, taxes, etc. all complete	0	676400			-5485101.69			-1033318.31	Item Executed as per site requirement Work Completed
232	15.6.6	15.6.6 Pipboard Shuttering Providing formwork of 12mm thick Plywood Board etc as to give a rough finish including centering, shuttering, strutting and propping, etc. height of propping and centering below supporting floor to ceiling not exceeding 4.0m and removal of the same for in situ reinforced concrete and plain concrete work in:	0	0			0.00	0		0.00	
233	15.6.6.1	15.6.6.1 Columns, Pillars, Posts & Strut of square/ rectangular/ polygonal in plan as only straps like TEE/ L etc having plane contract face	0	37000			0.00	-31355.93		-5644.07	Item not required to be Executed as per site condition.
234	15.6.6.2	15.6.6.2 Flat Surfaces such as soffits of suspended floors, roofs, landings, cantilever slabs, chajjas, Balconies and the like:	0	0			0.00	0		0.00	
235	iii	a) Floors, etc. upto 200mm in thickness	0	139600			0.00	-118348.15		-21050.85	Item not required to be Executed as per site condition.
236	iii	b) Floors, etc. above 200mm in thickness	0	101200			0.00	-85762.71		-15437.29	Item not required to be Executed as per site condition.
237	16	16. Water Supply, Sewage and Sanitation	0	0			0.00	0			
238	16.1	16.1 Sanitary Works	0	0			0.00	0			
239	16.1.1	16.1.1 Providing, fitting & fixing Vitreous China Dual Flush/ Floor Mounted Coupled Extended Water Closet (European type WC Pan 40lt/hr flush) with seat & lined, Flushing Cistern, CP Brass Hinges and rubber washers, GI/ MS Brackets, 40mm dia flush bend with fittings including painting of fittings and brackets, if required Hindalco make White One Piece Water Closet	3	0			0.00	0			
240	16.1.1.1	16.1.1.1 Allor (Cat. No. 92052) (Inclusive of Seat Cover and fittings)	0	2			0.00	0			Work is in progress.

C74

JOINED PLANT CIVIL WORKS (HRT, Paradeep & PH)

Sl. No.	Sl No.(as per BOQ)	Description of items	Unit	CEA Vetted Cost /BOQ			As per Revised Cost Estimate at May'24 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	6	8	7	8	9	10	11	12	13	14	15	16
241	16.1.1.2	16.1.1.2 Canal (Cat. No. 92208) (Inclusive of Seat Cover and fittings)	each	2.00	32,000.00	64,000	1.00	32,000.00	120960.8	2	32,000.00	64000.00	3	32,000	192960.8
242	16.1.1.3	16.1.1.3 Bidet (Cat. No. 92240) / Rubini (Cat. No. 92383) (Inclusive of seat cover and fittings)	each	2.00	32,000.00	64,000	2.00	32,000.00	0	2	32,000.00	64000.00	2	32,000	64,000
243	16.1.1.4	16.1.1.4 Indi (Cat. No. 92640) Iron 330 (Cat. No. 92550) (Inclusive of seat cover & fittings)	each	2.00	32,000.00	64,000	2.00	32,000.00	0	2	32,000.00	64000.00	2	32,000	64,000
244	16.1.2	16.1.2 Providing, fixing and fixing vitreous flat back type lipped form urinal basin of automatic flushing system with standard flush pipe and CP brass spreader and brass antenna, etc. complete including painting of fittings and brackets, cutting and making good the walls & floors wherever required Hindware make White										0.00	0.00	0	0	0
245	16.1.2.1	16.1.2.1 Aqualine Urinal (Cat. No. 98017)	each	4.00	34,200.00	1,36,800	2.00	34,200.00	0	4	34,200.00	136800.00	4	34,200	136800.0
246	16.1.2.2	16.1.2.2 Urinal Omega E-Sensor (Cat. No. 98088)	each	4.00	31,000.00	1,24,000	4.00	31,000.00	124956.9	3	31,000.00	93000.00	7	31,000	217956.9
247	16.1.3	16.1.3 Supplying, fitting and fixing Vitreous China Divisal Plate including fitting and fixing complete as directed and specified										0.00	0.00	0	0	0
248	16.1.3.1	16.1.3.1 Hindware make White Now Division Plate (Cat. No. 91305)	each	12.00	5,600.00	66,000	3.00	5,600.00	0	12	5,600.00	66000.00	15	5,600	66,000
249	16.1.4	16.1.4 Providing Vitreous China wash basin with C.P MS brackets, CP Brass Chain with Plug, PVC waste Pipe including painting of fittings and brackets, making and making good the walls wherever required Table Top Basin Jaquar make										0.00	0.00	0	0	0
250	16.1.4.1	16.1.4.1 Kubix (Cat. No. KUS-WHT-6582)	each	2.00	12,147.00	24,294	0.00	12,147.00	0	2	12,147.00	24294.00	2	12,147	24,294
251	16.1.4.2	16.1.4.2 JDBO (Cat. No. JDE-WHT-9980)	each	2.00	15,600.00	31,200	0.00	15,600.00	0	2	15,600.00	31200.00	2	15,600	31,200
252	16.1.4.3	16.1.4.3 JDBO (Cat. No. JDD-WHT-9947)	each	2.00	20,000.00	40,000	0.00	20,000.00	0	2	20,000.00	40000.00	2	20,000	40,000
253	16.1.5	16.1.5 Providing, fitting & fixing stainless steel kitchen sink of Parryware make with CP MS Brackets, CP Brass Chain with Rubber Plug, PVC Waste Pipe, etc. complete including painting the fittings, cutting & making good the walls wherever required										0.00	0.00	0	0	0
254	16.1.5.1	16.1.5.1 Parryware make Single Bowl with veg bowl & Drain Board (480 x 290) Flat Edge- Classy (Cat. No. C8045)	each	2.00	13,900.00	27,800	0.00	13,900.00	0	2	13,900.00	27800.00	2	13,900	27,800
255	16.1.6	16.1.6 Providing, fitting and fixing Decorative Mirror complete as directed and specified Parryware make Size 400mm x 400mm	each	10.00	2,700.00	27,000	0.00	2,700.00	0	10	2,700.00	27000.00	10	2,700	27,000

C75

LINGARAJ PLANT CIVIL WORKS (HRT, Peetrock & PH)

Sl. No.	Sl No (as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Additions / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
241	16.1.1.2	16.1.1.2 Coral (Cat. No. 92008) (Including all Seat Cover and fittings)	128000	0			128474.54	0		11629.49	Work executed as per site requirement. Work Completed.
242	16.1.1.3	16.1.1.3 Blue (Cat. No. 92048)/ Rubric (Cat. No. 92903) (Including all seat cover and fittings)	0	0			0.00	0			Work is in progress.
243	16.1.1.4	16.1.1.4 Ivee (Cat. No. 92042)/ Ivee 180 (Cat. No. 92090) (Including all seat cover & fittings)	0	0			0.00	0			Work is in progress.
244	16.1.2	16.1.2 Providing, fitting and fixing vitreous flat back type/ squat front urinal bowl of automatic flushing assembly with standard flush pipe and CP brass spreader and brass unions, etc. complete including painting of fittings and brackets, making and making good the walls & floors wherever required Hindware make/ White	0	0			0.00	0			
245	16.1.2.1	16.1.2.1 Aquaflow Urinal (Cat. No. 92021)	0	0			0.00	0			Work is in progress.
246	16.1.2.2	16.1.2.2 Urinal Omega S Sensor (Cat. No. 96006)	92000	0			79413.00	0		11586.00	Item is not to start.
247	16.1.3	16.1.3 Supplying, fitting and fixing Vitreous China Designer Pan complete as directed and specified	0	0			0.00	0			
248	16.1.3.1	16.1.3.1 Hindware make White Neo Classic Pan (Cat. No. 81005)	0	0			0.00	0			Work is in progress.
249	16.1.4	16.1.4 Providing Vitreous China wash basin with CI/ MS brackets, CP Brass Chain with Plug, PVC waste Pipe including painting of fittings and brackets, making good the walls wherever required Table Top Basin Jaquar make	0	0			0.00	0			
250	16.1.4.1	16.1.4.1 Kubix (Cat. No. KUS-WHT-0552)	0	0			0.00	0			Work is in progress.
251	16.1.4.2	16.1.4.2 JDBO (Cat. No. JDO-WHT-8356)	0	0			0.00	0			Work is in progress.
252	16.1.4.3	16.1.4.3 JDBO (Cat. No. JDO-WHT-8347)	0	0			0.00	0			Work is in progress.
253	16.1.5	16.1.5 Providing, fixing & fixing stainless steel kitchen sink of Parryware make with CI/ MS Brackets, CP Brass Chain with Rubber Plug, PVC Waste Pipe, etc. complete including painting the fittings, cutting & making good the walls wherever required	0	0			0.00	0			
254	16.1.5.1	16.1.5.1 Parryware make/Single Bowl with veg bowl & Drain Board (400 x 200) Flat Edge- Classy (Cat. No. C8545)	0	0			0.00	0			Work is in progress.
255	16.1.6	16.1.6 Providing, fitting and fixing Dewvalve Mirror complete as directed and specified Parryware make Size 600mm x 450mm	0	0			0.00	0			Work is in progress.

C76

Sl. No.	Sl No.(as per BOQ)	Description of items	Unit	CEA Vetted Cost /BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
256	16.1.7	16.1.7 Providing, fitting and fixing Glass Shelf complete as directed and specified Glass shelf with CP Guard Rail Jaquar make Kubix 600mm long (Cat. No. AKB- 39771)	each	10.00	2,470.00	24,700	0.00	2,470.00	0	10	2,470.00	24700.00	10	2,470	24,700
257	16.1.8	16.1.8 Providing, fitting and fixing Glass Shelf complete as directed and specified Corner Glass Shelf with Brackets of Jaquar make Jaquar make Continental (Cat. No. ACN- 1172)	each	4.00	1,900.00	7,600	0.00	1,900.00	0	4	1,900.00	7600.00	4	1,900	7,600
258	16.1.9	16.1.9 Providing, fitting and fixing CP Swing Towel Soap Dish complete as directed and specified Jaquar make									0.00	0.00	0	0	0
259	16.1.9.1	16.1.9.1 Queen's (Cat. No. AQN- 7731)	each	3.00	1,580.00	4,650	0.00	1,580.00	0	3	1,550.00	4650.00	3	1,550	4,650
260	16.1.9.2	16.1.9.2 Kubix (Cat. No. AKB- 39731)	each	3.00	1,330.00	4,000	0.00	1,330.00	0	3	1,330.00	4000.00	3	1,333	4,000
261	16.1.10	16.1.10 Providing, fixing and fixing Liquid Soap Dispenser and liquid soap container complete as directed and specified Jaquar make									0.00	0.00	0	0	0
262	16.1.10.1	16.1.10.1 Kubix make Glass Bottle (Cat. No. AKB- 39735)	each	6.00	2,000.00	10,000	0.00	2,000.00	0	6	2,000.00	10000.00	6	2,000	10,000
263	16.1.11	16.1.11 Providing, fitting and fixing CP towel rail complete as directed and specified Jaquar make									0.00	0.00	0	0	0
264	16.1.11.1	16.1.11.1 Queen's 600mm long) (Cat. No. AQN- 7711)	each	9.00	1,720.00	13,760	0.00	1,720.00	0	9	1,700.00	13800.00	9	1,720	15,760
265	16.1.11.2	16.1.11.2 Queen's (450mm long) (Cat. No. AQN- 7711A)	each	8.00	1,620.00	12,960	0.00	1,620.00	0	8	1,620.00	12960.00	8	1,620	12,960
266	16.1.12	16.1.12 Providing, fitting and fixing Chrome Plated Towel Ring complete as directed and specified Jaquar make Queen's (Cat. No. AQN- 4201)	each	6.00	1,250.00	7,500	0.00	1,250.00	0	6	1,250.00	7500.00	6	1,250	7,500
267	16.1.13	16.1.13 Providing, fitting and fixing Chrome Plated Toilet paper Holder complete as directed and specified Jaquar make									0.00	0.00	0	0	0
268	16.1.13.1	16.1.13.1 Continental Tulsi Paper Holder with Flap (Cat. No. CAN- 11515)	each	4.00	1,700.00	6,800	0.00	1,700.00	0	4	1,700.00	6800.00	4	1,700	6,800
269	16.1.13.2	16.1.13.2 Queen's Tulsi Paper Holder with Flap (Cat. No. AQN- 7753)	each	4.00	1,720.00	6,880	0.00	1,720.00	0	4	1,720.00	6880.00	4	1,720	6,880
270	16.1.14	16.1.14 Providing, fitting and fixing Chrome Plated Waste Coupling complete as directed and specified									0.00	0.00	0	0	0

C77

Sl. No.	Sl No.(as per BOQ)	Description of items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under / Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
256	16.1.7	16.1.7 Providing, fitting and fixing Glass Shelf complete as directed and specified Glass shelf with CP Guard Rail Jaquar make Glass 600mm long (Cat. No. AKS- 29711)	0	0			0.00	0			Work is in progress
257	16.1.8	16.1.8 Providing, fitting and fixing Glass Shelf complete as directed and specified Corner Glass Shelf with Brackets of Jaquar make Jaquar make Continental (Cat. No. ACN- 1172)	0	0			0.00	0			Work is in progress
258	16.1.9	16.1.9 Providing, fitting and fixing CP Soap Tray/ Soap Dish complete as directed and specified Jaquar make	0	0			0.00	0			
259	16.1.9.1	16.1.9.1 Queen's (Cat. No. AQN- 1731)	0	0			0.00	0			Work is in progress
260	16.1.9.2	16.1.9.2 Kubix (Cat. No. AKS- 39731)	0	0			0.00	0			Work is in progress
261	16.1.10	16.1.10 Providing, fitting and fixing Liquid Soap Dispenser and liquid soap container complete as directed and specified Jaquar make	0	0			0.00	0			
262	16.1.10.1	16.1.10.1 Kubix make Glass Bottle (Cat. No. AKS- 39720)	0	0			0.00	0			Work is in progress
263	16.1.11	16.1.11 Providing, fitting and fixing CP towel rail complete as directed and specified Jaquar make	0	0			0.00	0			
264	16.1.11.1	16.1.11.1 Queen's (600mm long) (Cat. No. AQN- 7711)	0	0			0.00	0			Work is in progress
265	16.1.11.2	16.1.11.2 Queen's (450mm long) (Cat. No. AQN- 7711A)	0	0			0.00	0			Work is in progress
266	16.1.12	16.1.12 Providing, fitting and fixing Chrome Plated Towel Ring complete as directed and specified Jaquar make Queen's (Cat. No. AQN- 7731)	0	0			0.00	0			Work is in progress
267	16.1.13	16.1.13 Providing, fitting and fixing Chrome Plated Toilet paper holder complete as directed and specified Jaquar make	0	0			0.00	0			
268	16.1.13.1	16.1.13.1 Continental Toilet Paper Holder with Flap (Cat. No. CAN- 11516)	0	0			0.00	0			Work is in progress
269	16.1.13.2	16.1.13.2 Queen's Toilet Paper Holder with Flap (Cat. No. AQN- 7753)	0	0			0.00	0			Work is in progress
270	16.1.14	16.1.14 Providing, fitting and fixing Chrome Plated Waste Coupling complete as directed and specified	0	0			0.00	0			

C78

J-POWER PLANT CIVIL WORKS (HAT, Pansook & PH)

Sl. No.	Sl No (as per BOQ)	Description of Items	Unit	CEA Vetted Cost /BOQ			As per Revised Cost Estimate at May'2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
271	16.1.14.1	16.1.14.1 Jaquar make 32mm (HTSFT) (Cat. No: ALD-TRF-70R)	each	15.00	520.00	7,800	0.00	525.00	0	15	526.00	7890.00	15	525	7,890
272	16.1.14.2	16.1.14.2 Cera make Waste Coupling (Full Thread) 40mm (Cat. No. CA 102)	each	15.00	620.00	9,300	0.00	625.00	0	15	625.00	9330.00	15	625	9,330
273	16.1.15	16.1.15 Providing, fitting and fixing Chrome Plated Bottle Trap complete as directed and specified Jaquar make									0.00	0.00	0	0	0
274	16.1.15.1	16.1.15.1 Bottle Trap (with internal partition) 32mm size with 250mm long wall connection pipe (Cat. No: ALD- 789)	each	12.00	1,825.00	27,300	0.00	1,825.00	0	15	1,825.00	27300.00	15	1,820	27,300
275	16.1.15.2	16.1.15.2 Bottle Trap (with internal partition) 32mm size with 360mm long wall connection pipe (Cat. No: ALD- 7048)	each	16.00	1,800.00	28,800	0.00	1,800.00	0	16	1,800.00	28800.00	16	1,800	28,800
276	16.1.16	16.1.16 Providing, fitting and fixing Chrome Plated Grating complete as directed and specified									0.00	0.00	0	0	0
277	16.1.16.1	16.1.16.1 150mm Dia	each	15.00	400.00	6,000	0.00	400.00	0	15	400.00	6000.00	15	400	6,000
278	16.1.16.2	16.1.16.2 110mm Dia	each	10.00	350.00	3,500	0.00	350.00	0	10	350.00	3500.00	10	350	3,500
279	16.1.17	16.1.17 Supplying, fitting and fixing approved uPVC Pipes of different sizes, with all necessary "A" Brand or similar approved uPVC Fittings such as bend, Tee, Elbow, reducer, nipple, plug, tee, long screw fitting, clamps, etc. complete at all levels including below GL as directed and specified									0.00	0.00	0	0	0
280	16.1.17.1	16.1.17.1 Exposed work Portions Supreme/ Prince/ SFMC Brand or other equivalent approved brand (High Pressure Pipe Sch-40)									0.00	0.00	0	0	0
281	a)	a) 50mm dia	nos	300.00	400.00	1,20,000	0.00	409.00	0	200	400.00	80000.00	200	400	80,000
282	b)	b) 40mm dia	nos	200.00	350.00	1,00,000	0.00	355.00	0	200	355.00	70000.00	200	350	70,000
283	c)	c) 32mm dia	nos	300.00	270.00	81,000	0.00	270.00	0	200	270.00	54000.00	200	270	54,000
284	d)	d) 25mm dia	nos	200.00	220.00	44,000	0.00	220.00	0	200	220.00	44000.00	200	220	44,000
285	e)	e) 20mm dia	nos	50.00	200.00	10,000	0.00	200.00	0	50	200.00	10000.00	50	200	10,000
286	f)	f) 15mm dia	nos	50.00	150.00	7,500	0.00	159.00	0	50	160.00	7980.00	50	159	7,980
287	16.1.17.2	16.1.17.2 Concealed by Chasing or brushing brick wall/ CC wall/ RC Slab and making good to the damaged portions Supreme/ Prince/ SFMC Brand or other equivalent approved brand (High Pressure Pipe Sch-40)									0.00	0.00	0	0	0
288	a)	a) 25mm dia	nos	100.00	230.00	23,000	0.00	230.00	0	100	230.00	23080.00	100	230	23,000
289	b)	b) 20mm dia	nos	150.00	220.00	33,000	0.00	220.00	0	150	220.00	33000.00	150	220	33,000

C79

J-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl.No.	Sl No.(as per BOQ)	Description of items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
271	16.1.14.1	16.1.14.1 Angular make 32mm (HTPT) (Cat. No. ALD-TSU-108)	0	0			0.00	0			Work is in progress.
272	16.1.14.2	16.1.14.2 Coca make (Waste Coupling (Full Thread) 40mm (Cat.No. CA-103)	0	0			0.00	0			Work is in progress.
273	16.1.15	16.1.15 Providing, fitting and fixing Chrome Plated Bottle Trap complete as directed and specified Jaquar make	0	0			0.00	0			
274	16.1.15.1	16.1.15.1 Bottle Trap (with internal partition) 32mm size with 250mm long wall connection pipe (Cat. No. ALD- 768)	0	0			0.00	0			Work is in progress.
275	16.1.15.2	16.1.15.2 Bottle Trap (with internal partition) 32mm size with 500mm long wall connection pipe (Cat. No. ALD- 768B)	0	0			0.00	0			Work is in progress.
276	16.1.16	16.1.16 Providing, fitting and fixing Chrome Plated Grating complete as directed and specified	0	0			0.00	0			
277	16.1.16.1	16.1.16.1 100mm Dia	0	0			0.00	0			Work is in progress.
278	16.1.16.2	16.1.16.2 110mm Dia	0	0			0.00	0			Work is in progress.
279	16.1.17	16.1.17 Supplying, fitting and fixing approvedUPVC Pipes of different sizes, with all necessary "R" Brand or similar approved uPVC Fittings such as bend, Tee, Elbow, reducer, nipple, plug, tee, long screw fitting, clamps, etc. complete at all levels including bottom GL as directed and specified	0	0			0.00	0			
280	16.1.17.1	16.1.17.1 Ekprocel or in Thunchen (Supreme/ Prince/ SFMC Brand or other equivalent approved brand (High Pressure Pipe Sch-40)	0	0			0.00	0			
281	(i)	(a) 16mm dia	0	40600			0.00	-33808.31		-5101.69	Work is in progress.
282	(ii)	(b) 40mm dia	0	28000			0.00	-23661.02		-4339.98	Work is in progress.
283	(ii)	(c) 32mm dia	0	27000			0.00	-22881.36		-4118.64	Work is in progress.
284	(ii)	(d) 25mm dia	0	0			0.00	0			Work is in progress.
285	(ii)	(e) 20mm dia	0	0			0.00	0			Work is in progress.
286	(i)	(f) 15mm dia	0	0			0.00	0			Work is in progress.
287	16.1.17.2	16.1.17.2 Concealed by Chiselling or breaking brick wall/ CC wall/ RC Wall and making good to the damaged structure (Supreme/ Prince/ SFMC Brand or other equivalent approved brand (High Pressure Pipe Sch-40)	0	0			0.00	0			
288	(i)	(a) 25mm dia	0	0			0.00	0			Work is in progress.
289	(i)	(b) 20mm dia	0	0			0.00	0			Work is in progress.

- 576 -

Sl.No.	Sl No.(as per BOQ)	Description of items	Unit	CEA Vetted Cost/BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
290	c)	c) 15mm dia	rm	150.00	200.00	30,000	0.00	200.00	0	150	200.00	30000.00	150	200	30,000
291	16.1.18	16.1.18 Providing and fixing Chlorinated Polyvenyle Chloride (CPVC) Pipes, having thermal stability for hot and cold water supply including all CPVC Plain and Brass Threaded fittings viz fixing the pipe with clamps at 1.50m spacing. The inclusive joining of pipe. Exposed or in trenches									0.00	0.00	0	0	0
292	16.1.18.1	16.1.18.1 50mm dia	rm	100.00	650.00	65,000	0.00	650.00	0	100	650.00	65000.00	100	650	65,000
293	16.1.18.2	16.1.18.2 40mm dia	rm	100.00	430.00	43,000	0.00	430.00	0	100	430.00	43000.00	100	430	43,000
294	16.1.18.3	16.1.18.3 32mm dia	rm	100.00	330.00	33,000	0.00	330.00	0	100	330.00	33000.00	100	330	33,000
295	16.1.18.4	16.1.18.4 25mm dia	rm	100.00	270.00	27,000	0.00	270.00	0	100	270.00	27000.00	100	270	27,000
296	16.1.19	16.1.19 Supplying, fitting and fixing CP Bib Cock 15mm dia of approved brand as directed and specified Jaquar make									0.00	0.00	0	0	0
297	16.1.19.1	16.1.19.1 Bib Cock Long Thread	each	6.00	1,160.00	6,960	6.00	1,160.00	0	6	1,160.00	6960.00	6	1,160	6,960
298	16.1.19.2	16.1.19.2 3- Way Bib Cock	each	5.00	1,420.00	8,520	5.00	1,420.00	0	6	1,420.00	8520.00	6	1,420	8,520
299	16.1.20	16.1.20 Supplying, fitting and fixing Chromo Plated (CP) Stop Cock of approved brand and size as mentioned below as directed and specified Jaquar make									0.00	0.00	0	0	0
300	16.1.20.1	16.1.20.1 15mm dia Angular Stop Cock	each	15.00	1,020.00	15,300	0.00	1,020.00	0	15	1,020.00	15300.00	15	1,020	15,300
301	16.1.20.2	16.1.20.2 15mm dia Angular Stop Cock with long thread	each	10.00	1,280.00	12,800	0.00	1,280.00	0	10	1,280.00	12800.00	10	1,280	12,800
302	16.1.20.3	16.1.20.3 15mm dia Concealed Stop Cock nickeled body	each	15.00	1,280.00	12,800	0.00	1,280.00	0	10	1,280.00	12800.00	10	1,280	12,800
303	16.1.21	16.1.21 Supplying, fitting and fixing CP Pillar Cock of 15mm dia of approved brand as specified and directed									0.00	0.00	0	0	0
304	16.1.21.1	16.1.21.1 Continental	each	6.00	890.00	5,340	0.00	890.00	0	6	890.00	5340.00	6	890	5,340
305	16.1.21.2	16.1.21.2 Long Neck with aerator	each	6.00	1,160.00	6,960	0.00	1,160.00	0	6	1,160.00	6960.00	6	1,160	6,960
306	16.1.22	16.1.22 Supplying, fitting and fixing Chromo Plated Sink Cock of approved brand as directed and specified Jaquar make									0.00	0.00	0	0	0
307	16.1.22.1	16.1.22.1 Continental Cluton Sink Cock with Lizard J shaped swinging spout	each	2.00	1,700.00	3,400	0.00	1,700.00	0	2	1,700.00	3400.00	2	1,700	3,400
308	16.1.23	16.1.23 Supplying, fitting & fixing Chromo Plated Flush Cock of approved brand as									0.00	0.00	0	0	0
309	16.1.23.1	16.1.23.1 Flush Cock with wall flange 25mm with lever knob	each	10.00	2,900.00	29,000	0.00	2,580.00	0	10	2,580.00	25800.00	10	2,900	29,000
310	16.1.23.2	16.1.23.2 Flush Cock with wall flange 25mm with pipe knob	each	10.00	2,480.00	24,800	0.00	2,480.00	0	10	2,480.00	24800.00	10	2,480	24,800

Sl. No.	Sl No.(as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
250	iii	c) 15mm dia	0	0			0.00	0			Work is in progress.
251	16.1.18	16.1.18 Providing and fixing Chlorinated Polyvinyle Chloride (CPVC) Rises, having thermal stability for hot and cold water supply including all CPVC Plain and Brass threaded fittings in fixing the pipe with clamps at 1.00m spacing. This includes joining of pipe. Measured w.r.m. lengthes.	0	0			0.00	0			
252	16.1.18.1	16.1.18.1 20mm dia	0	0			0.00	0			Work is in progress.
253	16.1.18.2	16.1.18.2 40mm dia	0	0			0.00	0			Work is in progress.
254	16.1.18.3	16.1.18.3 32mm dia	0	0			0.00	0			Work is in progress.
255	16.1.18.4	16.1.18.4 25mm dia	0	0			0.00	0			Work is in progress.
256	16.1.19	16.1.19 Supplying, fitting and fixing CP Bib Cock 15mm dia of approved brand as directed and specified Jaquar make	0	0			0.00	0			
257	16.1.19.1	16.1.19.1 Bib Cock Long Thread	0	0			0.00	0			Work is in progress.
258	16.1.19.2	16.1.19.2 3- Way Bib Cock	0	0			0.00	0			Work is in progress.
259	16.1.20	16.1.20 Supplying, fitting and fixing Chromer Plated (CP) Stop Cock of approved brand and size as mentioned below as directed and specified Jaquar make	0	0			0.00	0			
260	16.1.20.1	16.1.20.1 15mm dia Angular Stop Cock	0	0			0.00	0			Work is in progress.
261	16.1.20.2	16.1.20.2 15mm dia Angular Stop Cock with long thread	0	0			0.00	0			Work is in progress.
262	16.1.20.3	16.1.20.3 15mm dia Concealed Stop Cock reduced body	0	0			0.00	0			Work is in progress.
263	16.1.21	16.1.21 Supplying, fitting and fixing CP Pillar Cock of 15mm dia of approved brand as specified and directed	0	0			0.00	0			
264	16.1.21.1	16.1.21.1 Ornamental	0	0			0.00	0			Work is in progress.
265	16.1.21.2	16.1.21.2 Long Neck with aerator	0	0			0.00	0			Work is in progress.
266	16.1.22	16.1.22 Supplying, fitting and fixing Chrome Plated Sink Cock of approved brand as directed and specified Jaquar make	0	0			0.00	0			
267	16.1.22.1	16.1.22.1 Centremount Cleniac Sink Cock with round / shaped swinging spout	0	0			0.00	0			Work is in progress.
268	16.1.23	16.1.23 Supplying, fitting & fixing Chrome Plated Flush Cock of approved brand as	0	0			0.00	0			
269	16.1.23.1	16.1.23.1 Flush Cock with wall flange 20mm with oval knob	0	0			0.00	0			Work is in progress.
270	16.1.23.2	16.1.23.2 Flush Cock with wall flange 20mm with plain knob	0	0			0.00	0			Work is in progress.

C82

J-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(as per BOQ)	Description of items	Unit	CEA Vetted Cost /BOQ			As per Revised Cost Estimate at May'2022 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qty	Rate (Rs)	Amount (Rs)	Qty	Rate (Rs)	Amount (Rs)	Qty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
211	16.1.24	16.1.24 Supplying, fitting & fixing Chrome Plated Shower 15mm dia of approved brand as directed and specified Jaquar make									0.00	0.00	0	0	0
212	16.1.24.1	16.1.24.1 Centremist Overhead Shower (ABS Chrome Plated) with ratil cleaning system	each	1.00	1,800.00	1,800	0.00	1,800.00	0	1	1,800.00	1800.00	1	1,800	1,800
213	16.1.24.2	16.1.24.2 Queen's Collection Overhead Rose Shower with revolving jets & 150mm long swivel shower arm	each	2.00	2,200.00	4,400	0.00	2,200.00	0	2	2,200.00	4400.00	2	2,200	4,400
214	16.1.25	16.1.25 Supplying, fitting and fixing Chrome Plated Wall Mixer complete as directed Jaquar make:									0.00	0.00	0	0	0
215	16.1.25.1	16.1.25.1 Centremist Classic Wall fitted 3 in 1 system with provision for hand telephonic shower and overhead shower complete with 111mm long bend pipe Cat. No. 1115	each	2.00	4,350.00	8,700	0.00	4,350.00	0	2	4,350.00	8700.00	2	4,350	8,700
216	16.1.26	16.1.26 Supplying, fitting & fixing Pivot Bib Cock 15mm dia complete as specified & directed by the Engineer-in-Charge									0.00	0.00	0	0	0
217	16.1.26.1	16.1.26.1 CPCH Heavy Type	each	10.00	200.00	2,000	0.00	200.00	0	10	200.00	2000.00	10	200	2,000
218	16.1.27	16.1.27 Supplying, fitting & fixing ball valve as specified and directed									0.00	0.00	0	0	0
219	16.1.27.1	16.1.27.1 25mm dia	each	5.00	1,000.00	5,000	0.00	1,000.00	0	5	1,000.00	5000.00	5	1,000	5,000
220	16.1.27.2	16.1.27.2 20mm dia	each	5.00	780.00	3,900	0.00	780.00	0	5	780.00	3900.00	5	780	3,900
221	16.1.28	16.1.28 Supplying, fitting and fixing Chuck Valve including necessary threads to pipes									0.00	0.00	0	0	0
222	16.1.28.1	16.1.28.1 50mm dia (Heavy Type)	each	10.00	2,200.00	22,000	0.00	2,200.00	0	10	2,200.00	22000.00	10	2,200	22,000
223	16.1.28.2	16.1.28.2 40mm dia (Heavy Type)	each	10.00	1,600.00	16,000	0.00	1,600.00	0	10	1,600.00	16000.00	10	1,600	16,000
224	16.1.29	16.1.29 Supplying, fitting and fixing Bib Float Valve with strainer including making necessary threads to pipes									0.00	0.00	0	0	0
225	16.1.29.1	16.1.29.1 50mm dia (Heavy Type)	each	5.00	1,600.00	8,000	0.00	1,600.00	0	5	1,600.00	8000.00	5	1,600	8,000
226	16.1.29.2	16.1.29.2 40mm dia (Heavy Type)	each	5.00	1,100.00	5,500	0.00	1,100.00	0	5	1,100.00	5500.00	5	1,100	5,500
227	16.1.30	16.1.30 Supplying & placing Flexible Cylindrical Vertical Closed Top (PCVC) Tank made over stagging with manhole cover with locking and drawing arrangement including providing pads of size as required for inlet & outlet pipes Sintex make									0.00	0.00	0	0	0
228	16.1.30.1	16.1.30.1 2000 ltr Capacity	each	1.00	18,361.00	18,362	0.00	18,361.00	0	1	18,361.00	18361.00	1	18,362	18,362
229	16.1.30.2	16.1.30.2 1500 ltr Capacity	each	1.00	14,500.00	14,500	0.00	14,500.00	0	1	14,500.00	14500.00	1	14,500	14,500

C83

J-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under / Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							4
311	16.1.24	16.1.24 Supplying, fitting & fixing Chrome Plated Shower 15mm dia of approved brand as directed and specified Jaquar make	0	0			0.00	0			
312	16.1.24.1	16.1.24.1 Centrerail Overhead Shower (ABS Chrome Plated) with inlet diverting system	0	0			0.00	0			Work is in progress
313	16.1.24.2	16.1.24.2 Queen's Collection Overhead Rose Shower with revolving joint & 150mm long swivel shower arm	0	0			0.00	0			Work is in progress
314	16.1.25	16.1.25 Supplying, fitting and fixing Chrome Plated Wall Mixer complete as directed Jaquar make	0	0			0.00	0			
315	16.1.25.1	16.1.25.1 Centrerail Classic Wall Mixer 3 in 1 system with provision for both telephonic shower and overhead shower complete with 115mm long bend pipe Cat. No. 1109	0	0			0.00	0			Work is in progress
316	16.1.26	16.1.26 Supplying, fitting & fixing Push Bib Cock 15mm dia complete as specified & directed by the Engineer-in-Charge	0	0			0.00	0			
317	16.1.26.1	16.1.26.1 EPCH Heavy Type	0	0			0.00	0			Work is in progress
318	16.1.27	16.1.27 Supplying, fitting & fixing ball valve as specified and directed	0	0			0.00	0			
319	16.1.27.1	16.1.27.1 25mm dia	0	0			0.00	0			Work is in progress
320	16.1.27.3	16.1.27.3 20mm dia	0	0			0.00	0			Work is in progress
321	16.1.28	16.1.28 Supplying, fixing and fixing Check Valve including necessary threads to pipes	0	0			0.00	0			
322	16.1.28.1	16.1.28.1 50mm dia (Heavy Type)	0	0			0.00	0			Work is in progress
323	16.1.28.2	16.1.28.2 40mm dia (Heavy Type)	0	0			0.00	0			Work is in progress
324	16.1.29	16.1.29 Supplying, fitting and fixing GI Foot Valve with strainer including cutting necessary threads to pipes	0	0			0.00	0			
325	16.1.29.1	16.1.29.1 50mm dia (Heavy Type)	0	0			0.00	0			Work is in progress
326	16.1.29.2	16.1.29.2 40mm dia (Heavy Type)	1	1			0.00	1			Work is in progress
327	16.1.30	16.1.30 Supplying & placing Plastic Cylindrical Vertical Closed Top (PCVC) Tank make: sour stogging with manhole cover with locking and securing arrangement including providing cuts of size as required for inlet & outlet pipes Sintex make	0	0			0.00	0			
328	16.1.30.1	16.1.30.1 2000 ltr Capacity	0	0			0.00	0			Work is in progress
329	16.1.30.2	16.1.30.2 1500 ltr Capacity	0	0			0.00	0			Work is in progress

- 580 -

J-POWER PLANT CIVIL WORKS (KRT, Pandoh & PS)

Sl. No.	SI No./Item per BOQ	Description of Items	Unit	CEA Vetted Cost/SOC			As per Revised Cost Estimate in May 2020 PVoC Level								
							Completed as on May'20			Committed Liabilities/Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
220	16.1.30.3	16.1.30.3 1000 ltr Capacity	each	1.00	10,350.00	10,350	0.00	10,350.00	0	1	10,350.00	10350.00	1	10,350	10,350
221	16.1.31	16.1.31 Labour of erecting and placing PCVC Tank over the staging up to a height of 5.00m complete as directed									0.00	0.00	0	0	0
222	16.1.31.1	16.1.31.1 2500 ltr Capacity	each	1.00	1,410.00	1,410	0.00	1,410.00	0	1	1,410.00	1410.00	1	1,410	1,410
223	16.1.31.2	16.1.31.2 1500 ltr Capacity	each	1.00	1,200.00	1,200	0.00	1,200.00	0	1	1,200.00	1200.00	1	1,200	1,200
224	16.1.31.3	16.1.31.3 1000 ltr Capacity	each	1.00	990.00	990	0.00	990.00	0	1	990.00	990.00	1	990	990
225	16.1.32	16.1.32 Rain Water Downcomer Supplying, fitting andfixing Pipes with all necessary fittings complete as directed by the Engineer-in-Charge GI Pipe with GI Fittings TATA/ SAIL (Medium)										0.00	0.00	0	0	0
226	16.1.32.1	16.1.32.1 100mm Diameter	m	100.00	1,700.00	1,70,000	0.00	1,700.00	0.00	0.00	1,700.00	0.00	0	1700.00	0
227	16.1.32.2	16.1.32.2 150mm Diameter	m	200.00	2,800.00	5,60,000	0.00	2,800.00	0.00	50.00	2,800.00	140000.00	50	2800.00	140000.0
228	16.1.33	16.1.33 Supplying, fitting & fixing PVC Pipes of Class=2 including jointing, fitting & fixing with clamps, etc., as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches										0.00	0.00	0	0.00	0
229	16.1.33.1	16.1.33.1 300mm dia	m	50.00	1,700.00	85,000	0.00	1,709.00	0.00	50.00	1,700.00	85000.00	50	1709.00	85,000
240	16.1.33.2	16.1.33.2 110mm dia	m	75.00	820.00	61,500	1,087.400	820.00	815317.20	0.00	820.00	0.00	1087	820.00	815317.20
241	16.1.34	16.1.34 Supplying, fitting & fixing 87.5 degree PVC bend with socket including jointing, fitting & fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches										0.00	0.00	0	0	0
242	16.1.34.1	16.1.34.1 160mm dia	each	10.00	720.00	7,200	0.00	720.00	0	10	720.00	7200.00	10	720	7,200
243	16.1.34.2	16.1.34.2 110mm dia	each	10.00	380.00	3,800	0.00	380.00	0	10	380.00	3800.00	10	380	3,800
244	16.1.35	16.1.35 Supplying, fitting & fixing 45 degree PVC bend including jointing, fitting and fixing, etc. as necessary complete at all levels including below GL as directed & specified In exposed surfaces or in trenches										0.00	0.00	0	0	0
245	16.1.35.1	16.1.35.1 160mm dia	each	10.00	650.00	6,500	0.00	650.00	0	10	650.00	6500.00	10	650	6,500
246	16.1.35.2	16.1.35.2 110mm dia	each	10.00	280.00	2,800	0.00	280.00	0	10	280.00	2800.00	10	280	2,800
247	16.1.36	16.1.36 Supplying, fitting and fixing PVC single TEE including jointing, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches										0.00	0.00	0	0	0

C85

J-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(As per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
330	16.1.30.3	16.1.30.3 1000 ltr Capacity	0	0			0.00	0			Work is in progress.
331	16.1.31	16.1.31 Labour or erecting and placing PCW1 Tank over the ranging up to a height of 5.80m complete as directed	0	0			0.00	0			
332	16.1.31.1	16.1.31.1 2000 ltr Capacity	0	0			0.00	0			Work is in progress.
333	16.1.31.2	16.1.31.2 1000 ltr Capacity	0	0			0.00	0			Work is in progress.
334	16.1.31.3	16.1.31.3 1000 ltr Capacity	0	0			0.00	0			Work is in progress.
335	16.1.32	16.1.32 Main Water Downcomer Supplying, fitting, shifting Pipes with all necessary fittings complete as directed by the Engineer-in-Charge GI Pipe with GI Fittings TATA/ SAIL (Medium)	0	0			0.00	0			
336	16.1.32.1	16.1.32.1 100mm Diameter	0	170000			0.00	-144567.80		33832.20	Work is in progress.
337	16.1.32.2	16.1.32.2 150mm Diameter	0	425000			0.00	-360832.20		64167.80	Work is in progress.
338	16.1.33	16.1.33 Supplying, fitting & fixing PVC Pipes of 6kg/cm2 including joining, fitting & fixing with clamps, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches	0	0			0.00	0			
339	16.1.33.1	16.1.33.1 160mm dia	0	0			0.00	0			Work is in progress.
340	16.1.33.2	16.1.33.2 110mm dia	813617.2	0			689675.19	0		123141.81	Inadequate Provision in BOQ. Excess Quantity executed in providing drainage pipe in PCC works at unfollowed. Work completed.
341	16.1.34	16.1.34 Supplying, fitting & fixing 87.5 degree PVC bend with door including joining, fitting & fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches	0	0			0.00	0			
342	16.1.34.1	16.1.34.1 160mm dia	0	0			0.00	0			Work is in progress.
343	16.1.34.2	16.1.34.2 110mm dia	0	0			0.00	0			Work is in progress.
344	16.1.35	16.1.35 Supplying, fitting & fixing 45 degree PVC bend including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed & specified In exposed surfaces or in trenches	0	0			0.00	0			
345	16.1.35.1	16.1.35.1 160mm dia	0	0			0.00	0			Work is in progress.
346	16.1.35.2	16.1.35.2 110mm dia	0	0			0.00	0			Work is in progress.
347	16.1.36	16.1.36 Supplying, fitting and fixing PVC single TEE including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches	0	0			0.00	0			



C86

A-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl.No.	Sl.No.(as per BOQ)	Description of Items	Unit	CEA Vetted Cost /BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
348	16.1.36.1	16.1.36.1 100mm dia	each	10.00	550.00	5,500	0.00	550.00	0	10	550.00	5500.00	10	550	5,500
349	16.1.36.2	16.1.36.2 110mm dia	each	12.00	420.00	4,200	0.00	420.00	0	10	460.00	4600.00	10	460	4,600
350	16.1.37	16.1.37 Supplying, fitting and fixing PVC single Y with door including jointing, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm dia	each	5.00	620.00	3,100	0.00	620.00	0	5	620.00	3100.00	5	620	3,100
351	16.1.38	16.1.38 Supplying, fitting and fixing PVC Double Y with door including jointing, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm dia	each	5.00	780.00	3,900	0.00	780.00	0	5	780.00	3900.00	5	780	3,900
352	16.1.39	16.1.39 Supplying, fitting & fixing PVC Cross T with door including jointing, fitting & fixing, etc. as necessary complete at all levels including/below GL as directed and specified In exposed surfaces or in trenches 110mm x 110mm	each	10.00	590.00	5,900	0.00	590.00	0	10	590.00	5900.00	10	590	5,900
353	16.1.40	16.1.40 Supplying, fitting & fixing PVC Coupler including jointing, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm dia	each	10.00	200.00	2,000	0.00	200.00	0	10	280.00	2800.00	10	280	2,800
354	16.1.41	16.1.41 Supplying, fitting and fixing PVC reducer including jointing, fitting & fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 160mm x 110mm	each	10.00	900.00	9,000	0.00	880.00	0	10	880.00	8800.00	10	880	8,800
355	16.1.42	16.1.42 Supplying, fitting & fixing PVC reducing Tee with door including jointing, fitting and fixing, etc. in exposed surfaces or trenches as necessary complete at all levels including below GL as directed and specified 160mm x 110mm	each	10.00	2,890.00	30,000	0.00	2,000.00	0	10	2080.00	20800.00	10	2,000	20,000
356	16.1.42.1	16.1.42.1 Supplying, fitting and fixing PVC Socket Plug including/solving, fitting & fixing, etc. in exposed surfaces or in trenches as necessary complete at all levels including below GL as directed and specified 110mm	each	10.00	260.00	2,600	0.00	260.00	0	10	260.00	2600.00	10	260	2,600
357	16.1.43	16.1.43 Supplying, fitting and fixing PVC cleaning pipe including jointing, fitting and fixing, etc. in exposed surfaces or trenches as necessary complete at all levels including below GL as directed and specified									0.00	0.00	0	0	0

C87

I-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	4	17	18							7
341	16.1.36.1	16.1.36.1 160mm dia	0	0			0.00	0			Work is in progress.
342	16.1.36.2	16.1.36.2 110mm dia	0	0			0.00	0			Work is in progress.
350	16.1.37	16.1.37 Supplying, fitting and fixing PVC single Y with door including jointing, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm dia	0	0			0.00	0			Work is in progress.
351	16.1.38	16.1.38 Supplying, fitting and fixing PVC Double Y with door including jointing, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm dia	0	0			0.00	0			Work is in progress.
352	16.1.39	16.1.39 Supplying, fitting & fixing PVC Cross T with door including jointing, fitting & fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm x 110mm	0	0			0.00	0			Work is in progress.
353	16.1.40	16.1.40 Supplying, fitting & fixing PVC Coupler including jointing, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm dia	0	0			0.00	0			Work is in progress.
354	16.1.41	16.1.41 Supplying, fitting and fixing PVC reducer including jointing, fitting & fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 160mm x 110mm	0	0			0.00	0			Work is in progress.
355	16.1.42	16.1.42 Supplying, fitting & fixing PVC including Tee with door including jointing, fitting and fixing, etc. in exposed surfaces or trenches as necessary complete at all levels including below GL as directed and specified 160mm x 110mm	0	0			0.00	0			Work is in progress.
356	16.1.42.1	16.1.42.1 Supplying, fitting and fixing PVC Socket Plug including jointing, fitting & fixing, etc. in exposed surfaces or in trenches as necessary complete at all levels including below GL as directed and specified 110mm	0	0			0.00	0			Work is in progress.
357	16.1.43	16.1.43 Supplying, fitting and fixing PVC vibrating pipe including jointing, fitting and fixing, etc. in exposed surfaces or trenches as necessary complete at all levels including below GL as directed and specified	0	0			0.00	0			

~ 584 ~

C88

Sl. No.	Sl No.(as per BOQ)	Description of Items	Unit	CSA Vetted Cost/BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
330	16.1.43.1	16.1.43.1 150mm dia	each	10.00	1,200.00	12,000	0.00	1,200.00	0	10	1,200.00	12000.00	10	1,200	12,000
331	16.1.43.2	16.1.43.2 110mm dia	each	10.00	435.00	4,350	0.00	435.00	0	10	436.00	4360.00	10	436	4,360
332	16.1.44	16.1.44 Providing, fitting & fixing PVC Cowel of IS: make complete as directed and specified									0.00	0.00	0	0	0
333	16.1.44.1	16.1.44.1 150mm dia PVC Cowel of ISI make	each	10.00	290.00	2,900	0.00	290.00	0	10	290.00	2900.00	10	290	2,900
334	16.1.44.2	16.1.44.2 110mm dia PVC Cowel of ISI make	each	10.00	250.00	2,500	0.00	250.00	0	10	250.00	2500.00	10	250	2,500
335	16.1.45	16.1.45 Providing, fitting & fixing 450mm dia 30mm thick CI man hole cover & frame of 55kg weight complete as directed and specified	each	5.00	5,600.00	28,000	0.00	5,600.00	0	5	5,600.00	28000.00	5	5,600	28,000
336	16.1.45.1	16.1.45.1 Clearance of service septic tank and removing the night soil and debris, etc. manually from the tank/ chamber to a distant place by loading out the deposited night soil, burning the same in near by trenches/ pits which has been dug earlier and covering the same. The service septic tank is cleaned with clean water and completed as directed by the supervisor For 150 users	each	2.00	4,920.00	9,840	0.00	4,920.00	0	2	4,920.00	9840.00	2	4,920	9,840
337	17	17 Removal of Damaged Steel Liner from HRT									0.00	0.00	0	0.00	0
338	17.1	17.1 Removal of Steel Liners in HRT including cutting, dismantling, loading, transportation, unloading & stacking in the Unmargao Store, complete in all respect including all tools & plants, labour, equipments, etc. as per the instruct ion/direction and as directed by the Engineer-in-Charge	MT	200.00	27,000.00	54,00,000	160.00	27,000.00	4481720.00	0.00	27,000.00	0.00	100	27000.00	4481720.0
339	18	18 Gabions									0.00	0.00	0	0.00	0
340	18.1	18.1 Boulder laid in wire crates: Providing and laying of boulders laid in wire crates made with 4mm dia GI wire conforming to IS: 280 & IS: 4826 in 100mm x 100mm mesh (twisted diagonally) including 10% extra for laps and joints laid with scenic boulders	cum	1000.00	4,000.00	40,00,000	3,774.63	4,000.00	15098520.00	0.00	4,000.00	0.00	3,774	4000.00	15098520.0
341	19	19 Road Works									0.00	0.00	0	0.00	0
342	19.1	19.1 Preparation and consolidation of subgrade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations, etc. and re-rolling the sub-grade and disposal of surplus earth with lead upto 50m	sqm	3000.00	170.00	5,10,000	0.00	170.00	0.00	1500.00	170.00	255000.00	1,500	170.00	255000.0
343	19.2	19.2 Supplying and stacking at site								150.00	0.00	0.00	150	0.00	0
344	19.2.1	19.2.1 90mm to 45mm size stone aggregate	cum	200.00	1,890.00	3,78,000	0.00	1,890.00	0.00	150.00	1,890.00	283500.00	150	1890.00	283500.0
345	19.2.2	19.2.2 63mm to 45mm size stone aggregate	cum	300.00	1,600.00	4,80,000	0.00	1,600.00	0.00	150.00	1,600.00	240000.00	150	1600.00	240000.0
346	19.2.3	19.2.3 22mm to 22 mm size stone aggregate	cum	300.00	1,800.00	5,40,000	0.00	1,800.00	0.00	150.00	1,800.00	270000.00	150	1800.00	270000.0
347	19.2.4	19.2.4 Sand Screening 13.2mm nominal size (Type A)	cum	200.00	1,800.00	3,60,000	0.00	1,800.00	0.00	100.00	1,800.00	180000.00	100	1800.00	180000.0
348	19.2.5	19.2.5 Sand Screening 11.2mm nominal size (Type B)	cum	200.00	2,040.00	4,08,000	0.00	2,040.00	0.00	100.00	2,040.00	204000.00	100	2040.00	204000.0



CBG

J-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl. No.	Sl No.(as per BOQ)	Description of items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in site/work scope	Under/Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
358	16.1.43.1	16.1.43.1 160mm dia	0	0			0.00	0			Work is in progress
359	16.1.43.2	16.1.43.2 110mm dia	0	0			0.00	0			Work is in progress
360	16.1.44	16.1.44 Providing, fitting & fixing PVC Cowel of Sil make complete as directed and specified	0	0			0.00	0			
361	16.1.44.1	16.1.44.1 160mm dia PVC Cowel of Sil make	0	0			0.00	0			Work is in progress
362	16.1.44.2	16.1.44.2 110mm dia PVC Cowel of Sil make	0	0			0.00	0			Work is in progress
363	16.1.45	16.1.45 Providing, fitting & fixing 450mm dia 50mm thick CI man hole cover & frame of 30kg weight nominal or as directed and specified	0	0			0.00	0			Work is in progress
364	16.1.45.1	16.1.45.1 Clearance of service septic tank and removing the night soil and debris, etc. manually from the tank/ chamber to a distant place by loading out the deposited night soil, burning the same in case by kerosene/ oils which has been dug earlier and covering the same. The service septic tank is cleaned with clear water and completed as directed by the department Per 100 users	0	0			0.00	0			Work is in progress
365	17	17 Renewal of Damaged Steel Liner from HRT	0	0			0.00	0			
366	17.1	17.1 Renewal of Steel Liners in HRT including pulling, dismantling, leveling, transportation, unloading & shifting in the Lowangtar Store, complete in all respect including all tools & plant, labour, equipments, etc. as per the technical specification and as directed by the Engineer-in-Charge	0	618818			-7781194.92			-140875.89	Work Executed as per site requirement. Work completed
367	18	18 Grouting	0	0			0.00	0			
368	18.1	18.1 Soulden laid in mine scales Providing and laying of breakers laid in mine scales made with 4mm dia GI wire castle-ring to ID: 250 & 18: 4626 in 100mm x 100mm mesh (minimum diagonally) including 10% extra for laps and joints laid with stone boulders	11396258	0			9406159.32	0		1690198.68	Incorporate Provision in BOQ. Excess quantity executed in bank protection works deemed one of Tail Race Channel Work completed
369	19	19 Road Works	0	0			0.00	0			
370	19.1	19.1 Preparation and consolidation of subgrade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth according to curvilinear and consolidating with road roller including making good the unsatisfactory, etc. and re-rolling the sub grade and disposal of surplus earth with lead upto 50m	0	258850			0.00	-230101.69		-28836.31	Work is in progress
371	19.2	19.2 Supplying and stacking of hile	0	0			0.00	0		0.00	Work is in progress
372	19.2.1	19.2.1 90mm to 45mm size stone aggregate	0	285009			0.00	-32 1523.42		-43474.58	Work is in progress
373	19.2.2	19.2.2 63mm to 45mm size stone aggregate	0	246008			0.00	-203186.83		-34813.17	Work is in progress
374	19.2.3	19.2.3 45mm to 22.4mm size stone aggregate	0	275000			0.00	-234013.06		-41186.44	Work is in progress
375	19.2.4	19.2.4 Stone Screening 13.2mm nominal size (Type A)	0	180000			0.00	-1533432.17		-270497.83	Work is in progress
376	19.2.5	19.2.5 Stone Screening 11.2mm nominal size (Type B)	0	200000			0.00	-1694461.65		-298538.47	Work is in progress

C90

J-POWER PLANT CIVIL WORKS (HRT, Penstock & PH)

Sl.No.	Sl.No.(as per BOQ)	Descriptions of items	Unit	CEA Vetted Cost /BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Considered as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
377	19.3	19.3 Laying, spreading and compacting stone aggregate of specified size to WBM specifications in uniform thickness, camel picking, rolling with 2 wheeled road roller/any roller 8 to 10 tonne capacity in stages to proper grade and camber, applying and brooming required type of screenings/ binding material to fill up interstices of coarse aggregate, watering and compacting to the required density	cum	600.00	750.00	7,11,000	0.00	750.00	0.00	450.00	750.00	337500.00	450	750.00	337500.0
378	19.4	19.4 Supplying, assisting and spreading 6mm thick rut layer, watering and rolling complete including preparation of the surface and rolling With Road Roller/ Hand Roller	sqm	3000.00	21.00	63,000	0.00	21.00	0.00	1500.00	21.00	31500.00	1,500	21.00	31,500
379	19.5	19.5 Surface dressing one coat on new surface with bitumen of specified grade at a rate of 1.95 kg/sqm of surface area with 1.5 cum of stone chippings 13.2mm nominal size per 100 sqm of road surface, including consolidation with road roller of 5 to 8 tonne capacity, etc. complete. Using bitumen emulsion (minimum 50% bitumen content RS grade conforming to IS: 8887)	sqm	2000.00	170.00	3,40,000	0.00	170.00	0.00	1500.00	170.00	255000.00	1,500	170.00	255000.0
380	19.6	19.6 Surface dressing one coat on old surface with bituminous specified grade at the rate of 1.32 kg/sqm of surface area with 1.13 cum of stone chippings 11.2mm nominal size per 100 sqm of road surface, including consolidation with road roller of 8 to 8 tonne capacity etc. complete. Using bitumen emulsion (minimum 50% bitumen content RS grade conforming to IS: 8887)	sqm	3000.00	190.00	5,70,000	0.00	190.00	0.00	1500.00	190.00	285000.00	1,500	190.00	285000.0
381	19.7	19.7 Providing and laying bituminous mastic wearing course (as per specification) with industrial bitumen of grade IS/25 conforming to IS: 702, prepared by using cooker enclosed in required level and slope, rendering providing sprinkled surface with bitumen pre-coated fine grained hard stone chippings of approved size at the rate of 9 nos per 10 sqm and at approximate spacing of 15cm centre to centre in both directions, pressed into surface protruding 1mm to 4mm over mastic surface, including cleaning the surface, removal of debris, etc. all complete. (Considering bitumen using 18.2% as per MORTH Specification) 40mm thick	sqm	3000.00	120.00	3,60,000	0.00	120.00	0.00	1500.00	120.00	180000.00	1,500	120.00	180000.0
382	19.8	19.8 Providing and applying tack coat using hot straight run bitumen of grade VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit, filled on bitumen boiler, cleaning and preparing the existing road surface as per specifications On bituminous surface @ 0.30 kg/sqm	sqm	3000.00	50.00	1,50,000	0.00	50.00	0.00	1500.00	50.00	75000.00	1,500	50.00	75,000
383	19.9	19.9 2.5cm premix carpet surfacing with 2 cum of stone chippings 11.2mm nominal size per 100 sqm and bitumen emulsion (medium setting min. 60% bitumen content) complying with IS: 8887, using 98 kg per cum of chippings of road surface, including consolidation with road roller, etc. Complete	sqm	3000.00	250.00	7,50,000	0.00	250.00	0.00	1500.00	250.00	375000.00	1,500	250.00	375000.0
384	19.10	19.10 Premixing and laying seal coat of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 12.5 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface, including rolling and finishing with road roller all complete	sqm	3000.00	90.00	2,70,000	0.00	90.00	0.00	1500.00	90.00	135000.00	1,500	90.00	135000.0
385	19.11	19.11 Concrete Pavements									0.00	0.00	0	0.00	0

Sl.No.	Sl No.(as per BOQ)	Description of Items	Variation		VARIATION ANALYSIS (Variation due to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under/Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
377	19.3	19.3 Laying, spreading and compacting stone aggregate of specified sizes to WBM specifications to uniform thickness, hand packing, rolling with 5 wheeled road/ vibratory roller 8 to 10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening/ binding material to fill up interstices of coarse aggregate, watering and compacting to the required density	0	335808			0.00	-301271.18		-84220.81	Work is in progress
378	19.4	19.4 Supplying, stacking and spreading 6mm thick red lacjit, watering and rolling complete including preparation of the surface and rolling With Road Roller/ Hand Roller	0	31500			0.00	-26834.92		-4805.68	Work is in progress
379	19.5	19.5 Surface dressing one coat on new surface with bitumen at specified grade on a rate of 1.36 kg/sqm of surface area with 1.5 cum of stone chippings 13.2mm nominal size per 100 sqm of road surface, including consolidation with road roller of 8 to 8 tonne capacity, etc. complete Using bitumen emulsion (minimum 65% bitumen content RS grade conforming to IS: 8887)	0	233800			0.00	-219191.09		-68696.3	Work is in progress
380	19.6	19.6 Surface dressing one coat on old surface with bitumen at specified grade at the rate of 1.22 kg/sqm of surface area with 1.13 cum of stone chippings 11.2mm nominal size per 100 sqm of road surface, including consolidation with road roller of 8 to 8 tonne capacity etc. complete Using bitumen emulsion (minimum 65% bitumen content- RS grade conforming to IS: 8887)	0	265000			0.00	-241525.42		-43474.58	Work is in progress
381	19.7	19.7 Providing and laying bitumen mastic wearing course (as per specification) with industrial bitumen of grade 85/25 conforming to IS: 702, prepared by using crusher sand/sand as required level and shape, including providing premixed surface with bitumen precoated fine grained hard stone chipping of size graded size at the rate of 5 cum per 100 sqm and at approximate spacing of 10cm centre to centre in both directions, pressed into surface perpendicular 3mm to 4mm over binder surface, including cleaning the surface, removal of debris, etc. all complete. (Considering bitumen using 10.2% as per NSRTI Specification) +25mm thick	0	180800			0.00	-132342.37		-27457.63	Work is in progress
382	19.8	19.8 Providing and applying tack coat using hot straight run bitumen of grade VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications On bituminous surface @ 0.50 kg/sqm	0	76000			0.00	-62538.02		-11446.68	Work is in progress
383	19.9	19.9 2.5cm premix carpet surfacing with 1 cum of stone chippings 11.2mm nominal size per 100 sq/m and bitumen emulsion (medium setting min. 65% bitumen content) conforming with IS: 8887, using 36 kg per cum of chippings of road surface, including consolidation with road roller, etc. Complete	0	370808			0.00	-317196.61		-57300.38	Work is in progress
384	19.10	19.10 Providing and laying seal coat of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 1.28 kg all bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.65 cum of fine Aggregate per 100 sqm of road surface, including rolling and finishing with road roller all complete	0	115808			0.00	-114406.78		-20000.22	Work is in progress
385	19.11	19.11 Concrete Pavements	0	0			0.00	0			

Sr. No.	Sl No.(as per BOQ)	Description of Items	Unit	DSR Vetted Cost BOQ			As per Revised Cost Estimate at May 2024 Price Level								
							Completed as on May'24			Committed Liabilities /Balance Works			Total		
				Quantity	Rate (Rs.)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)	Qnty	Rate (Rs)	Amount (Rs)
1	2	3	4	6	9	7	8	9	10	11	12	13	14	15	16
386	19.11.1	19.11.1 Cement Concrete 1:2:4 (1 cement :2 coarse sand :4 graded stone aggregate 40mm nominal size) in pavements, laid to required slope and camber in panels as required including consolidation finishing and curing complete	sqm	900.00	6,000.00	54,00,000	0.00	6,000.00	0.00	0.00	6,900.00	0.00	0	6900.00	0
387	19.11.2	19.11.2 Fixing 6 Fwing in position pre-moulded joint filler in expansion joints	per sm depth per cm width per rft length	40000.00	3.50	1,40,000	61,640.00	3.50	215740.28	0.00	3.50	0.00	61,640	3.50	215740.283
388	19.11.3	19.11.3 Providing and laying in position bitumen hot sealing compound for expansion joint etc., Using grade "A" sealing compound	per sqm depth per cm width per m length	40000.00	3.50	1,40,000	0.00	3.50	0.00	40000.00	3.50	140000.00	40,000	3.50	140000.0
389	20	20. Miscellaneous Works									0.00	0.00	0	0.00	0
390	20.1	20.1 Fencing Work									0.00	0.00	0	0.00	0
391	20.1.1	20.1.1 Fencing with angle iron post placed at required distance embedded in cement concrete blocks, every 15th Post, last but one end post and corner post shall be located on both sides and end post on one side only and provided with horizontal tiers and two diagonals inbetween with two special types of barbed wire weighing 9.38 kg per 100m (min.), between the two posts fitted and fixed with GI staples, bar binders, etc, complete. (Cost of Posts, stays, earth work and concrete work to be paid separately) Payment to be made per meter over actual length of barbed wire used. Also GI barbed wire	m	2000.00	22.00	44,000	5,310.74	22.00	116847.10	0.00	22.00	0.00	5,310	22.00	116847.160
392	20.1.2	20.1.2 Supplying at site angle iron post & strut of required size including fastener to be split and bent at right angle in opposite direction for 15cm length and drilling holes upto 10mm dia, etc, complete	kg	1800.00	105.00	1,20,000	9,709.81	105.00	1019424.53	0.00	105.00	0.00	9,709	105.00	1019424.925
		Total of BOQ items				₹ 64,70,64,113.75			₹ 67,59,80,896.12			₹ 1,16,25,985.50			₹ 68,16,06,762.00
		SUB TOTAL of BOQ items (A1)				₹ 64,70,64,113.75			₹ 67,59,80,896.12			₹ 1,16,25,985.50			₹ 68,16,06,762.00
		Escalation (A2)				₹ 0.00			₹ 6,97,64,817.13			₹ 50,48,453.55			₹ 7,58,43,271.00
		A. Sub Total of BOQ items & Escalation (A1+A2)				₹ 64,70,64,113.75			₹ 74,57,75,673.25			₹ 1,76,74,200.05			₹ 75,74,50,033.18
		B) Extra items (Not Covered in BOQ as per Annex-J1)							₹ 14,20,94,660.67			₹ 2,84,60,642.80			₹ 17,05,47,412.47
		C) Cost of Cement & Steel Free supply to the Contractor (Detail as per Annex-J2)				₹ 11,21,76,585.00			₹ 14,04,65,835.50			₹ 577,402.00			₹ 14,60,43,237.50
		D) Additional Civil works as per Annex-J3							₹ 6,98,69,035.34			₹ 38,72,445.26			₹ 7,37,02,071.60
		Total Cost (A+B+C+D)				₹ 75,92,40,698.75			₹ 1,10,81,35,911.75			₹ 4,80,76,742.56			₹ 1,15,77,73,784.73
		Sub-Total Amount (Rs.) without GST				₹ 64,38,64,998.96			₹ 93,93,72,881.31			₹ 4,25,90,440.14			₹ 98,11,63,251.45
		GST @ 18% GST component of the cost (Rs.)				₹ 11,58,95,699.81			₹ 16,91,23,133.44			₹ 74,86,302.43			₹ 17,66,09,450.26
		Total (Rs.)				₹ 75,97,60,698.76			₹ 1,10,85,96,014.74			₹ 4,80,76,742.56			₹ 1,15,77,73,784.73

C93

JAPANESE PLANT CIVIL WORKS (ART, Penstock & PH)

Sl. No.	Sl No.as per BOQ	Description of items	Variation		VARIATION ANALYSIS ('Variation Cos to)						REMARKS / REASONS OF DEVIATION
			Positive(+)	Negative(-)	Price Escalation	Change in design/scope	Under Over estimation	Addition / Deletion	Others	Statutory Levies	
1	2	3	17	18							7
386	19.11.1	19.11.1 Cement Concrete 1:2:4 [1 cement: 2 clean sand: 4 graded stone aggregate 40mm nominal size] in foundations, laid to required slope and section in panels as required including consolidation finishing and tamping complete	0	3430000			0.00	-2503728.81		-128271.19	Item not required to be Executed as per site conditions.
387	19.11.2	19.11.2 Providing & fixing in position pre moulded joint filler in expansion joints	75749.3025	0			64165.00	0		11583.80	Inadequate Provision in BOQ Item Executed as per site requirement Work Completed.
388	19.11.3	19.11.3 Providing and laying in position bitumen hot sealing compound for expansion joint etc. Using grade "A" sealing compound	0	0			0.00	0			Item not required to be Executed as per site condition.
389	20	20 Miscellaneous Works	0	0			0.00	0			
390	20.1	20.1 Fencing Work	0	0			0.00	0			
391	20.1.1	20.1.1 Fencing with angle iron post placed at required distance embedded in cement concrete blocks, every 15th Post, last but one and post and corner post shall be strutted on both sides and end post on one side only and provided with horizontal lines and two diagonals interwoven with horizontal wires of barbed wire weighing 0.38 kg per 100m (min.), between the two posts fitted and fixed with GI staples, turn buckles, etc. complete. (Cost of Posts, struts, earth work and concrete work to be paid separately) Payment to be made per meter cost of total length of barbed wire used. Mins Of barbed wire	94947.16	0			80402.68	0		14483.47	Inadequate Provision in BOQ Item Executed as per site requirement Work Completed.
392	20.1.2	20.1.2 Supplying at site angle iron post & strut of required size including hollows in the solid and bore at right angle in opposite direction for 15cm length and drilling holes upto 10mm dia etc. complete	42442.525	0			41992.53	0		7542.68	Inadequate Provision in BOQ Item Executed as per site requirement Work Completed.
		Total of BOQ Items	₹ 19,48,85,414.48	₹ 19,05,82,786.14			₹ 7,86,90,604.53	-₹ 4,13,83,275.42		₹ 67,15,319.24	
		SUB TOTAL of BOQ Items (A1)	₹ 19,48,85,414.48	₹ 19,05,82,786.14			7,86,90,604.53	-4,13,83,275.42		67,15,319.24	
		Escalation (A2)	₹ 7,38,43,371.38		₹ 6,42,72,958.54					1,15,69,312.84	
		A. Sub Total of BOQ Items & Escalation (A1+A2)			₹ 6,42,72,958.54	0.00	7,86,90,604.31	-4,13,83,275.42	0.00	1,82,84,631.77	
		B) Extra Items (Not Covered in BOQ as per Annex-J1)	₹ 17,85,67,412.47					14,45,31,735.49		3,40,35,706.99	
		C) Cost of Concrete & Steel Free supply to the Contractor (Detail as per Annex-J2)	₹ 3,39,66,648.50				2,87,91,649.58			51,48,998.93	
		D) Additional Civil works as per Annex-J3	₹ 7,37,02,075.66					6,24,84,869.03		1,12,47,205.71	
		Total Cost (A+B+C+D)	₹ 54,89,74,522.11	₹ 19,05,82,786.14	₹ 6,42,72,958.54	₹ 0.00	₹ 10,74,82,253.89	₹ 16,56,32,328.09	₹ 0.00	₹ 6,97,13,703.45	
		Sub Total Amount (Rs.) without GST									
		GST @ 18% GST component of the cost (Rs.)	₹ 6,97,13,703.45		₹ 3,57,51,753.45		₹ 1,97,38,908.51	₹ 3,21,97,004.74		₹ 6,97,13,703.45	
		Total (Rs.)									

C94

J- Escalation-Civil

Abstract Of Escalation Bill Paid upto May'24			
Sl. No.	RA Bill	Period	Amount
1	1st	31.12.2020 to 31.05.2021	₹ 13,94,128.00
2	2nd	01.06.2021 to 31.08.2021	₹ 53,33,307.00
3	3rd	01.09.2021 to 15.10.2021	₹ 38,60,649.00
4	4th	16.10.2021 to 30.11.2021	₹ 42,49,831.00
5	5th	01.12.2021 to 31.01.2022	₹ 56,30,373.00
6	6th	01.02.2022 to 25.02.2022	₹ 25,63,876.00
7	7th	26.02.2022 to 30.03.2022	₹ 28,43,502.00
8	8th	01.04.2022 to 31.05.2022	₹ 41,87,138.00
9	9th	01.06.2022 to 31.07.2022	₹ 35,28,255.00
10	10th	01.08.2022 to 31.08.2022	₹ 53,67,173.00
11	11th	01.09.2022 to 30.11.2022	₹ 33,40,355.00
12	12th	01.12.2022 to 31.03.2023	₹ 61,20,083.00
13	13th	01.04.2023 to 30.06.2023	₹ 1,08,01,094.00
14	14th	01.07.2023 to 31.07.2023	₹ 55,14,552.00
15	15th	01.08.2023 to 30.11.2023	₹ 50,60,352.00
	Total Escalation Amount Paid upto May'24 (Rs.)=		₹ 6,97,94,817.13

CALCULATION OF ESCALATION CIVIL WORKS FOR BALANCE WORKS						
Sl.No	Component	% Component	Index on March 2020	Index on Aug 2023	% Increase of Index	Escalation Amount*
1	2	3	4	5	6=(5-4)/4	7.00
1	Labour	20%	345.312	400.608	0.16	12,37,087.89
2	Materials	50%	125.10	152.086	0.22	41,66,196.27
3	HSD	10%	78.73	91.88	0.17	6,45,169.78
		Total Escalation Yet to be paid (Rs.)=				**60,48,453.95**

**Base Amount (Liabilities + Balance amount for which escalation is yet to be paid)=* *38626780.84*

C95

J- POWER PLANT CIVIL WORKS (Extra items in HRT, Penstock , PH)

J-Annex-J1										
Sl No.	Description of Item	Unit	Completed as on May'24			Balance			Total	Remarks/Annexure
			Qty.	Rate in INR	Amount in INR	Qty.	Rate	Amount in INR	Amount in INR	
1	Analogous Item No.1- Removal of Steel Liners from Anchor Block including cutting, dismantling, loading, transportation, unloading & stacking in the designated location, complete in all respect including all tools & plants, labour, equipments, etc. as per the technical specification and as directed by the Engineer-in-Charge	MT	224.120	27000	6051240	0	0	0	60,51,240.00	(Annexure J.iv.I.a)
2	Extra Item No. 2:- Cleaning of penstock corridor by manual means including removal of silt, debris, boulders and dental cleaning of the rock foundation.	LS			75,80,526.76			0	75,80,526.76	(Annexure J.iv.I.b)
3	Extra Item No. 3:- Resurfacing of Invert of Umrong HRT using cementitious mortar conforming to BS EN 1900-3 R4 with compatible bonding agent.	Sqm	13159.786	6,015.90	7,91,67,951.33				7,91,67,951.33	(Annexure J.iv.I.c)
4	Extra Item No. 4 :- Dismantling/cutting of concrete at Adit-II Plug including disposal of spoils covering all labour, materials, equipment and services for successful completion of the work as directed by the Engineer-in-charge.	Cum	97.670	1,65,847.00	51,69,038.25			5,13,561.76	56,82,600.01	(Annexure J.iv.I.d)
5	Extra Item No. 5:- Dismantling/cutting of RCC at Saddle Supports along Umrong Penstock alignment including disposal of spoils covering all labour, materials, equipment and services for successful completion of the work as directed by the Engineer-in-charge	Cum	58.590	1,07,543.00	31,50,472.19			27,10,627.82	58,61,100.01	
6	Extra Item No. 6:- Dismantling/cutting of RCC at Service bay entrance including disposal of spoils covering all labour, materials, equipment and services for successful completion of the work as directed by the Engineer-in-charge	Cum	12.818	96,259.00	6,16,923.93			88,283.93	5,28,640.00	
7	Extra Item No. 7:- Dismantling/cutting of RCC at GT Yard old foundation and pedestals including disposal of spoils covering all labour, materials, equipment and services for successful completion of the work as directed by the Engineer-in-charge	Cum	46.350	1,03,021.00	23,87,511.68			1,95,488.33	25,83,000.01	



I- POWER PLANT CIVIL WORKS (Extra Items in HRT, Penstock , PH)

J-Annex-J1										
Sl No.	Description of Item	Unit	Completed as on May'24			Balance			Total	Remarks/Annexure
			Qty.	Rate in INR	Amount in INR	Qty.	Rate	Amount in INR	Amount in INR	
8	Extra Item No. 8:- Core Drilling, Cutting & Breaking of concrete surrounding the penstocks (all four branch lines) in the immediate upstream of the Kopili Power House D-Line for erection of penstock thrust collar including disposal of spoils covering all labour, materials, equipment and services for successful completion of the work as directed by the Engineer-in-charge.	Cum	84.115	2,28,705.00	96,18,760.54			75,03,184.17	1,71,21,944.71	(Annexure J.iv.J.a)
9	Analogous Item No. 2 Dismantling of concrete using core cutting machine for NIFPS Tank at GT Yard, Rotor Pit at Service Bay, MIV Servomotor at Powerhouse, BFV Servomotor at Valve House, Inlet of PRV below EL 262.85(Turbine Floor) ,Enlarging the exhaust fan opening at Power House, other locations as per site requirement including disposal of spoils covering all labour, materials, equipment and services for successful completion of the work as directed by the Engineer-in-charge.	Sqm.	1367.805	28,000.00	1,87,23,905.00	-	28,000.00	95,74,635.00	3,82,98,540.00	(Annexure J.iv.J.f)
10	Analogous Item No. 3-(Analogous to Item No. 2.1) Dismantling of concrete at Tail Race Channel Gate Groove of Kopili Power Station.	Sqm.	53.740	28,000.00	11,28,540.00	-	28,000.00	3,76,180.00	15,04,720.00	(Annexure J.iv.J.g)
11	EXTRA ITEM NO. 9- Supplying and Application of chemical HILTI-RE 500 V4/500 for Anchoring of Draft Tube and PRV Gate Rope Drum Hoisting Foundation at Kopili Power Station	Kg				378.585	16,290.00	61,67,149.65	61,67,149.65	(Annexure J.iv.J.h)
	Total				14,35,94,869.67			2,69,52,542.82	17,05,47,412.47	

J-POWER PLANT CIVIL WORK (Cost of Cement & Steel in HRT, Penstock &

J-Annex-I2

Sl No	Material	Unit	Completed up to May' 2024			Balance			
			Qty	Rate (Rs.)	Amount (Rs.)	Qty	Rate (Rs.)	Amount (Rs.)	
1	A. Cement	Bag	2,81,113.83	500	12,51,56,500.00	578.00	500	2,89,000.00	
2	B. Steel	MT	284.42	70,000.00	1,99,09,193.50	8.12	70,000.00	2,88,400.00	
	Total (A+B)				14,54,65,693.50			5,77,400.00	

A. Cement

BOQ Sl No.	Description of Items	Unit	Quantity of Cement (Bag)	As per Revised Cost Estimate at May' 2024 Price Level						
				Completed as on May'24			Balance Works			
				Qnty.	Quantity of Cement (bag)	Total Cement (Bag)	Qnty.	Quantity of cement (bag)	Total Cement (Bag)	
5.1	Plain Cement Concrete									
5.1.1	**Plain Cement Concrete in Anchor Blocks:** Plain Cement Concrete in open foundation complete as per drawings & Technical Specification including steel shuttering formworks Without Plasticizer PCC Grade M15	Cum		19.140	6.18	138.29	0.00	6.18	0.00	Design Mix
5.1.2	Plain Cement Concrete along Penstock Alignment: Plain Cement Concrete in open foundation complete as per drawings & Technical Specification including steel shuttering formworks Without Plasticizer PCC Grade M15	Cum		32,716.452	6.18	202197.79	0.00	6.18	0.00	Design Mix
5.1.3	Plain Cement Concrete in HRT: Plain Cement Concrete complete as per drawings & Technical Specification including steel shuttering formworks Without Plasticizer PCC Grade M20	Cum		0.00	7.34	0	0.00	7.34	0.00	Design Mix
5.1.4	**Plain Cement Concrete in Power House**									
5.1.4.1	Plain Cement Concrete: Plain Cement Concrete in open foundation complete as per drawings & Technical Specification including steel shuttering formworks Without Plasticizer PCC Grade M15	Cum		959.311	6.18	4766.79	0.00	6.18	0.00	Design Mix
5.1.4.2	Plain Cement Concrete: Plain Cement Concrete complete as per drawings & Technical Specification including steel shuttering formworks Without Plasticizer PCC Grade M20	Cum		58.300	7.34	427.92	0.00	7.34	0.00	Design Mix
5.2	Reinforced Cement Concrete					0			0.00	Design Mix
5.2.1	**Reinforced Cement Concrete in Anchor Blocks:** Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plasticizer RCC Grade M20 Using Concrete Mixer	Cum		1,191.526	7.34	8748.16	0.00	7.34	0.00	Design Mix
5.2.2	**Reinforced Cement Concrete in Saddle Supports:** Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plasticizer RCC Grade M20 Using Concrete Mixer	Cum		380.891	7.34	2794.67	30.00	7.34	220.12	Design Mix
5.2.3	**2nd Stage Reinforced Cement Concrete in Saddle Supports:** Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plasticizer RCC Grade M25 Using Concrete Mixer	Cum		136.215	8.57	1998.75	15.00	8.57	128.54	Design Mix

~ 594 ~

BOQ Sl No.	Description of Items	Unit	Quantity of Cement (Bag)	As per Revised Cost Estimate at May' 2024 Price Level						
				Completed as on May'24			Balance Works			
				Qnty.	Quantity of Cement (bag)	Total Cement (Bag)	Qnty.	Quantity of Cement (bag)	Total Cement (Bag)	
5.2.4	Reinforced Cement Concrete in Power House					0			0.00	Design Mix
5.2.4.1	**Reinforced Cement Concrete in Substructure:** Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plasticizer RCC Grade M25 Using Concrete Mixer	Cum	417.809	7.34	3066.31	10.00	7.34	73.37		Design Mix
5.2.4.2	**Reinforced Cement Concrete in Superstructure:** Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plasticizer RCC Grade M20 Using Concrete Mixer	Cum	224.183	7.34	1646.09	10.00	7.34	73.37		Design Mix
5.2.4.3	**2nd Stage Reinforced Cement Concrete in Grooves/Block Outs:** Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork Without Plasticizer RCC Grade M25 Using Concrete Mixer	Cum	204.868	8.57	1755.94	0.00	8.57	0.00		Design Mix
12	Cement Grouting: Cement Grouting including supply of all materials like cement, sand, admixture, etc.) which are not specifically mentioned but required to complete the job), water testing of holes including supply of all required apparatus complete, labours, plants and equipments, etc. in all respect as per technical specification and as directed by the Engineer-in-Charge	per 50kg bags of cement	1,231.08		0	0.00		0.00		
12.1	Stone Masonry Works in Cement Mortar 1:3 complete in all respect as per submitted drawings and technical specification				0			0.00		
12.1.1	Random Rubble Masonry	Cum	662.921	3.30	2187.64	0.00	3.30	0.00		DSR 7.1
12.2	Brick Work				0			0.00		
12.2.1	230mm thick Brick Work in cement mortar with 1st class brick including racking out joints and curing complete as directed at site/Delhi				0			0.00		
12.2.1.1	In Substructure upto plinth level including dewatering , if necessary				0			0.00		
(i)	In Proportion 1:4 (1 Cement: 4 Sand)	Sqm	68.680	0.48	32.68	90.00	0.48	34.80		1 Sqm=0.23 Cum Brickwork, 28% of 0.23=0.035 Cum of Mortar, 1/4 x 0.035= 0.017 Cum of Cement= 0.45 Bag of Cement
12.2.2	1st Class Brick Nagpur Wall in cement mortar including racking out joints and curing complete as per technical specifications and as directed by the Engineer-in-Charge				0			0.00		
12.2.2.1	113mm Thick Brick Wall				0			0.00		
(i)	In cement mortar in proportion 1:6 (1 cement: 6 sand)	Sqm	440.510	0.213	94.47	90.00	0.213	19.00		DSR 8.1.1
12.3	Providing and laying 25mm thick Dolma Floor Course with cement slurry/dust or prop 1:1.5:3 with graded stone aggregate of 10mm down material size including praveding approved drying proof admixture in proportion as recommended by the manufacturer including curing, etc. complete in all respect as per the technical specifications and as directed by the Engineer-in-Charge	Sqm	0.00	1.68	0	0.00	1.68	0.00		APWD

SOQ Sl No.	Description of Items	Unit	Quantity of Cement (Bag)	As per Revised Cost Estimate at May' 2024 Price Level						
				Completed as on May'24			Balance Works			
				Qnty.	Quantity of Cement (bag)	Total Cement (Bag)	Qnty.	Quantity of Cement (bag)	Total Cement (Bag)	
13.0	Plastering Works					0			0.00	
13.1	Cement Plaster in Fine Sand: Cement Plaster in Single Coat including arises on rounded angles not exceeding 50mm girth and finished even and smooth including curing complete as per technical specification and as directed by the Engineer-in-Charge					0			0.00	
13.1.1	12 mm Thick Cement Plaster of Mix 1:4 (1 Cement: 4 Fine Sand)	Sqm		338.930	0.308	65.29	300.00	0.289	21.65	DSR 13.1.1
13.1.2	15 mm Thick Cement plaster on the rough side of bricks or half brick wall of mix 1:4 (1 Cement: 4 Fine Sand)	Sqm		299.930	0.121	25.89	85.00	0.121	8.93	DSR 13.1.2
13.1.3	6mm Thick Plaster of Mix 1:3 (1 Cement: 3 Fine Sand)	Sqm		162.180	0.073	12.29	30.00	0.073	2.19	
13.1.4	Cement Plaster with a Floating Coat of Neat Cement					0			0.00	DSR 13.1.5
13.1.4.1	19 mm Thick Cement Plaster finished with a floating coat of neat cement of mix 1:3 (1 Cement : 3 Fine Sand)	Sqm		31.870	0.219	6.97	0.00	0.219	0.00	DSR 13.6.1
19.11	Concrete Pavements					0			0.00	
19.11.1	Cement Concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 40mm nominal size) in pavements, laid to required slope and camber in panels as required including consolidation finishing and necessary complete	Cum	0.00		0.070	0	0.00	0.070	0.00	DSR 19.4.2
	Sub Total of A					2,41,796.20			161.09	
	Add wastage @5%					7313.93			16.92	
	Total of A					2,61,110.00	Bag		178.00	Bag

B. Steel

SOQ Sl No.	Description of Items	Unit		As per Revised Cost Estimate at May' 2024 Price Level					
				Completed as on May'24			Balance Works		
				Qnty. (MT)			Qnty.(MT)		
6.0	Reinforcement								
6.1	**Reinforcement in Anchor Blocks:** Supplying, bbing and placing TMT conforming to IS: 1786 Fe 500D reinforcement including splicing complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	MT		116.62			0.00		
6.2	**Steel Re-bar as Dowels in Anchor Blocks:** Supplying, bbing and placing TMT conforming to IS: 1786 Fe 500D reinforcement including splicing complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	MT		45.16			0.00		
6.3	**Reinforcement in Saddle Supports:** Supplying, bbing and placing TMT conforming to IS: 1786 Fe 500D reinforcement including splicing complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	MT		10.25			1.00		
6.4	**Reinforcement in Power House:** Supplying, bbing and placing TMT conforming to IS: 1786 Fe 500D reinforcement including splicing complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	MT		70.00			3.00		
	Sub Total of B			276.04			4.00		
	Add wastage @3%			8.28401			0.12		
	Total of B			284.42	MT		4.12	MT	

C100

APH (Additional Civil Works in HRT, Penstock & PH)

I-Annex-II

Sl. No.	Ref. No.	Name of Works	W.O.No	Name of Contractor	Contained up to May' 2024		Balance
					Amount (Rs) Excl. GST	Amount (Rs) Incl. GST (@18%)	Amount (Rs) Incl. GST (@18%)
1	1	Revised order for the Work" Protection works (Construction of Spur) at Downstream of Kopili Power House of Kopili Hydro Electric Plant Umrongso,Assam	NEEPCO/KHPS/C&P (C) /F-05/2023-24/791 Date 15.06.2023	Sri Ramsing Rongfo	2,02,79,088.00	2,39,05,708.00	
2	12	Construction of Temporary /Ring Bund in front of Intake Trash Rack of Umrong Water Conductor System under R, R&M of 200 MW KHPS, Dist-Dima Hasao, Assam	NEEPCO/KHPS/C&P (C) /F-05/2021-22/4315 Date 12.01.2022	Sri VS Mange Changsan	1,28,09,190.00	1,51,54,224.00	
3	23	Construction of 2 (Two) Nos. of Dewatering and drainage panel room at Kopili Power House, KHEP	NEEPCO/KHPS/C&P (C) /F-05/2021-22/3663 Date 15.11.2021	Sri Ramsing Rongfo	1,53,65,915.25	1,81,31,780.00	
4	14	Cutting Breaking of Concrete Lining for Installation of Anti-Penetration Ring ..... at KHPS (4x50 MW) Umrongso, Dima Hasao Assam	NEEPCO/KHPS/C&P (C) /F-05/2022-23/1027 Date 25.05.2022	M/s IIT Industries	5,28,140.00	6,23,205.00	
5	22	Construction of 2 (Two) Nos. of Temporary Brick wall ..... Kopili Power Station	NEEPCO/KHPS/C&P/F-05/2021-22/3673 Dated 16.11.2021	Sri Khogendra Hojai	1,40,590.00	1,72,976.00	
6	24	Dismantling and Reconstruction of Adit-II of Umrong water Conductor System at Kopili Power Station, KHEP, Umrongso- Submission of 1 st RA Bill. Reg	NEEPCO/KHPS/C&P (C) /F-05/2020-21/1317 Date 06.01.2021	M/S PRS	19,85,440.93	23,27,420.00	
7	38	Deviation Work Order for the work " Making Cut-outs in Power House RCC Floors of varying size in Kopili Power House of KHEP, NEEPCO Ltd. Umrongso	NEEPCO/KHPS/C&P (C) /F-05/2020-21/4505 Date 05.02.2021	M/s R.T. Industries	20,09,179.58	23,70,832.00	
8	74	Steel Structural Works at Kopili valve House, Control Room under KHPS at Umrongso, Dima Hasao, Assam	NEEPCO/KHPS/C&P (C) /F-05/2022-23/6178 Date 22.03.2023	Sri Welson Millick	2,40,964.00	2,84,325.72	
9	163	False Ceiling Works and Aluminium Partition works with glass & particle board at EL 270.15 M Floor & EL 279.00 M Floor of Kopili Power House (4x50 MW)	NEEPCO/KHPS/C&P (C)/F-05/2023-24/1485 dtd 18.09.2023	M/s Mercantile System	1089976.04	16,89,570.00	-
10	166	False Ceiling Works and Aluminium Partition works with glass & particle board at EL 275.15 M Floor & EL 270.15 M Floor of Kopili Power House (4x50 MW)	NEEPCO/KHPS/C&P (C)/F-05/2023-24/1486 dtd 18.09.2023	Sri Pranjol Chakravarty	1726679.33	2036640.00	0
11	164	SS Railing work at Kopili Power Station (4 x 50 MW) KHPS, NEEPCO Ltd., Umrongso, Dima Hasao, Assam.	NEEPCO/KHPS/C&P (C)/F-05/2023-24/1730 dtd 09.10.2023	Sri Pranjol Chakravarty	858398.31	1022350.00	-
12	165	Supply Fixing and Fixing of Chequered Plate at E.L. 262.85 m Floor (Turbine Floor) at Kopili Power House (4x50MW) KHPS NEEPCO Ltd	PO- 3700008364 Dated 05.03.2024	Shri. Rahimuddin Khan	686440.68	1164000.00	6,38,580.00
13	167	Cable Trench Cover at Roof Top Control Room of PH:- Steel work welded in built up sections/ trussed work, including cutting, hoisting,fixing in position and applying a priming coat of approved steel primer using structural,steel etc. as required In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works including fixing of MS Flats, rubber with araldite to MS Angles	Estimate under process	-			2,92,634.40
14	168	Interior works for newly constructed control control room at Kopili Power Station KHPS, Umrangso	PO- 3700009117 Dated 07.05.2024	Shri. Rahimuddin Khan			18,86,502.00
15	169	Civil works pertaining to installation of Road Weigh Bridge of 100 MT capacity (18M X 3M) at KHPS, NEEPCO Ltd. Umrangso Dima Hasao Assam	NEEPCO/KHPS/C&P/(C)/F-05/2023-24/1125 Dated 05/06/2023	Sri Sunil Sharma	613005.65	723551.67	1,13,731.56
16	170	Construction of 2 Nos. of Ramp for Weigh Bridge	Estimate under process	-			8,00,000.00
			Total			6,08,59,635.34	38,72,440.26

~ 597 ~

I-Annex-II_Pg 1 of 1

C101

Civil Works RR&M Kopili HPS (4x50MW), Umrongso, Assam

J-Civil.S.Yard (Ref. J-civil-S.Yard-Annex-A)

Sl No	Item	Unit	CEA Vetted Cost			As per Revised Cost Estimate at MAY-24 Price Level								
						Completed as on May-2024			Balance Works			Total		
			Qty.	Rate in INR	Amount in INR	Qnty.	Rate (Rs.)	Amount (Rs.)	Qnty.	Rate (Rs.)	Amount (Rs.)	Qnty.	Rate (Rs.)	Amount (Rs.)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	CIVIL WORKS													
1	Debris Clearance				2,96,00,000.00			61,39,311.10			0.00			61,39,311.10
2	Aggregate carpeting	Cum	1000.00	4060.00	49,56,000.00			58,30,262.00			0.00			58,30,262.00
3	Mass Conc. M 20	Cum	2169.00	9048.00	1,97,93,325.00			0.00			0.00			0.00
4	Reinforcement	MT	350.00	66079.20	2,33,19,600.00			0.00			0.00			0.00
5	Anchor Rars 25mm	Rbl	1260.00	926.00	11,66,760.00			0.00			0.00			0.00
6	Miscellaneous items	LS			10,00,000.00			83,96,701.78			0.00			83,96,701.78
7	Fencing	LS			5,00,000.00			4,76,019.00			0.00			4,76,019.00
8	Construction of wall at Switchyard corner (plaster on both sides) & Development of Tower Foundation with concrete (M15)	LS			8,99,000.00			27,12,635.00			0.00			27,12,635.00
9	Construction of Tower foundation of already dismantled tower (U 1&2)	LS			2,00,000.00			0.00			0.00			0.00
	TOTAL				8,00,58,685.00			3,15,55,328.88			0.00			3,15,55,328.88

C102

Civil Works RR&M Kopili HPS (4x50MW), Umrongso.

J-Civil.S.Yard (Ref. J-civil-S.Yard-Annex-A)

Sl No	Item	VARIATION		Price Escalation	Change in design/scope	Under /Over estimation	Addition / Deletion	Others	Statutory Levies
		Positive(+)	Negative(-)						
1	2	16	17	18	19	20	21	22	23
	CIVIL WORKS								
1	Debris Clearance	0	23493468.9			-19881770.25			-3578718.646
2	Aggregate screening	880363	0			749084.73			134277.2242
3	Mass Conc. M 20	0	9760328			-8746580.51			-2014744.492
4	Reinforcement	0	22015800			-18660947.46			-3356852.542
5	Anchor Bars 25mm	0	1166760			-988779.66			-177980.339
6	Miscellaneous Items	5306701.778	0			4573470.08			823035.6949
7	Fencing	0	23561			-20322.66			-3658.119644
8	Construction of wall at Switchyard corner (plaster on both sides) & Development of Tower Foundation with concrete (M15)	1853935	0			1571040.61			282798.3898
9	Construction of Tower foundation of already dismantled tower (U 1&2)	0	200000			-169491.53			-30508.47458
	TOTAL	8040799.78	6,66,34,354.90	-	-	-4,95,79,284.85	-	-	-89,24,271.27
			-5,83,03,556.12						

599

J-Civil-S.Yard_Pg 2 of 2

C 103

J-Civil Work in SwitchYard

Annex-A

Ref No	Name of Works	W.O No	Name of Contractor	Completed up to MAY-2024	
				Amount (Rs) Excl. GST	Amount (Rs) Incl GST @18%
	1. Debris Clearance				
104	Supply of labour for cleaning of Switch yard area, drains etc. for restoration of Kopili Power Plant Umrongso (w.e.f 02.05.2020 to 31.07.2020)	NEEPCO/KHEPC&P O/F-07/2020-2021/2921 Date 21.09.2020	Sri Khagendra Hojai	5,15,350.00	6,08,113.00
107	Supply of labour for cleaning of GT yard, drains, Switch yard area etc. for restoration of Kopili Power Plant Umrongso (w.e.f 01.07.2020 to 31.07.2020)	NEEPCO/KHEPC&P O/F-07/2020-2021/2122 Date 31.08.2020	Joython Longmailai	7,50,200.00	8,85,236.00
109	Supply of labour for cleaning of GT yard, drains, Switch yard area etc. for restoration of Kopili Power Plant Umrongso (w.e.f from 14.04.2020 to 30.06.2020)	NEEPCO/KHEPC&P O/F-07/2020-2021/1999 Date 18.08.2020	Joython Longmailai	11,07,100.00	13,27,176.00
115	Extension of Supply of labour for cleaning of debris, sand &soil from Switch yard area for restoration of Kopili Power Station,KHEP, Umrongso (for the period from 21.01.2020 to 29.01.2020)	NEEPCO/KHEPC&P O/F-07/2020-2021/63 Date 24.04.2020	Sri Khogendra Hojai	14,839.00	17,179.00
131	Labour for cleaning of jungles in pessiock/cleaning of sand & soil from Switch yard area of restoration of Kopili Power Station, during the period of 01.11.2019 to 20.01.2020	NEEPCO/KHEPC&P O/F-07/2019-2020/5078 Date 03.01.2020	Sri Khagendra Hojai	2,25,327.00	2,65,885.86
137	Supply for labour for cleaning of Switch yard area,drains etc. for restoration of Kopili Power Plant Umrongso (w.e.f 18.03.2020)	NEEPCO/KHEPC&P O/F-07/2020-2021/132 Date 30.04.2020	Sri Khogendra Hojai	3,37,500.00	3,98,250.00
82	Clearing of Power House Area resulting from dismantling of E/M equipment, jungle cutting in and around the Power House Area, Clearing of drainage dewatering sump, rainwater sump and other miscellaneous activities at Kopili Power Station, KHEP	NEEPCO/KHEPC&P O/F-07/2021-2022/2241 Date 27.08.2021	Sri Ranesing Rangbi	3,77,668.00	4,45,648.24
9	Clearance of Slush/Sand from Trash Rack area of Umrong Intake KHPS, Umrongso, Dima Hasao, Assam	NEEPCO/KHPS/C&P [C] /F-07/2022-23/3007 Date 01.10.2022	Sri Gopen Bhathari	4,21,871.00	4,97,013.00
10	Supply of Labour for cleaning/removal of Slush, Sand & Debris deposited at Trash Rack area	NEEPCO/KHPS/C&P [C] /F-07/2022-23/2114 Date 25.08.2022	Sri Gopen Bhathari	6,55,313.00	7,73,269.00
72	Engagement of 2 Nos. Un-Skilled labours for cleaning removal of slush from Drain in MV Floor, Turbine Floor and other miscellaneous works at Kopili Power House (4x50 MW) from 22.11.2022 to 21.03.2023	NEEPCO/KHPS/C&P [C] /F-07/2022-23/6135 Date 22.03.2023	Smt. Easter Lapasam	3,26,516.00	3,85,289.00
79	Clearance of debris from inside Track Rack area of Umrong Intake for installation of Thrash Rack Panels,KHPS,Umrongso	NEEPCO/KHPS/C&P O/F-07/2023-2024/241 Date 27.04.23	Sri Gopan Bathari	4,11,616.15	4,85,709.05
			Total	**52,62,916.10**	**61,39,511.10**
	2. Aggregate carpeting				
2	Providing Ballast at Kopili Switchyard and GT Yard KHPS, Umrongso, Assam	NEEPCO/KHPS/C&P [C] /F-05/2023-24/6[illegible] Date 05.06.2023	M/s SS Soam Engineers Pvt. Ltd	49,40,169.05	58,30,199.08
	6. Miscellaneous				
73	Steel Structure Works of Booster Pump House at Kopili Switchyard under KHPS, Umrongso, Assam	NEEPCO/KHPS/C&P [C] /F-05/2022-23/6276 Date 28.03.2023	Sri Pranab Kumar Dehinga	2,54,200.00	2,99,979.60
77	Construction of Kiosk Room at Switchyard of Kopili Power Station, KHPS Umrongso.	NEEPCO/KHPS/C&P [C] /F-05/2022-23/2194 Date 27.08.2022	Sri Kunior Sonar	51,66,713.71	60,96,722.18
			Total	54,20,913.71	63,96,701.78
	7. Fencing				
13	Providing Temporary Fencing with barbed wire at damaged portion of switch yard and sub-station of Kopili PS, KHEP, Umrongso	NEEPCO/KHPS/C&P [C] /F-05/2022-23/1174 Date 01.07.2022	Sri Sanatan Joshi	4,03,408.00	4,76,019.84
	8. Construction of wall at Switchyard corner (plaster on both sides) & Development of Tower Foundation with concrete (M15)				
28	Revised Work Order for Construction of RCC retaining Wall beside female river Switch Yards of Kopili Power House, KHEP, Umrongso	NEEPCO/KHPS/C&P [C] /F-05/2020-21/5184 Date 12.03.2021	M/s Ashirvad Associate	9,23,317.91	10,89,516.00
52	Deviation work order for the work " Construction of retaining/Protection wall at east side corner of Kopili Switchyard Kopili Power Station at KHEP, Umrongso"	NEEPCO/KHEPC&P [C] /F-05/2020-2021/1193 Date 07.09.2020	Sri Bhimsing Engti	8,93,177.97	10,53,950.00
69	Construction of Protection work at the abutment of RCC near Switchyard on approach Road to Kopili Power House from 5th Km of Umrongso-Shillong road at KHEP, Umrongso.	NEEPCO/KHPS/C&P [C] /F-05/2019-20/4344 Date 07.01.2020	Sri Pranab Kumar Dehi	4,82,496.74	5,69,299.00
			Total	22,99,912.62	27,12,835.84
			GRAND TOTAL	3,81,07,216.43	2,15,55,308.86

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K- BUILDINGS

Sl. No.	Description of Items	Unit	Sanctioned Cost			As per BOQ			As per Revised Estimate								Variation Amount
			Qty	Rate (Rs.)	Amount (Rs. In Lakhs)	Qty	Rate	Amt	Completed work up to MAY-2024 PL			Balance wok			Total		
									Qty	Rate	Amt	Qty	Rate	Amt	Qty	Amt	
1	Assam Type Building (site colony at Power House and others)	Sqm	4026	6161.4	248.058			132.18			132.18			0		132.18	-115.87
	Total Amount (Inclusive of GST)				248.058						132.18	-	-	0.00	-	132.18	-115.87
	Sub Total (Exclusive of GST)				210.22						112.02			0.00		112.02	
	GST @ 18%				37.84						20.16			0.00		20.16	
	Total Amount (Inclusive of GST @ 18%)				248.06						132.18			0.00		132.18	

C105

K. BUILDINGS

Amount= Rs 'In Lakhs'

Sr. No.	Description of items	Variation (with respect to sanctioned cost)		Variation due to					
		Positive (+)	Negative (-)	Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Additional requirement / New Item /Addition /Deletion	Other causes (specify)	Statutory Levies
1	Assam Type Building (site colony at Power House and others)	0	115.87			-98.20			-17.68
	Total Amount (Inclusive of GST)	0.00	115.87	0.00	0.00	-98.20	0.00	0.00	-17.68

Sub Total (Exclusive of GST)	0.00	98.20
GST @ 18%	0.00	17.68
Total Amount (Inclusive of GST @ 18%)	0.00	115.87

~ 602 ~

C 106

K-Building Details(K-Annex)

Completed uo to MAY-2024

Doc_	Name of Works	W.O.No	Name of Contractor	Amount (Rs) Excl. GST	Amount (Rs) Incl. GST (@18%)	Balance
35	Construction of 750 KVA DG Room building for instalation on newly supplied DG set at Kopili Power Station,KHPS umrongso, Dima Hasao, Assam	NEEPCO/KHPS/C&P (C) /F-05/2021-22/188 Date 17.04.2021	Sri VS Manga Changsan	19,14,375.92	22,58,964.00	
15	Construction of 1 (one) No. dormitory for accomodation at Kopili Power Station, KHEP Umrongso (Group-B)	NEEPCO/KHPS/C&P (C) /F-05/2021-22/4997 Date 21.02.2022	Sri Desho Daolagupu	26,48,664.00	31,25,424.00	
75	Revised Work Order for Construction of 1 (One) No. dormitory for accomodation at Kopili Power Station, KHEP Umrongso (Group-A)	NEEPCO/KHPS/C&P (C) /F-05/2022-23/864 Date 15.06.2022	Sri Kumar Sunar	₹ 25,07,830.51	29,59,240.00	
8	Revised order for "Construction of 750 KVA DG Set foundation and DG Room for Kopili Power Station(4x50) Dima Hasao, Assam	NEEPCO/KHPS/C&P (C) /F-05/2022-23/2954 Date 28.09.2022	Sri Desho Daolagupu	24,06,286.00	28,39,417.48	
76	Construction of DG Room Building at Kopili Valve House under KHPS, Umrongso Assam	NEEPCO/KHPS/C&P (C) /F-05/2021-22/4811 Date 09.02.2022	Sri Ramsing Rongfi	4,03,191.00	4,75,765.38	
84	Construction of foundation for 750 KVA DG and 02 (two) nos. of 1.6 MVA station Supply Transformer at KOPILI Power Station KHEP	NEEPCO/KHEP/C&P @/F-05/2021-2022/1352 Date 29.06.2021	Sri VS Manga Changsan	3,04,565.54	3,59,387.34	
WO_ 2727	Construction of Support structure and fencing around the Porta Cabin at Kopili Power Station, KHPS, Umrangso	NEEPCO/KHPS/C&P @/F-05/2023-24/2727 Date 30.11.2023	Sri Khogendra Hojai	5,90,725.36	6,97,055.92	
WO_ 1794	Construction of of panel room at Umrong Dam at KHPS , NEEPCO Ltd, Umrangso , Dima Hasao	NEEPCO/KHPS/C&P @/F-05/2023-24/1794 Date 07.10.2023	Sri Biren Singh Engti	4,26,326.00	5,03,064.68	0.00
			Total	1,12,01,964.33	1,32,18,318.80	-
			GST Component @ 18%	20,16,353.58		
			Grand total	1,32,18,317.91		

- 603 -

C107

REVISED COST ESTIMATE OF R R&M OF KOPILI 200 NW

M - Plantation

Sl. No.	Description of items	Unit	Sanctioned Cost			As per Revised Estimate								Variation (with respect to sanctioned cost)		Variation due to					
			Qty	Rate	Amount (Rs. In Lakhs)	Completed work up to MAY-2024 PL			Balance wok			Total		Positive (+)	Negative (-)	Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Additional requirement/ New Item /Addition	Other causes (specify)	Statutory Levies
						Qty	Rate	Amount (Rs. In Lakhs)	Qty	Rate	Amount (Rs. In Lakhs)	Qty	Amount (Rs. In Lakhs)								
1	2	3	4	5	6	10	11	12	13	14	15	16	17	18	19	20	21	22	24	25	26
1	Plantation programme including Gardens etc. required for beautification as considered necessary	LS			80.00			0.00			-		0.00	0	80			0.00	-80		
	Total				80.00			0.00			0.00		0.00	0	80			0.00	-80.00		

C108

REVISED COST ESTIMATE OF RECONSTRUCTION, R&M OF KOPILI 200 MW

O- Miscellaneous-Abstract

Sl. No.	Description of Items	Unit	Sanctioned Cost of CEA at Jan'21 PL			As per Revised Estimate								Variation (with respect to sanctioned cost)		Variation due to				
			Qty	Rate	Amount (Rs. In Lakhs)	Completed work up to MAY-2024			Balance wok			Total		Positive (+)	Negative (-)	Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Additional requirement / New Item /Addition	Other causes (specify)	Statutory Levies
						Qty	Rate	Amount (Rs. In Lakhs)	Qty	Rate	Amount (Rs. In Lakhs)	Qty	Amount (Rs. In Lakhs)								
1	2	3	4	5	6	10	11	12	13	14	15	16	17	18	19	20	21	22	24	25	26
1	O Miscellaneous Expense	LS			600.00			4418.94			98.88		4516.81	3916.81	0			3319.33			597.48
Total					600.00			4418.94			98.88		4516.81	3916.81	0			3319.33	0.00	0.00	597.48

C 109

REVISED COST ESTIMATE OF R R&M OF 200MW KPS

O-Misc_Annex1

Sl. No.	Description of items	Unit	CEA vetted Cost at Jan 2021 PL			As per Revised Cost Estimate at MAY'24 PL							
			Qty	Rate	Amount (Rs. In Lakhs)	Completed as on MAY'24 PL			Balance wok			Total	
						Qty	Rate	Amount (Rs. In Lakhs)	Qty	Rate	Amount (Rs. In Lakhs)	Qty	Amount (Rs. In Lakhs)
1	Fire fighting equipments							46.31			0.00		46.31
2	**Construction Power**							1840.39			98.12		**1938.51**
3	Repairing & Maintenance Charges of Utility& Workshop Works							130.88			0.00		**130.88**
4	Hired Vehicle and other charges							411.26			0.00		**411.26**
5	Hiring/Supply of Labour at worksite and hired/departmental equipments							33.31			1.75		35.06
6	R & M Water Supply Facilities							0.77			0.00		0.77
7	**R & M DG Set**							615.49			0.00		**615.49**
8	R&M Charges of telecommunication system							26.48			0.00		26.48
9	Purchase od Medicine & Maintenance of Dispenceries							2.69			0.00		2.69
10	**Security Arrangement**							758.57			0.00		**758.57**
11	Publication & pamphlets							1.54			0.00		1.54
12	Running of Guest House/ Transit Camps							2.04			0.00		2.04
13	Loss on Write off/Unres/obs of fixed							0.84			0.00		0.84
14	Swachh Bharat							0.07			0.00		0.07
15	Entertainment Expense							0.71			0.00		0.71

C110

REVISED COST ESTIMATE OF R R&M OF 200MW KPS

O-Misc_Annex1

Sl. No.	Description of items	Variation (with respect to sanctioned cost)		Variation due to					
		Positive (+)	Negative (-)	Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Additional requirement / New Item /Addition /Deletion	Other causes (specify)	Statutory Levies
1	Fire fighting equipments								
2	**Construction Power**								
3	Repairing & Maintenance Charges of Utility& Workshop Works								
4	Hired Vehicle and other charges								
5	Hiring/Supply of Labour at worksite and hired/departmental equipments								
6	R & M Water Supply Facilities								
7	**R & M DG Set**								
8	R&M Charges of telecommunication system								
9	Purchase od Medicine & Maintenance of Dispenceries								
10	**Security Arrangement**								
11	Publication & pamphlets								
12	Running of Guest House/ Transit Camps								
13	Loss on Write off/Unres/obs of fixed								
14	Swachh Bharat								
15	Entertainment Expense								

~ 607 ~

C111

REVISED COST ESTIMATE OF R R&M OF 200MW KPS

O-Misc_Annex1

Sl. No.	Description of items	Unit	CEA vetted Cost at Jan 2021 PL			As per Revised Cost Estimate at MAY'24 PL							
			Qty	Rate	Amount (Rs. In Lakhs)	Completed as on MAY'24 PL			Balance wok			Total	
						Qty	Rate	Amount (Rs. In Lakhs)	Qty	Rate	Amount (Rs. In Lakhs)	Qty	Amount (Rs. In Lakhs)
16	Social Welfare (Others)							8.28			0.00		8.28
17	Postage & Telegram							0.31			0.00		0.31
18	Other profesional charges							3.15			0.00		3.15
19	Rent office-Accommodation							68.77			0.00		68.77
20	Bank charges							0.47			0.00		0.47
21	License fee							2.54			0.00		2.54
22	Other Miscellieneous Expense							49.93			0.00		49.93
23	Corporate Expense Finance Costs							204.92			0.00		**204.92**
24	Corporate Expense Depreciation							57.33			0.00		**57.33**
25	Corporate Expense Other Expense							149.90			0.00		**149.90**
	Total				600.00			4416.94			99.88		4516.81
					508.47			3743.17			84.64		3827.81
					91.53			673.77			15.24		689.01
					600.00			4416.94			99.88		4516.81

C112

REVISED COST ESTIMATE OF R R&M OF 200MW KPS

O-Misc_Annex1

Sl. No.	Description of items	Variation (with respect to sanctioned cost)		Variation due to					
		Positive (+)	Negative (-)	Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Additional requirement / New Item /Addition /Deletion	Other causes (specify)	Statutory Levies
16	Social Welfare (Others)								
17	Postage & Telegram								
18	Other profesional charges								
19	Rent office-Accommodation								
20	Bank charges								
21	License fee								
22	Other Miscelleneous Expense								
23	Corporate Expense Finance Costs								
24	Corporate Expense Depreciation								
25	Corporate Expense Other Expense								
	Total	3916.81	0.00			3319.33			597.48

3319.33
597.48
3916.81

~ 609 ~

C113

O-Misc_AnnexA1

Hire Charge DG Sets & POL charges

Sl No	Hire Charge DG set Order No	Bill No	DG charge	18% GST	OPTR. charge	GST	Change Over	GST	Transportation	GST	Bill Amount (Rs)	POL Charges (O_misc_POL Bill)	Total Amount (Col 12+ Col 13) (Rs. In Lakhs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	NEEPCO/KHEP/C&P/Khd PS/W-217/21-23/01 Dtd 01//04/22	KDS/0020/2022-23 dtd 28/04/2022	190000	34200	10000	3600			21000	1050	269850		
2	NEEPCO/KHEP/C&P/Khd.PS/W-217/21-23/01 Dtd 01//04/22	ABC Challan No-0018 Dtd 24/03/22 Extra bill for Transportation Charges of Hire DG							21000	1050	22050		
3	NEEPCO/KHEP/C&P/U&W/W-217/22-23/316 Dtd 30//04/22	KDS/0037/2022-23 dtd 17/05/2022	190000	34200	20000	3600			21000	1050	269850		
4	NEEPCO/KHEP/C&P/U&W/W-217/22-23/812 Dtd 13/06/22	KDS/0055/2022-23 dtd 18/06/2022	110000	19800	20000	3600			21000	1050	175450		
5	NEEPCO/KHEP/C&P/U&W/W-217/22-23/1135 Dtd 29//06/22	KDS/0072/2022-23 dtd 02/07/2022	504291	90772.56	51083	9554.94					655701		
6	NEEPCO/KHEP/C&P/U&W/W-217/22-23/1135 Dtd 29//06/22	KDS/0073/2022-23 dtd 01/07/2022	190000	34200	20000	3600			21000	1050	269850		
7	NEEPCO/KHEP/C&P/U&W/W-217/22-23/1135 Dtd 29//06/22	KDS/0083/2022-23 dtd 22/07/2022	190000	34200	20000	3600					247800		
8	NEEPCO/KHEP/C&P/U&W/W-217/22-23/812 Dtd 13//06/22	KDS/0084/2022-23 dtd 22/07/2022	110000	19800	20000	3600					153400		
9	NEEPCO/KHEP/C&P/U&W/W-217/22-23/1135 Dtd 29//06/22	KDS/0085/2022-23 dtd 25/07/2022	363376	65407.68	38249	6884.82					473917		
10	NEEPCO/KHEP/C&P/U&W/W-217/22-23/1135 Dtd 29//06/22	KDS/0106/2022-23 dtd 17/08/2022	190000	34200	20000	3600					247800		
11	NEEPCO/KHEP/C&P/U&W/W-217/22-23/1695 Dtd 01//08/22	KDS/0109/2022-23 dtd 16/08/2022	190000	34200	30000	5400			21000	1050	269850		
12	NEEPCO/KHEP/C&P/U&W/W-217/22-23/1135 Dtd 29//06/22	KDS/0108/2022-23 dtd 31/08/2022	382976	68927.68	40249	7244.82					498897		
13	NEEPCO/KHEP/C&P/U&W/W-217/22-23/1695 Dtd 01//08/22	KDS/0110/2022-23 dtd 31/08/2022	190000	34200	20000	3600					247800		
14	NEEPCO/KHEP/C&P/U&W/W-217/22-23/4527 Dtd 30//11/22	KDS/0198/2022-23 dtd 17/12/2022	190000	34200	20000	3600	11560	2070	21000	1050	283420		
15	NEEPCO/KHEP/C&P/U&W/W-217/22-23/4563 Dtd 30//11/22	KDS/0200/2022-23 dtd 17/12/2022	474499	85409.82	40000	7200	23080	4160	21000	1050	656400		
16	NEEPCO/KHEP/C&P/U&W/W-217/22-23/5194 Dtd 26//12/22	KDS/0223/2022-23 dtd 06/01/2023	595413	106994.7	107165	19289.7			21000	1050	844016		
17	NEEPCO/KHEP/C&P/U&W/W-217/22-23/5178 Dtd 26//12/22	KDS/0221/2022-23 dtd 06/01/2023	1116251	200825.2	117697	21185.5			21000	1050	1477871		
18	NEEPCO/KHEP/C&P/U&W/W-217/22-23/5166 Dtd 26//12/22	KDS/0222/2022-23 dtd 06/01/2023	652333	117419.9	88667	15960.1					874380		
19	NEEPCO/KHEP/C&P/U&W/W-217/22-23/5159 Dtd 26//12/22	KDS/0224/2022-23 dtd 06/01/2023	589000	106020	62000	11160					768180		
20	NEEPCO/KHEP/C&P/U&W/W-217/22-23/5187 Dtd 26//12/22	KDS/0225/2022-23 dtd 06/01/2023	380000	68400	40000	7200					495600		
21	NEEPCO/KHEP/C&P/U&W/W-217/22-23/5187 Dtd 26//12/22	KDS/0227/2022-23 dtd 27/01/2023	190000	34200	20000	3600	11500	2070			261370		
22	NEEPCO/KHEP/C&P/U&W/W-217/22-23/5160 Dtd 26//12/22	KDS/0228/2022-23 dtd 13/01/2023	417792	78802.56	46082	8294.76	11500	2070			564540		
23	NEEPCO/KHEP/C&P/U&W/W-217/22-23/5187 Dtd 26//12/22	KDS/0264/2022-23 dtd 22/02/2023	190000	34200	20000	3600	11500	2070			261370		
24	NEEPCO/KHEP/C&P/U&W/W-217/22-23/5160 Dtd 26//12/22	KDS/0263/2022-23 dtd 21/02/2023	467293	82312.74	47082	8476.76	11500	2070			599931		
25	NEEPCO/KHEP/C&P/U&W/W-217/23-24/459 Dtd 22//01/23	KDS/043/2023-24 dtd 31/05/2023	1170877	210757.9	123248	22184.6	34500	6210			1567776		
26	NEEPCO/KHEP/C&P/U&W/W-217/23-24/160 Dtd 19//04/23	KDS/008/2023-24 dtd 25/04/2023	190000	34200	20000	3600					247800		
27	NEEPCO/KHEP/C&P/U&W/W-217/23-24/373 Dtd 11//05/23	KDS/037/2023-24 dtd 19/05/2023	190000	34200	20000	3600					247800		
28	NEEPCO/KHEP/C&P/U&W/W-217/23-24/219 Dtd 26//04/23	KDS/013/2023-24 dtd 27/04/2023	1095000	197100	60000	10800			32000	1600	1396500		
29	NEEPCO/KHEP/C&P/U&W/W-217/23-24/1020 Dtd 11//07/23	KDS/091/2023-24 dtd 18/07/2023	778667	140160.1	42667	7680.06			32000	1600	1002871		
30	NEEPCO/KHEP/C&P/U&W/W-217/23-24/867 Dtd 22//06/23	KDS/089/2023-24 dtd 18/07/2023	502709	90487.62	52916	9524.88	19550	3519			678706		
31	NEEPCO/KHEP/C&P/U&W/W-217/23-24/952 Dtd 04//07/23	KDS/090/2023-24 dtd 18/07/2023	430667	77520.06	45333	8159.94					560680		
32	NEEPCO/KHEP/C&P/U&W/W-217/23-24/1369 Dtd 31//08/23	KDS/123/2023-24 dtd 08/09/2023	380000	68400	40000	7200	13000	4160			522760		
33	NEEPCO/KHEP/C&P/U&W/W-217/23-24/1432 Dtd 12//09/23	KDS/128/2023-24 dtd 14/09/2023	365000	65700	20000	3600			67400	3370	521700		
34	NEEPCO/KHEP/C&P/U&W/W-217/23-24/1423 Dtd 12//09/23	KDS/129/2023-24 dtd 14/09/2023	33000	5940	20000	3600			15850	793	78350		
35	NEEPCO/KHEP/C&P/U&W/W-217/23-24/1503 Dtd 16//09/23	KDS/140/2023-24 dtd 13/10/2023	95000	17100	10000	1800	5750	1035	22050		152735		
36	NEEPCO/KHEP/C&P/U&W/W-217/23-24/2123 Dtd 18//10/23	KDS/145/2023-24 dtd 26/10/2023	95000	17100	10000	1800	5750	1035			130685		
		TOTAL AMOUNT(Rs)	13382547	2408858	1364238	245563	169050	30429	400300	18913	18019933	43512640	625.49

C114

O-Misc-AnnexA2

A Hiring/supply of Manpower

Sl No.	Ref. No.	Name of Works	W.O.No	Name of Contractor	Completed up to MAY' 2024		Balance
					Amount (Rs) Excl. GST	Amount (Rs) Incl. GST (@18%)	Amount (Rs) Incl. GST (@18%)
1	11	Operation of Departmental mini Poclain under Reconstruction, Renovation and Modernisation of KHPS (4x50 MW) Umrongso by providing manpower from 01.07.2022 to 30.09.2022	NEEPCO/KHPS/C&P (C) /F-07/2022-23/1990 Date 29.08.2022	Sri Khagendra Hojai	1,68,826.00	1,99,215.00	
2	20	Operation of Departmental mini Poclain under Reconstruction, Renovation and Modernisation of KHPS (4x50 MW) Umrongso by providing manpower from 02.01.2022 to 30.06.2022	NEEPCO/KHPS/C&P (C) /F-07/2022-23/4302 Date 05.01.2022	Sri Khagendra Hojai	3,33,182.00	3,93,155.00	
5	80	Operation of Departmental Mini Poclain under Reconstruction, Renovation and Modernization of KHPS (4x50 MW) Umrongso by providing manpower from 01.10.2022 to 30.06.2023	NEEPCO/KHPS/C&P ©/F-07/2022-2023/3937 Date 15.10.2022	Sri Khagendra Hojai	5,32,294.00	6,28,106.92	
6	81	Operation of Departmental Mini Poclain under Reconstruction, Renovation and Modernization of KHPS (4x50 MW) Umrongso by providing manpower from 01.05.2021 to 31.08.2021	NEEPCO/KHEP/C&P ©/F-07/2021-2022/2247 Date 27.08.2021	Sri Khagendra Hojai	3,54,322.00	4,18,099.96	
7	88	Supply of unskilled labour for clearing of Wye Piece of Penstock 1 & 2 of Kopili Power Station to assist M/S Gulachi Engineers Pvt. Ltd. in thickness mapping of Umrong Penstock and final cleaning of rainwater and drainage dewatering sump of Kopili Power Station for erection of pumps by M/S Buchya Controls (from 03.02.2021 to 31.03.2021)	NEEPCO/KHEP/C&P ©/F-07/2021-2022/810 Date 18.05.2021	Sri Ramsing Ronghi	3,74,693.00	4,42,138	
8	94	Engagement of 10 nos. of unskilled on mandays for the work of repairing of 1st Part of Central Store, reloading of cement bags & taking care of cement bags & other materials in central store, KHEP & hiring of tractor for central store KHEP, NEEPCO Ltd. Umrongso (w.e.f 25.02.2021 to 30.04.2021)	NEEPCO/KHEP/C&P ©/F-07/2021-2022/455 Date 28.04.2021	Sri Ramsing Ronghi	3,15,705.00	3,73,712.00	
9	WO_2358	Operation of Departmental Mini Poclain under Reconstruction, Renovation and Modernization of KHPS (4x50 MW) Umrongso by providing manpower from 01.07.2023 to 30.06.2024	NEEPCO/KHEP/C&P ©/F-05/2023-2024/2359 Date 21.11.2023	Sri Khagendra Hojai	7,42,468.33	8,76,136.23	1,75,227.25
			Sub-Total			33,10,583.11	1,75,227.25

B Fire Fighting Equipment

1	71	Construction of 2 Two) Nos. of Fire Fighting Tanks at Kopili Power Station, KHPS, Umrongso	NEEPCO/KHPS/C&P (C) /F-05/2022-23/2769 Date 20.09.2022	Sri Ramsing Ronghi	39,24,190.00	46,30,544.20	

~ 611 ~

C115

O-Misc_Annex3

Sl. No.	Ref No.	Name of Works/goods/services	Name and Address of Contractor	Ref. No. of Contract/Order	Date of Contract Order	Contract Price (in Rs.)	GST Terms (Inclusive/Exclusive GST)	Amount (inc. of GST)	Balance/liability (inc of GST)	Remarks
A		RUNNING & MAINTENANCE (Utility & Workshop)								
1	UW-1	Regularizing Order for Supply of 10 mm twin core Aluminium cable for Utility wing KHEP, NEEPCO Ltd.	M/S Jainson Industrial House, Pabitra Bhawan, A.T. Road, Ghy-781001	NEEPCO/BHEP/C&P/W-217/AP/19/2019-20/4064 Dtd. 18.01.2020	18.01.2020	31287.00	Excl. GST @ 18%	36918.66	0.00	
2	UW-2	Regularizing Order for Supply of LED Luminaries required for Utility at KHEP, NEEPCO Ltd.	M/S Electromech Engineering Enterprise, Parbi Complex, 2nd Floor, Room No 201, Near Panbazar Ove Bridge, AT Road, Ghy-781001	NEEPCO/KHEP/C&P/W-217/Utility/2020-21/2093 Dtd. 30.08.2020	30.09.2020	305135.00	Excl. GST 12%	304791.20	0.00	
3	UW-3	Order for awarding the contract for "Supply and Delivery of Consumable Electrical materials required for Utility wing at KHPS, NEEPCO Ltd.	M/S Electromech Engineering Enterprise, Parbi Complex, 2nd Floor, Room No.201, Near Panbazar Ove Bridge, AT Road, Ghy-781001	NEEPCO/KHEP/C&P/T-856/Utility/2020-21/1265 Dtd. 12.11.2020	12.11.2020	1312063.00	Incl. GST	1322019.00	0.00	
4	UW-4	Order for awarding the contract for "Repairing of one no. 1000 KVA, 33/0.415 KV Copper wound and one no. 150 KVA, 11/0.415 KV Aluminium wound Transformers of KHEP, NEEPCO Ltd.	M/S Power Maker, IPIP Complex, Amingaon, Ghy-781031	NEEPCO/KHEP/C&P/Utility/W-25/2020-21 Dtd.15.12.2020	15.12.2020	728402.00	Incl. GST	728902.00	0.00	
5	UW-5	Order for Supply and Delivery of 3-phase, 4 wire Energy meter and different capacity of CTs required for Utility & Workshop at KHEP, NEEPCO Ltd.	M/S Edison International, 14, Lower Ground Floor, TN Tower, AT Road, Ghy-781001	NEEPCO/KHEP/C&P/Utility & Workshop/W-217/2021-22/834 Dtd.18.05.2021	18.05.2021	75785.00	Excl. GST	88436.30	0.00	
6	UW-6	Order for "Supply and Delivery of Electrical materials required for Utility Wing at KHEP, NEEPCO Ltd.	M/S Jainson Industrial House, Pabitra Bhawan, A.T. Road, Ghy-781001	NEEPCO/KHEP/C&P/Utility & Workshop/W-217/2021-22/0971 Dtd.05.08.2021	05.08.2021	234201.00	Excl. GST	252757.18	0.00	
7	UW-7	Order for "Supply, Delivery of required materials, Underground Laying, Installation & Commissioning of 50 sq mm 3 3C Aluminium 33 KV HT XLPE Armoured Cable (Make: Havells/Polycab) to Addl-II at KHEP, NEEPCO Ltd.	M/S Edison International, 14, Lower Ground Floor, TN Tower, AT Road, Ghy-781001	NEEPCO/KHEP/C&P/Utility & Workshop/W-217/2020-21/5277 Dtd.17.03.2021	17.03.2021	4663988.00	Incl. GST	4663988.00	0.00	
8	UW-8	Order for awarding the contract for "Repairing of one no. 630 KVA, 11/0.415 KV, Make: Crompton Greaves Transformer, Serial No. 30979V of KHEP, NEEPCO Ltd.	M/S Power Maker, IPIP Complex, Amingaon, Ghy-781031	NEEPCO/KHEP/C&P/Utility & Workshop/W-25/2021-22/1799 Dtd.30.07.2021	30.07.2021	361987.00	Incl. GST	361987.00	0.00	
9	UW-9	Order for "Supply of 3-phase, 4 wire Energy meter different capacity of CTs required for Utility & Workshop at KHEP, NEEPCO Ltd.	M/S Edison International, 14, Lower Ground Floor, TN Tower, AT Road, Ghy-781001	NEEPCO/KHEP/C&P/Utility & Workshop/W-217/2021-22/9153 Dtd.25.10.2021	25.10.2021	82896.00	Excl. GST	97817.28	0.00	
10	UW-10	Order for "Supply and Delivery of 33 KV Line materials required for Addl-II power supply line at KHEP, NEEPCO Ltd.	M/S Edison International, 14, Lower Ground Floor, TN Tower, AT Road, Ghy-781001	NEEPCO/KHEP/C&P/Utility & Workshop/W-217/2021-22/5745 Dtd.24.11.2021	24.11.2021	143968.00	Incl. GST	143968.00	0.00	

C116

Sl. No.	Ref No.	Name of Works/goods/services	Name and Address of Contractor	Ref. No. of Contract/Order	Date of Contract/ Order	Contract Price (in Rs.)	GST Terms (Inclusive/Exclusive GST)	Amount (inc. of GST)	Balance/Liability (inc of GST)	Remarks
11	UW-11	Work Order for "Re-Construction of 11 KV line from Main Security Gate to Namghar Area of Kopili PS by utilising dis Departmental materials at KHEP, NEEPCO Ltd.	Smt. Ganga Joishi, Umrongso Bazar, Dist. Dima Hasao, Assam-788931	NEEPCO/KHEP/C&P/Utility & Workshop/W-217/2021-22/3925 Dtd.07.12.2021	07.12.2021	85525.00	Excl. GST	100919.50	0.00	
12	UW-12	Order for Internal Electrification of two nos. new Dormitory at Kopili Power Station of KHPS, NEEPCO Ltd.	Smt. Ganga Joishi, Umrongso Bazar, Dist. Dima Hasao, Assam-788931	NEEPCO/KHPS/C&P/Utility /W-217/2021-22/4015 Dtd.16.02.2022	16.02.2022	224027.00	Excl. GST	264413.86	0.00	
13	UW-13	Order for supply of HAVELLS make XLPE, Aluminium armored cable for Utility Wing of KHPS, NEEPCO Ltd.	M/S Anisur Electricals, Suraj Nagar, Six Mile, GS Road, Ghy-781022	NEEPCO/KHPS/C&P/Utility /W-217/2021-22/4041 Dtd.10.02.2022	10.02.2022	200000.00	Incl. GST	200000.00	0.00	
14	UW-14	Order for "Supply of Spare parts for JCB 3D PLUS Excavator attached to Utility & Workshop at KHPS, NEEPCO Ltd.	M/S O/o EARTHMOVERS, A unit of Oja Automobiles (P) Ltd, O/o COMPLEX, NH37 Basistha Chariali, Ghy-781029	NEEPCO/KHPS/C&P/Utility & Workshop/W-217/2021-22/565 Dtd.21.05.2021	21.05.2021	36092.60	Incl. GST	38592.00	0.00	
15	UW-15	Work Order for "Supply, Fabrication, Fitting & Fixing of Cradle Guard with G.I. wire covering 33 KV Line and 11 KV Line at Kopili PS area, KHPS, NEEPCO Ltd.	Smt. Ganga Joishi, Umrongso Bazar, Dist. Dima Hasao, Assam-788931	NEEPCO/KHPS/C&P/Utility & Workshop/W-217/2021-22/806 Dtd.13.08.2021	13.08.2022	59377.00	Incl. GST	59377.00	0.00	
16	UW-16	Work Order for Internal Wiring of newly constructed Store building near Umrong Halah area of Kopili PS at KHPS, NEEPCO Ltd.	Smt. Ganga Joishi, Umrongso Bazar, Dist. Dima Hasao, Assam-788931	NEEPCO/KHPS/C&P/Utility & Workshop/W-217/2021-22/1482 Dtd.30.01.2022	30.01.2021	240218.80	Excl. GST	283457.24	0.00	
17	UW-17	Regularizing Order for "Supply of Energy meters and CTs to Utility wing of KHPS, NEEPCO Ltd.	M/S Edison International, 14, Lower Ground Floor, TH Tower, AT Road, Ghy-781001	NEEPCO/KHPS/C&P/Utility /W-217/2022-23/1472 Dtd.15.07.2022	15.07.2021	40986.00	Excl. GST	48365.48	0.00	
18	UW-18	Work Order for "Painting of 33/11 KV Sub-Station of Kopili PS at KHPS, NEEPCO Ltd.	Smt. Ganga Joishi, Umrongso Bazar, Dist. Dima Hasao, Assam-788931	NEEPCO/KHPS/C&P/Utility & Workshop/W-217/2022-23/1460 Dtd.15.07.2022	15.07.2022	54454.00	Excl. GST	64255.72	0.00	
19	UW-19	Order for "Supply of luminaries to Utility wing of KHPS, NEEPCO Ltd.	M/S Dee Lights, Wall Ford, Near Fly Over, KK Bora Building, GS Road, Ghy-781005	NEEPCO/KHPS/C&P/Utility /W-217/2022-23/1932 Dtd.18.08.2022	18.08.2021	76000.00	Excl. GST	89680.00	0.00	
20	UW-20	Order for supply & delivery of consumable items required for Utility wing of KHPS, NEEPCO Ltd.	M/S Industar Industrial Corporation, Chandni Chowk Street, Kolkata-700072	NEEPCO/KHPS/C&P/Utility /T-497/2022-23/2325 Dtd 31.08.2022	31.08.2022	1068772.00	Incl. GST	1068772.00	0.00	
21	UW-21	Order for Internal Electrification of newly constructed Kiosk room at Kopili Switchyard of KHPS, NEEPCO Ltd.	Smt. Ganga Joishi, Umrongso Bazar, Dist. Dima Hasao, Assam-788931	NEEPCO/KHPS/C&P/Utility /W-217/2022-24/471 Dtd.22.05.2023	22.05.2023	176350.00	Excl. GST	206295.00	0.00	
22	UW-22	Order for "Supply of Split Type Air Conditioners required for installation in the Porta Cabin installed at Kopili PS site of KHPS, NEEPCO Ltd.	M/S SANSHO, Ganeshguri Chariali, Ghy-781006	NEEPCO/KHPS/C&P/A-36/2023-24/572 Dtd.29.05.2023	29.05.2023	312000.00	Incl. GST	312000.00	0.00	
23		Order for "Supply of Spare parts for JCB 3D PLUS Excavator of Utility & Workshop at KHEP, NEEPCO Ltd.	NEEPCO/KHEP/C&P/Utility & Workshop/W-15/2021-22/1981 Dtd.09.08.2021	M/S O/o EARTHMOVERS, A unit of Oja Automobiles (P) Ltd, O/o COMPLEX, NH37 Basistha Chariali, Ghy-781029	09.08.2021	2,36,268.64	Excl. GST @ 18%	278797.00	0.00	

C117

Sl. No	Ref No.	Name of Works/goods/services	Name and Address of Contractor	Ref. No. of Contract/Order	Date of Contract/ Order	Contract Price (in Rs.)	GST Term (Inclusive/Exclusive GST)	Amount (Inc. of GST)	Balance/liability (Inc of GST)	Remarks
24	UW-25	Order for "Repairing of one no. faulty transformer Prog Electrical Make (Sl. No. 860/2) having capacity of 250 KVA, 11/0.4 KV, 3 Phase belongs to KHPS, NEEPCO Ltd.	M/S Power Maker, EPIP Complex, Amingaon, Ghy-781031	NEEPCO/KHPS/C&P/ Utility/W-217/2023-24/2378 Dtd.16.09.2023	16.09.2023	165318.00	Incl. GST	165318.00	0.00	
25	UW-26	Supply, installation, testing and commissioning of 30Mtr four Nos and 15Mtr one No. High Mast Tower at Kopili Power Station, KHPS, NEEPCO Ltd, Umrongso, Assam	SHREE GEE ENTERPRISES GHAZIABAD UTTAR PRADESH- 201001	Sanction No: S116877073077/21 Sanction Date: 30-Dec-2021	30.12.21	2930900.00	Incl. GST	2930900.00	0.00	
26	UW-27	Order for Supply of Spares required for repairing of JCB 30 Plus Excavator of Kopili Hydro Power Station, Umrongso, Assam	M/S MIMS (India) Solutions 23-24, Bailsha Charialli, Towards Jalukbari, Guwahati-781028	NEEPCO/KHPS/C&P/Mechshop/W-217/2023-24/2016 Dtd.18.10.2023	18.10.2023	19179	Excl of GST	179898.60	0.00	
		Total of Misc Repairing and Maintenance works						13686191.03		
						Rs in Lacs		136.86		

C118

O-Misc POL Charges

POL Charges DG Set					
Sl. no.	Bill No.	Date	Qnty (Lt)	Amount	Framework PO
1	216	31-03-2021	400	₹ 33,064.00	
2	240	30-04-2021	2200	₹ 1,81,852.00	
3	252	31-05-2021	2000	₹ 1,68,900.00	
4	270	06-07-2021	2000	₹ 1,80,460.00	
5	182	15-10-2021	1800	₹ 1,72,458.00	
6	230	10-12-2021	600	₹ 50,022.00	
7	256	18-12-2021	600	₹ 50,022.00	
8	267	26-03-2022	600	₹ 51,906.00	
9	268	28-03-2022	600	₹ 52,476.00	
10	270	06-04-2022	5000	₹ 4,65,074.00	
11	286	12-04-2022	4000	₹ 3,74,840.00	
12	287	19-04-2022	3600	₹ 3,37,356.00	
13	290	26-04-2022	4200	₹ 4,31,066.00	
14	300	04-05-2022	3840	₹ 3,59,846.00	
15	4987	17-05-2022	3800	₹ 3,54,312.00	
16	304	12-05-2022	3600	₹ 3,37,356.00	
17	309	28-05-2022	3600	₹ 3,10,464.00	
18	308	26-05-2022	3000	₹ 2,63,202.00	
19	312	31-05-2022	600	₹ 51,744.00	
20	315	03-06-2022	4800	₹ 4,13,952.00	
21	316	07-06-2022	3600	₹ 3,10,464.00	
22	319	12-06-2022	4400	₹ 3,79,456.00	
23	sss/ioc/cr/09	18-06-2022	4000	₹ 3,34,680.00	
24	323	22-06-2022	4800	₹ 4,13,952.00	
25	324	25-06-2022	4000	₹ 3,44,960.00	
26	325	29-06-2022	3600	₹ 3,10,464.00	
27	332	02-07-2022	2200	₹ 1,89,728.00	
28	335	05-07-2022	4000	₹ 3,44,960.00	
29	336	08-07-2022	4000	₹ 3,44,960.00	
30	338	12-07-2022	4000	₹ 3,44,960.00	
31	340	15-07-2022	4000	₹ 3,44,960.00	
32	342	20-07-2022	4000	₹ 3,44,960.00	
33	343	25-07-2022	4000	₹ 3,44,960.00	
34	345	27-07-2022	4000	₹ 3,44,960.00	
35	346	31-07-2022	4000	₹ 3,48,600.00	
36	353	04-08-2022	4000	₹ 3,48,680.00	
37	354	07-08-2022	4000	₹ 3,48,680.00	
38	356	11-08-2022	4000	₹ 3,48,680.00	
39	358	16-08-2022	4000	₹ 3,48,680.00	
40	360	20-08-2022	4000	₹ 3,48,680.00	

C119

O-Misc_POL_Charges

POL Charges DG Set					
Sl. no.	Bill No.	Date	Qnty (Lt)	Amount	Framework PO
41	362	24-08-2022	4400	₹ 3,83,548.00	
42	364	27-08-2022	4000	₹ 3,48,680.00	
43	366	31-08-2022	4000	₹ 3,48,680.00	
44	376	05-09-2022	4000	₹ 3,48,680.00	
45	377	08-09-2022	4000	₹ 3,48,680.00	
46	380	12-09-2022	4000	₹ 3,48,680.00	
47	382	16-09-2022	4000	₹ 3,48,680.00	
48	383	20-09-2022	4000	₹ 3,48,680.00	
49	385	24-09-2022	4000	₹ 3,48,680.00	
50	391	28-09-2022	4000	₹ 3,48,680.00	
51	392	01-10-2022	4000	₹ 3,56,800.00	
52	397	04-10-2022	4000	₹ 3,56,800.00	
53	400	10-10-2022	4000	₹ 3,56,800.00	
54	401	12-10-2022	4000	₹ 3,56,800.00	
55	403	15-10-2022	4000	₹ 3,56,800.00	
56	405	19-10-2022	4000	₹ 3,56,800.00	
57	408	22-10-2022	4000	₹ 3,56,800.00	
58	411	27-10-2022	4000	₹ 3,56,800.00	
59	418	03-11-2022	4000	₹ 3,56,800.00	
60	420	07-11-2022	4000	₹ 3,56,800.00	
61	422	10-11-2022	4000	₹ 3,56,800.00	
62	423	14-11-2022	4000	₹ 3,56,800.00	
63	426	18-11-2022	4000	₹ 3,56,800.00	
64	444	27-12-2022	4000	₹ 3,56,800.00	
65	530	17-03-2023	1200	₹ 1,08,684.00	4500002670
66	531	21-03-2023	800	₹ 72,456.00	4500003106
67	534	24-03-2023	800	₹ 72,456.00	4500003121
68	542	01-04-2023	1200	₹ 1,08,684.00	4500003150
69	545	06-04-2023	1200	₹ 1,08,684.00	4500003199
70	455	03-05-2023	1200	₹ 1,09,608.00	4500003387
71	456	04-05-2023	1200	₹ 1,09,608.00	4500003399
72	548	24-04-2023	1200	₹ 1,09,608.00	4500003335
73	459	11-05-2023	1200	₹ 1,09,608.00	4500003470
74	550	25-04-2023	1200	₹ 1,09,608.00	4500003350
75	470	02-06-2023	1200	₹ 1,09,608.00	4500003679
76	472	15-06-2023	1200	₹ 1,10,232.00	4500003825
77	475	19-06-2023	1200	₹ 1,10,232.00	4500003856
78	473	16-06-2023	1200	₹ 1,10,232.00	4500003839
79	474	17-06-2023	1200	₹ 1,10,232.00	4500003839
80	477	28-06-2023	1200	₹ 1,10,844.00	4500003839

C120

O-Misc POL Charges

POL Charges DG Set					
Sl. no.	Bill No.	Date	Qnty (Lt)	Amount	Framework PO
81	482	04-07-2023	1200	₹ 1,10,844.00	4500003990
82	485	18-07-2023	1200	₹ 1,11,084.00	4500004122
83	486	20-07-2023	1200	₹ 1,11,084.00	4500004163
84	487	21-07-2023	1200	₹ 1,11,084.00	4500004164
85	490	29-07-2023	1200	₹ 1,11,084.00	4500004207
86	488	01-08-2023	1200	₹ 1,11,084.00	4500004216
87	497	04-08-2023	1600	₹ 1,48,112.00	4500004253
88	303	05-08-2023	1200	₹ 1,11,084.00	4500004259
89	305	09-08-2023	1600	₹ 1,48,112.00	4500004294
90	308	24-08-2023	1200	₹ 1,11,084.00	4500004419
91	316	09-09-2023	1200	₹ 1,11,084.00	4500004512
92	338	25-11-2023	1200	₹ 1,11,084.00	4500005212
93	73	20-12-2023	1200	₹ 1,11,084.00	4500005500
94	273	20-04-2024	800	₹ 72,400.00	4500006562
95	416	01-05-2024	1200	₹ 1,08,600.00	4500006622
96	420	07-05-2024	1400	₹ 1,26,700.00	4500006670
97	282	31-05-2024	1200	₹ 1,08,600.00	4500006874
	Sub-Total		265240.00	**₹ 2,27,01,620.00**	
	Other POL Charges			**₹ 2,08,21,020.00**	
	Total			**₹ 4,35,22,640.00**	

C121

REVISED COST ESTIMATE OF RECONSTRUCTION& R&M OF KOPILI 200MW

P - Maintenance During Construction

Sl. No.	Description of Items	Unit	Sanctioned Cost			Description of Items	BoQ			As per Revised Estimate at May'24 PL							
			Qty	Rate	Amount (Rs)		Qty	Rate	Amount	Completed work up to May-2024			Cumulated Liabilities/Balance work			Total	
										Qty	Rate	Amount (Rs.)	Qty	Rate	Amount (Rs.)	Qty	Amount (in Rs.)
						Item No 5.3 Design, supply, fabrication, transportation and installation of rubber seals, coal seal and necessary bolts and other hardware complete as per technical specifications for 3 sets of spillway radial gate as detailed below.												
						Item No 5.3.1 Wedge type rubber seal for bottom of radial gate	22.5	1827	41055.8	28.2	1827	51521.4	0.00	1827	0.00	28.2	51521.4
						Item No 5.3.2 Seal for side of rubber seal	54.3	2530	137348	52.2	2530	132144.60	0.00	2530	0.00	52.2	132144
						Item No 5.3.3 Casting of stainless rubber seal including supply of seal seats, plate and bolts and all hardware	1.00	1063000	1063000	1.00	1063000	1063000.00	0.00	1063000	0.00	1.00	1063000
						Item No 5.4 Modification of General Drive assembly of 321 capacity rope drum hoist by introduction of two nos. oil leaking system, replacement of existing worm gear, motor, shaft and plummer blocks complete. The new casing of brake, gear and motor shaft match with the existing specifications of item.												
						Item No 5.4.1 Supply and installation of motor	3.00	94500	283500	2.70	94500	255150.00	0.30	94500	28350.00	3.00	283500
						Item No 5.4.2 Supply and installation of S.W. and Flexible Shaft	3.00	40320	120960	2.70	40320	108864.00	0.30	40320	12096.00	3.00	120960
						Item No 5.4.3 Supply and installation of plummer blocks	38.00	15120	486360	37.00	15120	408240.00	3.00	15120	45360.00	40.00	453600
						Item No.5.7 Replacement of existing wire rope and supply & installation of the same with new one as per technical specifications complete	1350.00	1062	1433700	270.00	1062	286740.00	30.00	1062	31860.00	300.00	318600
						Item No. 5.13 Modification of upper bowl including fabrication of rope drum hoist and attachment of nuts	1.00	885000.00	885000.00	1	885000	885000.00	0	885000	0	1	885000.00
						Item No 2.6 Design, supply, fabrication, transportation and installation of rubber seals, coal seal and necessary bolts and other hardware complete as per technical specifications for 1 sets of												
						Item No 2.6.1 Supply of Music note type rubber seal for side and top of gate	18.25	2268.00	36855.00	16.25	2268	36855.00	0	2268	0	16.25	36855.00
						Item No 2.6.2 Supply of wedge type seal for bottom	8.13	2079.00	16881.88	8.13	2079	16902.27	0	2079	0	8.13	16902.27

C122

REVISED COST ESTIMATE OF RECONSTRUCTION RAIN OF KOPILI 200MW

- Maintenance During Construction

Sl. no.	Description of items	Unit	Sanctioned Cost			Description of items	Variation (with respect to sanctioned cost)			Variation due to						Remarks / Source of Support Doc
			Qty	Rate	Amount (Rs)		Lac	Positive (+)	Negative (-)	Price Escalation	Change in Scope/D esign	Inadequate Provision/ over provision	Additional requirement / New item /Addition /Deletion	Other causes (specify)	Statutory Levies	
						Item No 5.5 Design, supply, fabrication, transportation and installation of rubber seals, seal seat and necessary bolts and other hardware complete as per technical specifications for 3 sets of spillway radial gate as detailed below:										
						Item No 5.5.1 Design, supply, fabrication, transportation and installation of rubber seals, seal seat and necessary bolts and other hardware complete as per technical specifications for 3 sets of spillway radial gate as detailed below:										This item was covered in DPR under item No. 1.1 of C/Works HM however a lumpsum cost was sanctioned in the DPR.
						Item No 5.5.2 Supply of rubber seal for bottom of radial gate										
						Item No 5.5.3 Fixing of above rubber seal including supply of bolt, nut, nuts and bolts and all hardware										
						Item No 5.6 Modification of Central Drive assembly of 01 (one) capacity rope drum hoist by introduction of two nos. of braking system, replacement of existing worm gear, motor, shaft and plummer blocks complete. The item rating of brake, gear and motor shall match with the existing specifications of item.										
						Item No 5.6.1 Supply and installation of motor										
						Item No 5.6.2 Supply and installation of Shoe type Thruster brake										
						Item No 5.6.3 Supply and installation of plummer block										This item was covered in DPR under item No. 1.3 of C/Works HM however a lumpsum cost was sanctioned in the DPR.
						Item No 5.7 Replacement of existing wire rope and supply & installation of the same with new rope as per technical specifications regarding										
						Item No. 5.7.1 Installation of above wire including lubrication of rope drum hoist and attachment of wire										
						Item No 2.6 Design, supply, fabrication, transportation and installation of rubber seals, seal seat and necessary bolts and other hanwre complete as per technical specifications for 1 sets of										
						Item No 2.6.1 Supply of Music note type rubber seal for side and top of gate										
						Item No 2.6.2 Supply of wedge type seal for bottom										

~ 619 ~

P_Maint.During Const_Pg 1 of 8

C123

REVISED COST ESTIMATE OF RECONSTRUCTION, R&M OF KOPILI 200MW

P - Maintenance During Construction

Sl. No.	Description of Items	Unit	Sanctioned Cost			Description of Items	BoQ			As per Revised Estimate at May'24 PL							
			Qty	Rate	Amount (Rs)		Qty	Rate	Amount	Completed work up to May-2024			Committed Liabilities/Balance work			Total	
										Qty	Rate	Amount (Rs.)	Qty	Rate	Amount (Rs.)	Qty	Amount (in Rs.)
						Item No 3.6.3 Fixing of above rubber seal including supply of seal seat, nuts and bolts and all hardware	1.00	330400.00	330400.00	1	330400	330400.00	0	330400	0	1	330400.00
						Item No 3.6 Design, supply, fabrication, transportation and installation of rubber seals, seal seat and necessary bolts and other harware complete as per technical specifications for 1 sets of Intake Bulkhead gate as detailed below:												
						Item No 3.6.1 Double Stem type rubber seal for side and top of gate	12.50	2268.00	28257.20	15.1	2268	34246.80	0	2268	0	15.1	34246.80
						Item No 3.6.2 Wedge type seal for bottom	3.70	2079.00	7692.30	4.5	2079	9355.50	0	2079	0	4.5	9355.50
						Item No 3.6.3 Fixing of above rubber seal including supply of seal seat, nuts and bolts and all hardware	1.00	378000.00	378000.00	1	378000	378000.00	0	378000	0	1	378000.00
						Item No 3.7 Modification of Control Dewa assembly of 45 t capacity rope drum hoist by relocation of two nos. of braking system, replacement of existing worm gear, motor, shaft and plummer blocks complete. The item rating of brake, gear and motor shall match with the existing specifications of item												
1	Maintenance during Construction	LS			34980000.00	Item No 3.7.2 Supply and installation of motor	1.00	100800.00	100800.00	0.9	100800	90720.00	0.1	100800	10080	1	100800.00
						Item No 3.7.3 Supply and installation of E/M and Thruster brake	1.00	44100.00	44100.00	0.9	44100	39690.00	0.1	44100	4410	1	44100.00
						Item No 3.7.4 Supply and installation of plummer blocks	10.00	31500.00	315000.00	9	31500	283500.00	1	31500	31500	10	315000.00
						Item No 3.7.5 Supply of wire rope of dia 32mm, 6x36construction of galvanized for 1set of rope drum hoist	300.00	1134.00	226800.00	270	1134	306180.00	30	1134	34020	300	340200.00
						Item No 3.7.6 Installation of above items including lubrication of rope drum hoist and attachment of wire rope with Gate assembly and complete commissioning.	1.00	324500.00	324500.00	1	324500	324500.00	0	324500	0	1	324500.00
						Item No. 7.5.1 Mulvic noise type rubber seal for side and top of gate	17.40	2268.00	39463.20	15.8	2268	35894.40	0	2268	0	15.8	35894.40

~ 620 ~

C124

REVISED COST ESTIMATE OF RECONSTRUCTION, R&M OF KOPILI 200MW

P - Maintenance During Construction

Sl. No.	Description of items	Unit	Sanctioned Cost			Description of items	Variation (with respect to sanctioned cost)	Variation (with respect to sanctioned cost)		Variation due to						Remarks / Source of supporting
			Qty	Rate	Amount (Rs)		Amt	Positive (+)	Negative (-)	Price fluctuation	Change in Scope/Design	Inadequate Provision/ over provision	Additional requirement / New Item (Addition /Deletion	Other causes (specify)	Statutory Levies	
						Item No 2.6.3 Fixing of above rubber seal including supply of seal seat, nuts and bolts and all hardware										
						Item No 3.6 Design, supply, fabrication, transportation and installation of rubber seals, seal seat and necessary bolts and other harware complete as per technical specifications for 1 sets of Intake Bulkhead gate as detailed below:										
						Item No 3.6.1 Double Stem type rubber seal for side and top of gate										This item was covered in DPR under main No. 2.1 of I Gates however a lumpsum cost was sanctioned in the DPR.
						Item No 3.6.2 Wedge type seal for bottom										
						Item No 3.6.3 Fixing of above rubber seal including supply of seal seat, nuts and bolts and all hardware										
1	Maintenance during Construction	LS			34950000.00	Item No 3.7 Modification of Central Drive assembly of 45 t capacity rope drum hoist by intoculation of two nos. of braking system, replacement of existing worm gear, motor, shaft and plummer blocks complete. The item rating of brake, gear and motor shall match with the existing specifications of item.	-26949343.69		26949343.69			-22499443.81			-4045899.885	
						Item No 3.7.2 Supply and installation of motor										
						Item No 3.7.3. Supply and installation of EM and Thruster brake										
						Item No 3.7.4 Supply and installation of plummer blocks										
						Item No 3.7.5 Supply of wire rope of dia 32mm, 6x36construction of galvanized for 1 set of rope drum hoist										
						Item No 3.7.6 Installation of above items including lubrication of rope drum hoist and attachment of wire rope with Gate assembly and complete commissioning										
						Item No. 7.6.1 Music note type rubber seal for side and top of gate										

C125

REVISED COST ESTIMATE OF RECONSTRUCTION, R&M OF KOPILI 200MW

P - Maintenance During Construction

Sl. No.	Description of Items	Unit	Sanctioned Cost			Description of Items	BoQ			As per Revised Estimate at May'24 PL							
			Qty	Rate	Amount (Rs)		Qty	Rate	Amount	Completed work up to May-2024			Committed Liab/Slow/Balance work			Total	
										Qty	Rate	Amount (Rs.)	Qty	Rate	Amount (Rs.)	Qty	Amount (In Rs.)
						Item No. 7.5.2 wedge type seal for bottom	4.00	2079.00	8316.00	4.0	2079	8963.48	0	2079	0	4.0	8963.48
						Item No. 7.6.3 Fixing of above rubber seal including supply of seal seat, nuts and bolts and all hardware	1.00	252000.00	252000.00	1	252000	252000.00	0	252000	0	1	252000.00
						Item No 7.6 Overhauling and lubrication of mechanical hoist	1.00	177000.00	177000.00	1	177000	177000.00	0	177000	0	1	177000.00
						Item No. 8.5 Design, supply, fabrication, transportation and installation of rubber seals, seal seat and necessary bolts and other hardware complete as per technical specifications for 4 sets of draft tube gate as detailed below												
						Item No. 8.5.1 Double Stem type rubber seal for side and top of gate	10.24	1323.00	13547.52	10.24	1323	13547.52	0	1323	0	10.24	13547.52
						Item No. 8.5.2 wedge type seal for bottom	26.56	1827.00	48255.52	26.56	1827	48255.52	0	1827	0	26.56	48255.52
						Item No. 8.5.3 Fixing of above rubber seal including supply of seal seat, nuts and bolts and all hardware	4.00	354000.00	1416000.00	4	354000	1416000.00	0	354000	0	4	1416000.00
						Item No. 9.5 Design, supply, fabrication, transportation and installation of rubber seals, seal seat and necessary bolts and other hardware complete as per technical specifications for 4 sets of draft tube gate as detailed below												
						Item No. 9.5.1 Double Stem type rubber seal for side and top of gate	20.00	2268.00	45360.00	20	2268	45360.00	0	2268	0	20	45360.00
						Item No. 9.5.2 wedge type seal for bottom	6.00	1827.00	10962.00	6	1827	10962.00	0	1827	0	6	10962.00
						Item No. 9.5.3 Fixing of above rubber seal including supply of seal seat, nuts and bolts and all hardware	1.00	531000.00	531000.00	1	531000	531000.00	0	531000	0	1	531000.00

C126

REVISED COST ESTIMATE OF RECONSTRUCTION, R&M OF KOPILI 200MW

P_Maintenance During Construction

Sl. No.	Description of Items	Unit	Sanctioned Cost			Description of items	Variation (with respect to sanctioned cost)	Variation (with respect to sanctioned cost)		Variation due to						Remarks / Source of Supporting
			Qty	Rate	Amount (Rs)		Amt	Positive (+)	Negative (-)	Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Additional requirement / New item Addition /Deletion	Other causes (specify)	Statutory Levies	
						Item No. 7.5.2 wedge type seal for horizon										
						Item No. 7.5.3 Fixing of above rubber seal including supply of seal seat, nuts and bolts and all hardware										
						Item No 7.6 Overhauling and lubrication of monarail hoist										
						Item No. 8.5 Design, supply, fabrication, transportation and installation of rubber seals, seal seat and necessary bolts and other narware complete as per technical specifications for 4 sets of draft tube gate as detailed below										
						Item No. 8.5.1 Double Stem type rubber seal for side and top of gate										
						Item No. 8.5.2 wedge type seal for bottom										
						Item No. 8.5.3 Fixing of above rubber seal including supply of seal seat, nuts and bolts and all hardware										
						Item No. 9.5 Design, supply, fabrication, transportation and installation of rubber seals, seal seal and necessary bolts and other narware complete as per technical specifications for 4 sets of draft tube gate as detailed below										
						Item No. 9.5.1 Double Stem type rubber seal for side and top of gate										
						Item No. 9.5.2 wedge type seal for bottom										
						Item No. 9.5.3 Fixing of above rubber seal including supply of seal seat, nuts and bolts and all hardware										

~ 623 ~

P_Maint.DuringConst_Pg 6 of 8

C127

REVISED COST ESTIMATE OF RECONSTRUCTION WORK OF HORLI 205MW

P : Maintenance During Construction

Sl. No.	Description of Items	Unit	Sanctioned Cost			Description of Items	BoQ			As per Revised Estimate at May'24 PL							
			Qty	Rate	Amount (Rs)		Qty	Rate	Amount	Completed work up to May-2024			Committed Liabilities/Balance work			Total	
										Qty	Rate	Amount (Rs.)	Qty	Rate	Amount (Rs.)	Qty	Amount (in Rs.)
						Item No. 10.4 Design, supply, fabrication, transportation and installation of rubber seals, seal seat and necessary bolts and other hanware complete as per technical specifications for 4 sets of tail race channel gate as detailed below:												
						Item No. 10.4.1 Mulsi nose type rubber seal for side and top of gate	30.00	2268.00	68040.00	30	2268	68040.00	0	2268	0	30	68040.00
						Item No. 10.4.3 wedge type seal for bottom	7.00	1827.00	12789.00	13.3	1827	24299.10	0	1827	0	13.3	24299.10
						Item No. 10.4.5 Fixing of above rubber seal including supply of seal seat, nuts and bolts and all hardware	1.00	413000.00	413000.00	1	413000	413000.00	0	413000	0	1	413000.00
						Supply water for Rubber Seal for Stop Log Gate of Umrong Water Conductor System,KHEP,NEEPCO Ltd.,Umrangso,Dima Hasao,Assam						111484.00			0		111484.00
						Supply of Bolts & Nuts and Allen CSK bolts nuts for Stop Log Gates of Umrong Intake, KHEP,Umrongso, Dima Hasao,Assam						27565.00			0		27565.00
	Total				3486000.00							8212860.31			191674.00		8404656.31

Note: 1. Item No 2.6, 3.6, 5.2, 5.5, 5.6, 5.7, 7.5.2, 7.5.5, 7.6, 8.5, 9.5 and 10.4 of BoQ have been considered under this head as the nature of works pertains to Maintenance of Gates.

2. The above item no. mentioned in Sl No. 1 are items of BOQ items of C-Works(Item No 5.5 and 5.6)and the remaining items are all Civil Works

~ 634 ~

P_Main\During Const_Pg 7 of 9

C128

REVISED COST ESTIMATE OF RECONSTRUCTION, R&M OF HDPS(200MW

P - Maintenance During Construction

Sl. No.	Description of Items	Unit	Sanctioned Cost			Description of Items	Variation (with respect to sanctioned cost)	Variation (with respect to sanctioned cost)		Variation due to						Remarks / Source of Supporting
			Qty	Rate	Amount (Rs)		Amt	Positive (+)	Negative (-)	Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Additional requirement / New Item /Addition /Deletion	Other causes (specify)	Statutory Levies	
						Item No. 10.4 Design, supply, fabrication, transporation and installation of rubber seals, seal seat and necessary bolts and other harware complete as per technical specifications for 4 sets of tail race channel gate as detailed below:										
						Item No. 10.4.1 Music note type rubber seal for side and top of gate										
						Item No. 10.4.2 wedge type seal for bottom										
						Item No. 10.4.3 Fixing of above rubber seal including supply of seal seat, nuts and bolts and all hardware										
						Supply order for Rubber Seal for Stop Log Gate of Umrong Water Conductor System,KHEP,NEEPCO Ltd, Umrangso,Dima Hasao,Assam										Ref No.142 NEEPCO/KHEP/C&P IDF-07/2019-2020/A288 Date 06.01.2020
						Supply of Bolts & Nuts and Allen CSK bolts nuts for Stop Log Gates of Umrong Intake, KHEP, Umrongso, Dima Hasao,Assam										Ref No.143 NEEPCO/KHEP/C&P IDF-07/2019-2020/H43 Date 13.01.2020
	Total				34961000.00		-26546343.09		26546343.09			-2249443.61			-4849899.865	

Note: 1. Item No 2.6, 3.6, 3.7, 5.5, 5.6, 5.7, 7.1.1, 7.1.2, 7.5.3, 7.6, 8.5, 9.5 and 10.1 of BoQ have been considered under this as pertains to Maintenance of Gates.

2. The above item are mentioned in Sl No. 1 are items of BOQ items of C-Works(Item No.5.5 and 5.6)and the remaining items are of J-Gate Works

~ 515 ~

C129

P-MDC-Annex-A

Sl. No	Ref. No.	Name of Works	W.O.No	Name of Contractor	Completed up to MAY-2024		Balance
					Amount (Rs) Excl. GST	Amount (Rs) Incl. GST (@18%)	
15	142	Supply order for Rubber Seal for Stop Log Gate of Umrong Water Conductor System,KHEP,NEEPCO Ltd.,Umrangso,Dima Hasao,Assam.	NEEPCO/KHEP/C&P ©/F-07/2019-2020/4288 Date 06.01.2020	M/s MRT Sales Corporation	94,478.00	1,11,484.00	
16	143	Supply of Bolts & Nuts and Allen CSK bolts nuts for Stop Log Gates of Umrong Intake, KHEP,Umrongso, Dima Hasao,Assam	NEEPCO/KHEP/C&P ©/F-07/2019-2020/4440 Date 13.01.2020	M/s Bina Industrial Stores	23,359.75	27,565.00	
		Total			1,17,837.75	1,39,049.00	-

C130

REVISED COST ESTIMATE OF RECONSTRUCTION, R&M OF KOPILI 200 MW

Rs in Lakhs

Q - Special Tools and Plants

Sl. No.	Description of Items	Unit	Sanctioned Cost			As per Revised Estimate						Variation (with respect to sanctioned cost)		Variation due to					
			Qty	Rate	Amount (Rs. In Lakhs)	Completed work up to May-2024			Balance wok			Total		Positive (+)	Negative (-)	Price Escalation	Change in Scope/ Design	Inadequate Provision/ over provision	Additional requirement / New Item /Addition	Other causes (specify)	Statutory Levies
						Qty	Rate	Amount (Rs. In Lakhs)	Qty	Rate	Amount (Rs. In Lakhs)	Qty	Amount (Rs. In Lakhs)								
1	Special tools & Plants(Q-Spl T&P-Annex))	LS			100.00			22.61			0.00		22.61	0.00	77.39			-65.58	0.00		-11.80
	Total				100.00			22.61			0.00		22.61	0.00	77.39	0.00	0.00	-65.58	0.00	0.00	-11.80

~ 627 ~

Q-SplTP_Abs_1 of 1

C131

Q-Special Tools & Plants (Annex)

Sl. No	Ref. No.	Name of Works	W.O.No	Name of Contractor	Completed up to MAY-2024		Balance
					Amount (Rs) Excl. GST	Amount (Rs) Incl. GST (@18%)	
28	95	Supply of 1(one) no. BOSCH Make High Pressure Cleaner/Washer Model "GHP 5-65" required for Kopili Power Station at KHEP, NEEPCO Ltd. Umrongso, Dima Hasao, Assam-788931	NEEPCO/KHEP/C&P ©/F-07/2020-2021/4859 Date 01.03.2021	M/S Jainson Industrial House	51,414.00	60,669.00	
52	160	Confirmation order for transportation of JCB 30 Plus Excavator from M/S Oja Automobiles Pvt Ltd Basistha Chariali, Ghy-781029 to KHPS, NEEPCO Ltd,Umrongso	NEEPCO/GHY/COORD/F-29/2019-20/343 Dtd.31.10.2019	M/S logistic Transport of India Pvt. Ltd. GS ROAD, Dispur, Ghy-781005	30,000.00	35,400.00	
54	162	Order for "supply of 01 (One) number of JCB 30 Plus Excavator to KHPS, NEEPCO Ltd,Umrongso	NEEPCO/KHPS/C&P/W-217/2019-20/2757 Dtd.18.10.2019	M/S OJA Automobiles (P) Ltd, OJA COMPLEX, NH37 Basistha Chariali, Ghy-781029	18,24,130.51	21,52,474.00	
55	163	Order for Supply of Crimping Tool required for Utility & Workshop, KHEP, NEEPCO Ltd.	NEEPCO/KHEP/C&P/Utility & Workshop/W-217/2020-21/4613 Dtd.15.02.2021	M/S Animesh Enterprise, PB Road, House No.26, Rehabari, Ghy-781008	10,800.00	12,744.00	
					19,16,344.51	22,61,287.00	-

~ 628 ~

C132

REVISED COST ESTIMATE (260MW Kopili HPS)

R-Commn/ravin

Sl. No.	Description of items	Unit	Sanctioned Cost			As per DOQ			As per Revised Estimate at MAY-2021 PL								Variation (with respect to sanctioned cost)	
			Qty	Rate	Amt	Qty	Rate	Amt (Inclusive of GST)	Completed as on 31st'24			Balance work			Total		Qty	Amt
									Qty	Rate	Amt (Inclusive of GST)	Qty	Rate	Amt (Inclusive of GST)	Qty	Amt		
1	2	3	4	5	6	10	11	12	13	14	15	16	17	18	19	20	21	22
A																		
1	Repair of Kopili PH - 8 kilo Road (Ch: 4.78 km to 7.28 km of Length 2.5KM), KHEP, Umrongsho.	Km			18471257.79			48030607.76			37173411.16			6701781.32		43875192.91		-1,45,02,682.34
2	Repair of Kopili PH - 8 kilo Road (Ch: 7.310 km to 9.830 km of Length 2.52KM), KHEP, Umrongsho.	Km			18621043.85													
3	Repair of Kopili PH - 8 kilo Road (Ch: 9.830 km to 12.015 km of Length 2.185 KM), KHEP, Umrongsho.	Km			16141627.31													
4	Repair of Kopili PH - 8 kilo Road (Ch: 0.00 km to 4.78 km of Length 4.78 KM), KHEP, Umrongsho.	Km			75320868.90													
5	Repairing of damaged road from RCC bridge at Kopili PH Site to Junction point of 29 km (Ch. 0.00m to Ch. 700+0.00m, Length 7.36 km) under KHEP, Umrongsho, Assam																	
	Group-1	Km			7273610.00	1.02		8926700	1.02		8469605.00			0		8469605.00		11,96,082.66
	Group-2	Km			7574630.00	1.02		9050677	1.02		8830936.93			0		8830936.93		14,56,346.93
	Group-3	Km			7406720.00	1.02		9092508	1.02		9183108.27			0		9183108.27		17,74,588.27
	Group-4	Km			7613210.00	1.02		9343934.26	1.02		10243398.03			0		10243398.03		26,99,180.03
	Group-5	Km			7486510.00	1.02		9187930.52	1.02		9024864.71			0		9024864.71		15,37,954.71
	Group-6	Km			7847960.00	1.02		9631575.36	1.02		9621417.65			0		9621417.65		17,73,457.65

~ 629 ~

C133

REVISED COST ESTIMATE (180MW Kopili HPS)

R-Commissioning

Sl. No.	Description of items	Variation due to								Remark
		Positive (+ ve)	Negative (- ve)	Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Additional requirement / New Item /Addition /Deletion	Other causes (specify)	Statutory levies	
1	2	23	24	25	26	27	28	29	30	
A										
1	Repair of Kopili PH - 8 kilo Road (Ch: 4.78 km to 7.28 km of Length 2.5KM), KHEP, Umrongshu.	-	5,65,92,625.34			-4126495			-812698	
2	Repair of Kopili PH - 8 kilo Road (Ch: 7.310 km to 9.830 km of Length 2.520KM), KHEP, Umrongshu.									
3	Repair of Kopili PH - 8 kilo Road (Ch: 9.830 km to 12.015 km of Length 2.185 KM), KHEP, Umrongshu.									
4	Repair of Kopili PH - 8 kilo Road (Ch: 0.00 km to 4.78 km of Length 4.78 KM), KHEP, Umrongshu.									
5	Repairing of damaged road from RCC bridge at Kopili PH Site to Junction point of 29 km (Ch. 0.00m to Ch. 7060.00m, Length 7.06 km) under KHEP, Umrongshu, Assam									
	Group-1	11,96,083.66	-			10,13,630.22			18459	As per Actual Execution at site
	Group-2	14,36,546.93	-			12,34,192.71			222155	The work is as per Actual Execution based on site condition
	Group-3	17,16,388.27	-			15,13,718.97			270669	The work is as per Actual Execution based on site condition
	Group-4	26,10,188.03	-			22,28,972.91			401215	The work is as per Actual Execution based on site condition
	Group-5	13,37,854.71	-			11,63,351.45			234503	The work is as per Actual Execution based on site condition.
	Group-6	17,73,457.65	-			15,02,930.21			270527	The work is as per Actual Execution based on site condition.

C134

REVISED COST ESTIMATE (200MW Kopili HPS)

R-Communication

Sl. No.	Description of items	Unit	Sanctioned Cost			As per BOQ			As per Revised Estimate at MAY-2024 PL								Variation (w/r/t respect to sanctioned cost)	
			Qty	Rate	Amt	Qty	Rate	Amt (Inclusive of GST)	Completed as on May'24			Balance wok			Total		Qty	Amt
									Qty	Rate	Amt (Inclusive of GST)	Qty	Rate	Amt (Inclusive of GST)	Qty	Amt		
1	2	3	4	5	6	10	11	12	13	14	15	16	17	18	19	20	21	22
	Group7	Km			7163840.00	0.94		8781084.12	0.94		8267717.79			0		8267717.79		11,83,877.79
6	Repair of Valve House Road 1.2 Km	Km	1.2		8867163.74			4796768.44	1.2		4513091.00			263677		4796768.00		-40,70,395.74
7	Repair of Adit III Road 1.3 Km	Km	1.3		9686694.05			5724810.18	1.3		5674959.84			0		5674959.84		-89,31,131.21
8	Repair of Adit II Road 2.6 Km	Km	2.6		19212388.10			10232792.33	2.6		9618451.00			0		9528451.00		-96,83,731.10
9	Repair of Surge Shaft Road 1.2 Km	Km			8867163.74			0.00			0.00			0.00		0.00		-88,67,163.74
10	Construction of Bridge (3 Nos.)				46224677.29			0.00			0.00			0.00		0.00		-4,62,24,677.29
11	Construction of Protection Works Along Powerhouse Approach Road (32 Nos protection wall)				34859793.00			52934369.00			52934369.00			0.00		52934369.00		-18,25,424.00
	Total including GST				283366357.77			177753246.89			163482061.07			7860440.32		171342501.39		-11,78,22,856.38
	Sub Total excluding GST				244378269.29			150638544.75			138544967.01			6834260.00		145379227.01		-9,98,49,878.29
	GST @ 18 %				43988088.47			27114902.05			24938094.06			1977816.32		26915118.38		-1,79,72,978.09
	Total:- (A)				283366357.77			177753246.89			163482061.07			7860440.32		170342501.39		-11,78,22,856.38
B	Other Works of R-communication																	
1	Jungle Clearance at Umrong Dam Approach Road to Dam Gallery at KHPS, Umrongso				0.00						88,488.20			0.00		88,488.20		88,488.20
2	Jungle Cutting from Chainage 3.300 km to 4.950 km along Kopli Surge Shaft Road (Group C)				0.00						51,089.00			0.00		51,089.00		51,089.00
3	Jungle Cutting at Kopli Power House Colony (from junction point of Kopli old IB to Officers colony including barrack area) at KHEP, Umrongso				0.00						59,887.00			0.00		59,887.00		59,887.00
4	Jungle Cutting from Chainage 1.650 km to 3.300km along Kopli Surge Shaft Road (Group B)				0.00						51,089.00			0.00		51,089.00		51,089.00
5	Jungle Cutting from Chainage 0.00 km to 1.700 km from Trijunction Point to Kopli Valve House along Kopli Valve House Road (Group D)				0.00						52,018.00			0.00		52,018.00		52,018.00
6	Jungle Cutting from Chainage 0.00 km to 1.650km along Kopli Surge Shaft Road (Group A)				0.00						51,089.00			0.00		51,089.00		51,089.00

C135

REVISED COST ESTIMATE (350MW Kopili HPS)

R-Communication

Sl. No.	Description of items			Variation due to						Remark
		Positive (+ ve)	Negative (- ve)	Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Additional requirement / New item /Addition /Deletion	Other causes (specify)	Statutory levies	
1	2	23	24	25	26	27	28	29	30	
	Group-7	11,80,877.76	-			9,15,489.65			168388	The work is as per Actual Execution based on site condition
6	Repair of Valve House Road 1.2 Km	-	46,70,295.74			-34,49,487.91			-620908	The work is as per Actual Execution based on site condition
7	Repair of Adit III Road 1.3 Km	-	30,31,134.21			-33,31,469.67			-599663	The work is as per Actual Execution based on site condition
8	Repair of Adit II Road 2.6 Km	-	96,83,715.10			-82,06,555.17			-1477180	The work is as per Actual Execution based on site condition
9	Repair of Surge Shaft Road 1.2 Km	-	88,67,163.74				-7514546		-1352618	The work may be proposed to be executed
10	Construction of Bridge (3 Nos.)	-	4,61,24,677.25				-39173455		-7051222	The work may be proposed to be executed
11	Construction of Protection Works Along Powerhouse Approach Road (32 Nos protection wall).	-	19,25,424.00			-1631715			-291506	Remaining amount left to placed under the liability. So that variation is Rs 0.00
	Total including GST	1,14,72,297.04	12,92,95,153.42	-	-	-5,31,61,877.41	-4,64,88,900.87	-	-1,79,72,976.89	
	Sub Total excluding GST	97,22,285.63	10,95,72,163.91							
	GST @ 18 %	17,50,011.41	1,97,22,989.50							
	Total -(A)	1,14,72,297.04	12,92,95,153.42							
B	Other Works of R-communication									
1	Jungle Clearance at Umrong Dam Approach Road to Dam Gallery at KHPS, Umrongso	58,498.20	-				74,990.00		13,498.20	
2	Jungle Cutting from Chainage 3.300 km to 4.950 km along Kopili Surge Shaft Road (Group C)	11,089.00	-				43,295.76		7,793.24	
3	Jungle Cutting at Kopili Power House Colony (from junction point of Kopili old @ to Officers colony including barrack area) at KHEP, Umrongso	59,887.00	-				90,751.69		9,125.31	
4	Jungle Cutting from Chainage 1.650 km to 3.300km along Kopili Surge Shaft Road (Group B)	51,089.00	-				43,295.76		7,793.24	
5	Jungle Cutting from Chainage 0.00 km to 1.700 km from Trijunction Point to Kopili Valve House along Kopili Valve House Road (Group D)	72,048.00	-				44,083.09		7,934.95	
6	Jungle Cutting from Chainage 0.00 km to 1.650km along Kopili Surge Shaft Road (Group A)	51,089.00	-				43,295.76		7,793.24	

~ 632 ~

C136

...SVBKR-COST ESTIMATE (260MW Kopili HPS)

R-Communication

Sl. No.	Description of items	Unit	Sanctioned Cost			As per BOQ			As per Revised Estimate at MAY-2024 PL								Variation (with respect to sanctioned cost)	
			Qty	Rate	Amt	Qty	Rate	Amt (Inclusive of GST)	Completed as on May'24			Balance work			Total		Qty	Amt
									Qty	Rate	Amt (Inclusive of GST)	Qty	Rate	Amt (Inclusive of GST)	Qty	Amt		
1	2	3	4	5	6	10	11	12	13	14	15	16	17	18	19	20	21	22
7	Cleaning of Steel pipe Culvert near Kopili Power Station, KHPS,Umrongso				0.00						1,52,002.00			0.00		1,52,002.00		1,52,002.00
8	Jungle Cutting of S.S Road from Ch. 4.36 KM to 6.21 KM , KHEP, Umrongso, Dima Hasao, Assam				0.00						44,485.00			0.00		44,485.00		44,485.00
9	Supply of 1 (one) no Excavator cum Loader (JCB) on monthly hire rent basis for repair of approach road to Audit-III of Umrong WCS, maintenance of approach road from 29 KM and clearing/leveling of Surge shaft road of Kopili Power Plant, KHEP Umrongso, Dima Hasao , Assam (from 19.10.2020 to 23.11.2020)				0.00						2,94,443.00			0.00		2,94,443.00		2,94,443.00
10	Supply of 1 (one) no. Excavator cum Loader (JCB) on monthly hire rent basis for repair and filling pot holes of road of Kopili Power Plant,KHEP, Umrongso,Dima Hasao, Assam (from 29.06.2020 to 12.08.2020)				0.00						3,23,379.00			0.00		3,23,379.00		3,23,379.00
11	Supply for labour for cleaning of GT yard,drains etc. for restoration of Kopili Power Plant Umrongso (from 20.01.2020 to 27.02.2020)				0.00						2,67,491.00			0.00		2,67,491.00		2,67,491.00
12	Supply of labour for cleaning of GT yard, drains etc. for restoration of Kopili Power Plant Umrongso (w.e.f 28.02.2020)				0.00						3,98,250.00			0.00		3,98,250.00		3,98,250.00
13	Supply of labour for cleaning of GT yard , drains etc. for restoration of Kopili Power Plant Umrongso (w.e.f from 24.03.2020)				0.00						4,43,137.00			0.00		4,43,137.00		4,43,137.00
	Total- B				0.00						22,76,847.20			0.00		22,76,847.20		22,76,847.20
	Sub Total				0.00						1929531.53			0.00		1929531.53		19,29,531.53
	GST @ 18 %				0.00						347315.67			0.00		347315.67		3,47,315.67
	Total - (B)				0.00			0.00			2276847.20			0.00		2276847.20		22,76,847.20
	Grand Total of R- Communication (A + B)				28,83,46,397.77			17,77,43,246.80			165759908.27			7060448.32		17,28,20,348.59		-11,55,46,049.18

Total of R-Communication (Exclusive of GST)	24,43,78,209.29		140474698.53	5983424.00	146457922.53	-1,70,25,842.42
Total GST Component @ 18%	4,39,80,088.47		25285609.74	1077016.32	26362426.06	
Grand Total of R- Communication	28,83,46,397.77		165759908.27	7060440.32	172820348.59	-11,55,46,049.18

R-Comm_Pg 5 of 6

C137

REVISED COST ESTIMATE (20MW Kopili HPS)

R-Communication

Sl. No.	Description of Item			Variation due to						Remark
		Positive (+ve)	Negative (-ve)	Price Escalation	Change in Scope/Design	Inadequate Provision over provision	Additional requirement / New Item /Addition /Deletion	Other causes (specify)	Statutory levies	
1	2	23	24	25	26	27	28	29	30	
7	Cleaning of Steel pipe Culvert near Kopili Power Station, KHPS Umrongso.	1,52,802.00	-				1,28,815.28		23,186.72	
8	Jungle Cutting of S.S Road from Ch. 4.38 KM to 8.21 KM , KHEP, Umrongso, Dima Hasao, Assam	31,005.00	-				26,609.15		4,395.85	
9	Supply of 1 (one) no Excavator cum Loader (JCB) on monthly hire rent basis for repair of approach road to Audi-III of Umrong WCS, maintenance of approach road from 29 KM and cleaning/leveling of Bunga shah road of Kopili Power Plant, KHEP Umrongso, Dima Hasao , Assam (from 19.10.2020 to 23.11.2020)	2,94,443.00	-				2,49,527.07		44,915.93	
10	Supply of 1 (one) no. Excavator cum Loader (JCB) on monthly hire rent basis for repair and filling pot holes of road of Kopili Power Plant,KHEP, Umrongso,Dima Hasao, Assam (from 29.06.2020 to 12.08.2020)	1,23,179.00	-				2,70,050.00		49,129.00	
11	Supply for labour for cleaning of GT yard,drains etc. for restoration of Kopili Power Plant Umrangso)from 20.01.2020 to 27.02.2020)	2,67,491.00	-				2,26,687.29		40,803.71	
12	Supply of labour for cleaning of GT yard, drains etc. for restoration of Kopili Power Plant Umrongso (w.e.f 28.02.2020)	1,01,250.00	-				1,37,500.00		60,750.00	
13	Supply of labour for cleaning of GT yard ,drains etc. for restoration of Kopili Power Plant Umrongso)w.e.f. from 24.09.2020)	4,43,137.00	-				3,75,529.83		67,607.17	
	Total- B	22,79,847.20	-	-	-	-			3,47,315.67	
	Sub Total	19,29,531.53	-				19,29,531.53		-	
	GST @ 18 %	3,47,315.67	-							
	Total - (B)	22,76,847.20	0.00							
	Grand Total of R- Communication= (A + B)	1,37,49,144.24	12,52,95,153.42	-	-	-5,31,61,877.41	-4,67,58,469.35	-	-1,76,25,661.42	

Total of R-Communication (Exclusive of GST)

Total GST Component @ 18%

Grand Total of R- Communication

~ 634 ~

C138

R-Comm-Breakup-S1

Sl. No. as per CEA	Description of Items	Unit	Sanctioned Cost			As per BOQ			As per Revised Estimate								Variation w.r.t. sanctioned cost			
									Completed work up to MAY'24 Pt.			Balance work			Total					
			Qty	Rate	Amt	Qty	Rate	Amt (Inclusive of GST)	Qty	Rate	Amt (Inclusive of GST)	Qty	Rate	Amt (Inclusive of GST)	Qty	Amt	Qty	Amt	Positive (+ ve)	Negative (- ve)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
1	Repair of Kopili PH - 8 kilo Road (Ch: 4.78 km to 7.28 km of Length: 2.5KM), KHEP, Umrongshu	Km			1847057.71			0.00			0.00			0.00		0.00		-1847257.71	0.00	1847257.71
2	Repair of Kopili PH - 8 kilo Road (Ch: 7.310 km to 8.830 km. of Length: 2.52KM), KHEP, Umrongshu	Km			1862308.36			0.00			0.00			0.00		0.00		-1862308.4	0.00	1862308.36
3	Repair of Kopili PH - 8 kilo Road (Ch: 9.610 km to 12.095 km of Length: 2.185 KM), KHEP, Umrongshu.	Km			1814507.31			0.00			0.00			0.00		0.00		-1814507.31	0.00	1814507.31
4	Repair of Kopili PH - 8 kilo Road (Ch: 0.00 km to 4.78 km of Length: 4.78 KM), KHEP, Umrongshu.	Km			1532098.99			0.00			0.00			0.00		0.00		-1532098.99	0.00	1532098.99
A	Total of Sl No. 1-4 As per of Sl no. 1-4 of CEA (w.R-Comm, Short work breakup				8056972.85															
1	Reconstruction of damaged Kopili Power Station Road from 4th Km junction point Shillong-Lanka Road) to Kopili Power House Saramu Gate (Chainage 0.00 M to Ch 2000.00 M, Length= 2.00 KM) Group-I	Km			0.00			5946054.22			5461274.68			3482779.54		8944054.22				
2	Reconstruction of damaged Kopili Power Station Road from 4th Km junction point (Shillong-Lanka Road) to Kopili Power House Saramu Gate (Chainage 2000.00 M to Ch 4000.00 M, Length= 2.00 KM) Group-I	Km			0.00			11035806.16			11035432.64			0.00		11035432.64				
3	Reconstruction of damaged Kopili Power Station Road from 4th Km junction point (Shillong-Lanka Road) to Kopili Power House Saramu Gate (Chainage 4000.00 M to Ch 6000.00 M, Length= 2.00 KM) Group-I	Km			0.00			11277513.91			11466167.28			0.00		11466167.28				
4	Reconstruction of damaged Kopili Power Station Road from 4th Km junction point (Shillong-Lanka Road) to Kopili Power House Saramu Gate (Chainage 6000.00 M to Ch 8000.00 M, Length= 2.00 KM) Group-I	Km			0.00			7346079.86			7654772.69			0.00		7654772.69				
5	Reconstruction of damaged Kopili Power Station Road from 4th Km junction point (Shillong-Lanka Road) to Kopili Power House Saramu Gate (Chainage 8000.00 M to Ch 12000.00 M, Length= 2.00 KM) Group-I	Km			0.00			9516274.58			9867523.06			6754765.32		9516274.38				
								40859807.78			27173411.19			6754765.32		33928174.51				

Note: As per CEA Sl no 1-4 of CEA R-Comm the breakup of work is given in Sl no 1-4 of A as mentioned above
Work is similar just divided in 5 grp rather than 4 as mentioned in CEA Sl no 1-4

R-Breakup-S1-S4_Pg 1 of 1

C139

R-Comm-Annex-I

Sl.No.	Description of Work	Name of Contractor	Work Order No.	W.O. Amount (Without GST)	W.O. Amount (Inclusive of GST)
1	Repairing of damaged road from RCC bridge at Kopili P.H.site to junction point of 29 KM(Chainage 00.00 M to Ch.1030.00 M, Length= 1.02 KM) under KHEP, NEEPCO Ltd., Umrangso, Dist.-Dima Hasao,Assam-Group No Nine)	Shri V.S Mongo Changsan	NEEPCO/KHEP/C&P(C)/F-05/2020-21/5102, Dt 11-03-2021	7365000.00	8926700.00
2	Repairing of damaged road from RCC bridge at Kopili P.H.site to junction point of 29 KM(Chainage 1030.00 M to Ch.2040.00 M, Length= 1.02 KM) under KHEP, NEEPCO Ltd., Umrangso, Dist.-Dima Hasao,Assam-Group No 2(Two)	Shri V.S Mongo Changsan	NEEPCO/KHEP/C&P(C)/F-05/2020-21/5113, Dt 11-03-2021	7670065.00	9050676.70
3	Repairing of damaged road from RCC bridge at Kopili P.H.site to junction point of 29 KM(Chainage 2040.00 M to Ch.3060.00 M, Length= 1.02 KM) under KHEP, NEEPCO Ltd., Umrangso, Dist.-Dima Hasao,Assam-Group No 3(Three)	Shri Ramsing Rongbi	NEEPCO/KHEP/C&P(C)/F-05/2020-21/5122, Dt 11-03-2021	7705524.00	9092518.80
4	Repairing of damaged road from RCC bridge at Kopili P.H.site to junction point of 29 KM(Chainage 3060.00 M to Ch.4080.00 M, Length= 1.02 KM) under KHEP, NEEPCO Ltd., Umrangso, Dist.-Dima Hasao,Assam-Group No 4(Four).	Shri Ramsing Rongbi	NEEPCO/KHEP/C&P(C)/F-05/2020-21/5132, Dt 11-03-2021	7918207.00	9343485.00
5	Repairing of damaged road from RCC bridge at Kopili P.H.site to junction point of 29 KM(Chainage 4080.00 M to Ch.5100.00 M, Length= 1.02 KM) under KHEP, NEEPCO Ltd., Umrangso, Dist.-Dima Hasao,Assam-Group No 5(Five)	Shri Mukul Johri	NEEPCO/KHEP/C&P(C)/F-05/2020-21/5142, Dt 11-03-2021	7786424.00	9187980.00
6	Repairing of damaged road from RCC bridge at Kopili P.H.site to junction point of 29 KM(Chainage 5100.00 M to Ch.6120.00 M, Length= 1.02 KM) under KHEP, NEEPCO Ltd., Umrangso, Dist.-Dima Hasao,Assam-Group No 6(Six)	Shri Gopen Rathor	NEEPCO/KHEP/C&P(C)/F-05/2020-21/5152, Dt 11-03-2021	8162352.00	9631536.00
7	Repairing of damaged road from RCC bridge at Kopili P.H.site to junction point of 29 KM(Chainage 6120.00 M to Ch.7060.00 M, Length= 0.94 KM) under KHEP, NEEPCO Ltd., Umrangso, Dist.-Dima Hasao,Assam-Group No 7(Seven)	Shri Sailen Joshi	NEEPCO/KHEP/C&P(C)/F-05/2020-21/5188, Dt 12-03-2021	7498831.00	8848984.00
8	Repairing of damaged Approach Road to Adit-II of Umrong WCS under KHPS, NEEPCO Ltd. Umrangso, Dima Hasao, Assam.	Shri Ramsing Rongbi	NEEPCO/KHEP/C&P(C)/F-05/2021-22/ 4256, Dt 04-01-2022	8671824.00	10232752.32
9	Repairing of damaged Approach Road to Adit-III of Umrong WCS under KHPS, NEEPCO Ltd Umrangso, Dima Hasao, Assam	Shri Ramsing Rongbi	NEEPCO/KHEP/C&P(C)/F-05/2021-22/ 4817, Dt 15-12-2021	4851551.00	5724830.18
10	Reconstruction of damaged Road from Junction Point of the road from 8th Km to Kopili Power Station to Kopili Valve House Security Gate (Chainage 0.00 M to Ch.1133.00 M) KHPS, NEEPCO Ltd. Umrangso(Valve House Link Road)	M/S. Lokenath & Co	NEEPCO/KHPS/C&P(C)/F-05/2022-23/ 3090, Dt 19-10-2022	4065068.00	4796380.44
11	Reconstruction of damaged Kopili Power Station Road from 8th Km junction point Shillong-Lumku Road) to Kopili Power House Security Gate (Chainage 0.00 M to Ch.1000.00 M, Length= 1.00 KM) Group-I.	M/S. Lokenath & Co	NEEPCO/KHEP/C&P(C)/F-05/2022-23/ 4213, Dt 03-11-2022	4369029.00	5156014.22

C140

R-Comm-Annex-I

Sl.No	Description of Work	Name of Contractor	Work Order No.	W.O. Amount (Without GST)	W.O. Amount (Inclusive of GST)
12	Reconstruction of damaged Kopili Power Station Road from 8th Km junction point (Shillong-Lanka Road) to Kopili Power House Security Gate (Chainage 5000.00 M to Ch.6000.00 M, Length= 1.00 KM) Group-2	Shri Bing Hugo	NEEPCO/KHPS/C&P(C)/F-05/2022-23/ 6053, Dt.10-03-2023	936412.00	1010906.16
13	Reconstruction of damaged Kopili Power Station Road from 8th Km junction point (Shillong-Lanka Road) to Kopili Power House Security Gate (Chainage 6000.00 M to Ch.8000.00 M, Length= 2.00 KM) Group-3	Shri Mukul Adhi	NEEPCO/KHPS/C&P(C)/F-05/2022-23/ 6061, Dt.10-03-2023	5804832.00	6377512.96
14	Reconstruction of damaged Kopili Power Station Road from 8th Km junction point (Shillong-Lanka Road) to Kopili Power House Security Gate (Chainage 8000.00 M to Ch.10000.00 M, Length= 2.00 KM) Group-4	Shri Sudan Joshi	NEEPCO/KHPS/C&P(C)/F-05/2022-23/ 6087, Dt.16-03-2023	6228637.00	7349779.86
15	Reconstruction of damaged Kopili Power Station Road from 8th Km junction point (Shillong-Lanka Road) to Kopili Power House Security Gate (Chainage 10000.00 M to Ch.12000.00 M, Length= 2.00 KM) Group-5	Shri Ramang Rongfe	NEEPCO/KHPS/C&P(C)/F-05/2022-23/ 6043, Dt.10-03-2023	8234131.00	9716274.58
	Total			105778710.00	124813878.42

GST Component @ 18% 19040167.80

Total Amount = ₹ 12,48,18,877.80

R-Comm-Annex-I_Pg 2 of 2

(C141)

R-Communication-Annex-II

Completed up to MAY 2021

Sl. No.	Ref No	Name of Works	W.O No	Name of Contractor	Amount (Rs) Excl. GST	Amount (Rs) Incl. GST (@18%)
A		Protection/Retaining Wall Construction Works				
1	35	Construction of retaining wall at upstream corner of GT yard AND LEFT SIDE OF APPROACH ROAD TO BACK SIDE OF Kopili P.S. KHEP Umrongso	NEEPCO/KHPS/C&P (C) /F-85/2021-22/1543 Date 08.07.2021	Sri Watson Mihiri	7,28,305.00	8,57,144.00
2	36	Construction of retaining wall in between Anchor Block 2&3 on the left side of penstock No. 2 at Kopili valve House , KHEP Umrongso	NEEPCO/KHPS/C&P (C) /F-05/2020-21/0508 Date 25.03.2021	Sri Khagendra Hojai	9,94,529.00	11,73,544.00
3	37	Construction of Stone masonary abutment wall (s/s) of the existing retaining wall near AB-6, KHEP, Umrongso Dima Hasao, Assam	NEEPCO/KHPS/C&P (C) /F-05/2020-21/0518 Date 25.03.2021	Sri Barsaing Engti	19,38,891.00	22,88,531.00
4	38	Construction of Stone masonary abutment wall (d/s) of the existing retaining wall near AB-6, KHEP, Umrongso Dima Hasao, Assam	NEEPCO/KHPS/C&P (C) /F-05/2020-21/0526 Date 25.03.2021	Sri Watson Mihok	16,84,353.00	19,87,419.00
5	39	Construction of Wing wall to protect left side embankment and pier of the RCC bridge at Umrong Nallah of 29th km road to kopili power station, KHEP	NEEPCO/KHPS/C&P (C) /F-05/2020-21/N113 Date 06.01.2021	Sr Kumar Surtel	12,71,676.69	15,00,578.00
6	44	Revised work order for Construction of retaining wall at right side of rupture point of Penstock-I near Anchor block-4 for restoration of approach road to Anchor Block-4 umrong Penstock, KHEP Umrongso	NEEPCO/KHEP/C&P (C) /F-05/2020-21/0502-86 Date 17.12.2020	Sri V S Manga Changsan	16,34,705.08	19,28,952.00
7	45	Construction of stone masonry retaining wall at right side of Anchor Block-3 for restoration of approach road to Anchor Block-4 of umrong Penstock, KHEP, Umrongso	NEEPCO/KHEP/C&P (C) /F-05/2019-20/2004870 Date 28.02.2020	Sr V S Manga Changsan	18,45,503.39	21,77,694.00
8	46	Construction of retaining wall (second part) in between anchor belt 6&7 on right side of 6th km Kopili PS Road, KHEP, umrongso, Dima Hasao, Assam	NEEPCO/KHEP/C&P (C) /F-05/2020-2021/0154 Date 07.11.2020	Sri Sudam Joshi	17,60,895.33	20,77,544.00
9	47	Construction of Stone Masonry wall to protect the hill side slope of existing approach road to AB-6 of Kopili Power Station	NEEPCO/KHEP/C&P (C) /F-05/2020-2021/2324 Date 26.08.2020	Sri Markosa Teron	8,50,430.54	10,03,508.00
10	48	Deviation Order for the work " Construction of 16.00 m long (Group-A) stone Masonry wall on the right side of Kopili Power House road from 6th km of Umrongso-Shillong road at KHEP, Umrongso, Dima Hasao, Assam.	NEEPCO/KHEP/C&P (C) /F-05/2020-2021/2289 Date 23.09.2020	Sri Wilson Mihok	23,93,394.07	28,24,205.00
11	49	Deviation work order for the work " Construction of Stone Masonry wall near nallah on the right side of approach road to Kopili Power Station in between Anchor Block 7&8 at KHEP, Umrongso"	NEEPCO/KHEP/C&P (C) /F-05/2020-2021/2007-11 Date 26.08.2020	Sri Govind Prasad Regmi	11,41,077.12	13,46,471.00
12	50	Deviation Order for the work " Construction of 16.00 m long (Group-B) stone Masonry wall on the right side of Kopili Power House road from 6th km of Umrongso-Shillong road at KHEP, Umrongso, Dima Hasao, Assam.	NEEPCO/KHEP/C&P (C) /F-05/2020-2021/2289 Date 23.09.2020	Sri Kumar Surtel	29,00,111.66	34,22,132.00
13	53	Deviation Work Order for the work" Construction of retaining wall in between Anchor Block 6 & 7 on the right side of Kopili Power Station road from 6th km of Umrongso-Shillong road at KHEP, Umrongso	NEEPCO/KHEP/C&P (C) /F-05/2020-2021/2005-09 Date 26.08.2020	Sri Desho Daulagupu	10,71,699.83	12,64,889.00
14	54	Deviation Work Order for the work" Construction of stone masonry retaining wall at the left side of approach road to Anchor Block 6 of Umrong Penstock side of Kopili Power Station at KHEP, Umrongso (Length 25.00m) (Group GT"	NEEPCO/KHEP/C&P (C) /F-05/2020-2021/2013-17 Date 26.08.2020	Smt. Rini Hagjer	18,28,473.73	21,57,599.00
15	55	Deviation work order for the work " Construction of retaining wall for approach road to downstream of Anchor Block-6 of Kopili Power Station at KHEP, Umrongso".	NEEPCO/KHEP/C&P (C) /F-05/2020-2021/2037-41 Date 26.08.2020	Sri Barsaing Engti	12,67,401.63	14,95,541.00
16	56	Deviation Work Order for the work" Construction of retaining wall at left side of approach road to Anchor Block-6 of Umrong Penstock of Kopili Power Station at KHEP, Umrongso	NEEPCO/KHEP/C&P (C) /F-05/2020-2021/2016-23 Date 26.08.2020	Sri Desho Daulagupu	32,26,113.56	38,35,634.00
17	57	Deviation Work Order for the work" Construction of retaining wall at left side of approach road to Anchor Block-6 of Umrong Penstock of Kopili Power Station at KHEP, Umrongso	NEEPCO/KHEP/C&P (C) /F-05/2020-2021/2031-35 Date 26.08.2020	Sri Mukul Jathori	16,03,070.34	18,88,083.00

C142

R-Communication-Annex-II

Completed upto MAY 2024

Sl. No.	Ref No	Name of Works	W.O.No	Name of Contractor	Amount (Rs) Excl GST	Amount (Rs) Incl GST (@18%)
18	59	Deviation Work Order for the work" Construction of stone masonary retaining wall at right side of Anchor Block-3 for restoration of approach road to Anchor Block-4 of Umrong Penstock at KHEP Umrongso"	NEEPCO/KHEP/C&P (C) /F-05/2020-21/1720-33 Date 10.08.2020	Sri V S Mangs Changsan	20,50,176.27	24,20,208.00
19	58	Deviation Work Order for the work" Construction of stone masonary retaining wall at left side of approach road to Anchor Block-6 of Umrong Penstock of Kopili Power Station at KHEP, Umrongso, (Group-A)"	NEEPCO/KHEP/C&P (C) /F-05/2020-21/1717-21 Date 10.08.2020	Sri Sudan Joshi	16,57,176.27	19,55,468.00
20	60	Deviation Work Order for the work" Construction of approach road to Canteen, retaining wall at backside of Kopili Power Station at KHEP, Umrongso."	NEEPCO/KHEP/C&P (C) /F-05/2020-21/1720-27 Date 10.08.2020	Sri Sudan Joshi	26,45,668.14	31,23,092.00
21	61	Deviation Work Order for the work " Construction of stone masonary retaining wall to support the backfill of the approach road to Anchor Block-7 of Kopili Power Station at KHEP Umrongso, Dima Hasao , Assam"	NEEPCO/KHEP/C&P (C) /F-05/2019-2019/1408-12 Date 17/07/2020	Sri V S Mangs Changsan	7,93,222.88	9,36,003.00
22	62	Construction of Gabion Structure at embankment of left side pier of Umrong Nallah bigde for restoration of road communication to the Kopili Power Station from 29 Km approach Road, KHEP, Umrongso, Dima Hasao, Assam	NEEPCO/KHEP/C&P (C) /F-05/2020-21/1502-06 Date 20.07.2020	Sri Kumar Sonar	10,82,979.00	12,77,915.00
23	64	"Construction of retaining wall at right side of rupture point of Penstock-I near Anchor Block-4 for restoration of approach Road to Anchor Block-4 of Umrong Penstock, KHEP, Umrongso"	NEEPCO/KHEP/C&P (C) /F-05/2020-21/232-36 Date 18.06.2020	Sri VS Mangs Changsan	21,74,666.66	25,66,006.00
24	66	Construction of Protection work for a Transmission Tower near Anchor Block-8 at Uphill side of Kopili Power House, KHEP, Umrongso	NEEPCO/KHEP/C&P (C) /F-05/2019-2020/5542-45 Date 13.04.2020	Sri Kumar Sonar	5,42,403.02	6,40,035.00
25	70	Repairing of Pier and Construction of Protection work at the abutment of Steel bridge located at Kopili Power House Road from 69 KM of Umrongso-Shillong Road at KHEP, Umrongso, Assam	NEEPCO/KHEP/C&P (C) /F-05/2019-20/4424 Date 09.01.2020	Sri VS Mangs Changsan	16,63,334.69	19,62,735.00
27	74	Construction of flood protection wall at the left abutment, down stream of Power House , KHEP.....	NEEPCO/KHPS/C&P (C) /F-05/2021-22/3634 Date 12.11.2021	M/s Ashirvad Associates	27,13,140.00	32,01,505.00
28	27	Revised Work Order for Construction of RCC retaining Wall at the toe side of d/s slope of Anchor Block-8 at KHEP, Umrongso	NEEPCO/KHPS/C&P (C) /F-05/2020-21/5204 Date 12.02.2021	M/s Ashirvad Associates	22,85,407.00	26,96,780.00
29	51	Deviation order for the work Providing PCC as protection layer to the Stone masonry pattern at downstream of Tail pool wall of Kopili Power Station at KHEP, Umrongso, Dima Hasao, Assam"	NEEPCO/KHEP/C&P (C) /F-05/2020-2021/2295 Date 23.09.2020	Sri Pranab Kr. Dilinga	5,02,539.83	5,93,469.00
				Total	4,48,59,634.12	5,29,34,369.00
B		Other Works R-Communication				
1	5	Jungle Clearance at Umrong Dam Approach Road to Dam Gallery at KHPS, Umrongso	NEEPCO/KHPS/C&P (C) /F-05/2022-23/5011 Date 14.12.2022	Smti. Bijona Bodo	74,960.00	88,488.20
2	7	Jungle Cutting from Chainage 3.300 km to 4.950 km along Kopili Surge Shaft Road (Group C)	NEEPCO/KHPS/C&P (C) /F-05/2022-23/4410 Date 01.02.2021	Smt. Mamata Nending	43,296.00	51,089.00
3	39	Jungle Cutting at Kopili Power House Colony (from junction point of Kopili old B to Officers colony including barrack area) at KHEP, Umrongso	NEEPCO/KHPS/C&P (C) /F-05/2020-21/5013 Date 09.03.2021	Smt. Bijona Bodo	50,751.52	59,887.00
4	41	Jungle Cutting from Chainage 1.650 km to 3.300km along Kopili Surge Shaft Road (Group B)	NEEPCO/KHPS/C&P (C) /F-05/2020-21/4400 Date 01.02.2021	Mesosim Ronghangpi	43,296.00	51,089.00
5	42	Jungle Cutting from Chainage 0.00 km to 1.700 km from Trijunction Point to Kopili Valve House along Kopili Valve House Road (Group D)	NEEPCO/KHPS/C&P (C) /F-05/2020-21/4429 Date 01.02.2021	Smt. Asila Bodo	44,083.00	52,018.00
6	43	Jungle Cutting from Chainage 0.00 km to 1.650km along Kopili Surge Shaft Road (Group A)	NEEPCO/KHPS/C&P (C) /F-05/2020-21/4398 Date 01.02.2021	Smt. Menna Englpi	43,296.00	51,089.00
7	65	Cleaning of Steel pipe Culvert near Kopili Power Station, KHPS,Umrongso	NEEPCO/KHEP/C&P (C) /F-05/2019-2020/5080 Date 03.03.2020	Sri Shanaan Kumar Shah	1,28,815.16	1,52,002.00
8	67	Jungle Cutting of S.S Road from Ch. 4.38 KM to 8.21 KM., KHEP, Umrongso, Dima Hasao, Assam	NEEPCO/KHEP/C&P (C) /F-05/2019-2020/3951 Date 19.12.2019	Smti. Menna Englpi	37,699.00	44,485.00
9	10	Supply of 1 (one) no Excavator cum Loader (JCB) on monthly hire rent basis for repair of approach road to Audit-III at Umrong WCS, maintenance of approach road from 29 KM and cleaning/leveling of Surge shaft road at Kopili Power Plant, KHEP Umrongso, Dima Hasao , Assam (from 19.10.2020 to 23.11.2020)	NEEPCO/KHEP/C&P /DF-07/2020-2021/4357 Date 30.01.2021	Sri Ramsing Ronghi	2,49,928.00	2,94,443.00
10	100	Supply of 1 (one) no. Excavator cum Loader (JCB) on monthly hire rent basis for repair and filling pot holes of road of Kopili Power Plant,KHEP, Umrongso,Dima Hasao, Assam (from 29.06.2020 to 12.08.2020)	NEEPCO/KHEP/C&P /DF-07/2020-2021/2210 Date 23.09.2020	Sri Ramsing Ronghi	2,74,050.00	3,23,379.00
11	132	Supply for labour for cleaning of GT yard,drains etc. for restoration of Kopili Power Plant Umrongso (from 30.01.2020 to 27.02.2020)	NEEPCO/KHEP/C&P /DF-07/2020-2021/057 Date 24.04.2020	Joythoi Longmaisi	2,20,687.00	2,67,491.00
12	135	Supply of labour for cleaning of GT yard, drains etc. for restoration of Kopili Power Plant Umrongso (w.e.f 28.02.2020)	NEEPCO/KHEP/C&P /DF-07/2019-2020/5531 Date 13.04.2020	Joythoi Longmaisi	3,37,500.00	3,98,250.00
13	136	Supply of labour for cleaning of GT yard ,drains etc. for restoration of Kopili Power Plant Umrongso (w.e.f from 24.03.2020)	NEEPCO/KHEP/C&P /DF-07/2020-2021/0849 Date 22.06.2020	Joythoi Longmaisi	3,75,540.00	4,43,137.00
				Total	19,20,531.68	22,75,847.20

C143

REVISED COST ESTIMATE (200MW Kanjli HPS) at MAY-24 PL

X - Environemnt & Ecology

Sl. No.	Description of items	Unit	Sanctioned Cost			As per Revised Estimate								Variation (with respect to sanctioned cost)		Variation due to				
			Qty	Rate	Amount (Rs. In Lakhs)	Completed work up to MAY-2024			Balance wok			Total		Positive (+)	Negative (-)	Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Additional requirement /	Other causes (specify)	Statutory Levies
						Qty	Rate	Amount (Rs. In Lakhs)	Qty	Rate	Amount (Rs. In Lakhs)	Qty	Amount (Rs. In Lakhs)								
1	2	3	4	5	6	10	11	12	13	14	15	16	17	18	19	20	21	22	24	25	26
1	Environment & Ecology	LS			50.00			0.00			0		0.00	0	50			0	-50		
	Total				50.00			0.00			0.00		0.00	0.00	50.00	0.00	0.00	0.00	-50.00	0.00	0.00

for lumpsum items GST component of cost is not shown separately

- 640 -

REVISED COST ESTIMATE (280MW Kapili HPS) at MAY-24 PL

Y - Losses on Stock

Sl. No.	Description of items	Unit	Sanctioned Cost			As per Revised Estimate								Variation (with respect to sanctioned cost)		Variation due to				
			Qty	Rate	Amount (Rs. In Lakhs)	Completed work up to MAY' 2024			Balance wok			Total		Positive (+)	Negative (-)	Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Additional requirement / New item /Addition /Deletion	Other causes (specify)	Statutory Levies	Remarks
						Qty	Rate	Amount (Rs. In Lakhs)	Qty	Rate	Amount (Rs. In Lakhs)	Qty	Amount (Rs. In Lakhs)									
1	2	3	4	5	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	Losses on Stock	LS			87.40			0.00			0		0.00	0	87.4			-87.4				
Total					87.40			0.00	0.00	0.00	0.00	0.00	0.00	0.00	87.40	0.00	0.00	-87.40	0.00	0.00	0.00	0.00

For lumpsum item GST component of cost is not shown separately

C145

RECONSTRUCTION, RENOVATION & MODERNISATION OF KOPILI P.S (4X50 MW), KHPS
Revised Cost Estimate at MAY-2024 Price Level

ABSTRACT OF COST FOR ESTABLISHMENT

Rs in lakhs

SL No.	Item Code	Item Description	CEA vetted Cost at Jan-2021 PL	Revised Cost Estimate at MAY-2024 PL			Variation	Reasons of variation					
				Completed as on MAY'24	Committed Liabilities/ Balance	Total		Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Addition /Deletion	Other causes (specify)	Statutory Levies
1		Establishment Cost (Civil Works)	3,192.68	5,746.44	-	5,746.44	2,553.76			2,553.76			
2		Establishment Cost (Electro-Mechanical Works)	2,099.34	5,746.44	-	5,746.44	3,647.10			3,647.10			
		TOTAL OF ESTABLISHMENT	5,292.02	11,492.87	-	11,492.87	6,200.86			6,200.86			

C146

Revise Cost Estimate 200 MW KPS MAY-2024 PL

(Rs. In Lacs)

Establishment Cost Annex

Sl No	Head	Financial Year					
		FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	01.04.2024 to 31.05.2024	Total
1	2	4	5	6	7		8
1	Pay & Allowances	2486.12	2378.92	3174.76	2277.89	161.93	10479.62
2	Medical Expenses	31.59	42.70	53.71	40.56	3.33	171.89
3	Travel / Tour	14.56	21.46	33.31	22.06	2.13	93.53
4	Supply of stationery/materials	4.28	13.49	20.12	6.33	0.37	44.58
5	Terminal Benefit	213.78	197.63	159.50	95.69	0.00	666.60
6	Depreciation of fixed assets	0.00	0.00	13.07	19.86	3.72	36.65
	Total of Cost Establishment	2750.32	2654.20	3454.48	2462.39	171.48	11492.87

Establishment Cost for EM Works ₹ 5,746.44

Establishment Cost for CIVIL Works ₹ 5,746.44

~643~

C147

CALCULATION OF ESTABLISHMENT COST AS PER CEA GUIDELINES OCTOBER 2019

A) ESTABLISHMENT COST FOR CIVIL WORKS:	RUPEES IN LAKH
1) Total Civil works cost excluding B- Land as per Revised Cost Estimate (I-B)	4449.40

The Establishment cost for Civil works is calculated considering the following as per CEA Guidelines October' 2019

i) Basic Establishment Cost for Civil Works (BEC-C): 8% of Civil Works.

ii) Scattered works: The projects works are scattered as it's Power House site, Dam site, colony sites, adits , valve house are located at different places with the following details approach road length.

Sl. No	Name of Approach Road	Length	
a	Distance from Kopili colony to Kopili Power Station	10.0	KM
b	Distance of Power House from Adit-3 junction	4.7	KM
c	Distance of Power House site from junction of surge shaft	5.4	KM
d	Distance of Power station from Valve House	3.8	KM
e	Distance of Switchyard from junction PH road	0.2	KM
f	Distance of kopili colony to dam site	3.6	KM
g	Distance of kopili PH to Adit-2	8.4	KM
h	Distance of ch 8 junction from PH	0.5	KM
i	Distance DH From Main Road junction	7.0	KM
	Total approach road length	52.6	KM
	Total approach road length beyond 10 Km	42.6	KM
Hence Total percentage of Additional establishment cost @1% per Km of total length of approach road length more than 10 Km		= 42.6% of BEC-C.	

Sl. No	Particulars	Amount (Rs in Lakh)	
A) DETAIL CALCULATION OF ESTABLISHMENT COST FOR BALANCE CIVIL WORKS.			
1	8% of balance I-B Works = BEC-C	4449.40	
2	For scattered works @1% of BEC-C per km length of total approach road more than 10 km is 42.6% as calculated above	1895.44	
	TOTAL ESTABLISHMENT COST For CIVIL WORK (A)	6344.84	

~644~

C148

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
(Abstract of Revised Cost Estimates of Electro Mechanical Works)
(At MAY-2024 Price Level)

Sl. No	Item	Cost vetted by CEA at Jan'21 PL	Revised Cost Estimate at May'24 PL	Variation w.r.t. sanctioned cost
1	Preliminary - Annex-S(1)	282.23	1,383.15	1,100.92
	GST on Preliminary	50.80	249.21	198.41
	Subtotal (Preliminary)	333.03	1,632.37	1,299.34
2	Generating Plant and Auxiliaries			-
	a) Generating Units and Associated Accessories - Annex - S(2)	20,318.41	20,820.49	502.08
	b) Auxiliary electrical equipment for power station -Annex-S(3)	3,791.67	5,581.22	1,789.55
	c) Auxiliary Mechanical equipment and services for power station - Annex-S(4)	1,600.81	2,263.47	662.66
	GST as applicable on 2(a), (b) & (c)	4,626.97	5,153.75	524.78
	d) Transportation, handling and Insurance charges	808.21	625.83	-182.38
	GST as applicable on 2(d)	145.48	110.41	-35.07
	e)Erection and commissioning charges (excluding spares)	1,997.26	5,865.70	3,868.44
	e.1) Insurance on Erection and Commissioning		166.41	166.41
	GST as applicable on 2€	359.51	1,070.78	711.28
	Sub-Total (Generating Plant and Equipment)	33,650.31	41,658.06	8,007.75
3	Switchyard and Pothead Yard Equipment & Services			-
	a) Substation equipment, auxiliary equipment and service of Switchyard - Annex-S(5)	1,012.07	1,449.49	437.42
	GST (as applicable on 3(a) & (b)	182.17	260.91	78.74
	b) Transportation,handling and insurance charges	60.72	116.71	55.99
	GST as applicable on 3(b)	10.93	20.92	9.99
	c) Erection & Commissioning Charges (excluding spares)	61.70	141.70	80.00
	GST as applicable on 3©	11.11	25.51	14.40
	Sub-Total (Substation Equipment, Auxiliary Equipment and Service of Switch Yard)	1,338.70	2,015.23	676.53
4	Contingencies @ 1% of items 2 & 3	349.89	120.11	-229.78
5	Tools & Plants @ 0.5% of item 2 &3	174.95	113.95	-61.00
6	Sub-Total (Item 1 to 5)	35,846.88	45,539.72	9,692.84
7	Establishment (as per Para 16.5 of Chapter XVI)	2,099.34	5,746.44	3,647.10
8	Sub Total (Item 6 & 7)	37,946.22	51,286.16	13,339.94
9	Audit and account Charges (as per para 16.9.2 of Chapter XVI)	88.31	0	-88.31
10	TOTAL (8 + 9)	38,034.53	51,286.16	13,251.63
11	Dismantling			
	Dismantling Charges	912.41	1,215.13	302.72
	GST as applicable on Dismantling Charges	164.23	218.63	54.39
	Subtotal (Dismantling Charges)	1076.64	1433.76	357.12
12	GRAND TOTAL (11 + 14)	39,111.17	52,719.92	13,608.75

C149

Renovation & Modernization of Kopili H. E. Project. (4X50 MW)
(Abstract of Revised Cost Estimates of Electro Mechanical Works)

Annexure-II

ABSTRACT OF COST ELECTRO-MECHANICAL WORKS

Rs. in Lakhs

		As approved by CEA at Jan'21 PL	Revised Cost Estimate at May 2024 PL				Variation	Reasons of variation					
			Completed as on May'24	Committed Liabilities/ Balance	Escalated balance	Total		Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Addition /Deletion	Other causes (specify)	Statutory Levies
1	Preliminary - Annex-5(1)	282.23	1,351.04	32.11	-	1,383.15	1,100.92	49.16	-	-	1,051.77		198.41
	GST on Preliminary	50.80	249.21			249.21	198.41						
	Subtotal (Preliminary)	333.03	1,600.25	32.11	-	1,632.37	1,299.34	49.16	-	-	1,051.77	-	198.41
2	Generating Plant and Auxiliaries												
	a) Generating Units and Associated Accessories - Annex - 5(2)	20,318.41	19,151.77	1,668.72	-	20,820.49	502.08	1,108.87	-	306.41	-1,102.39	-	
	b) Auxiliary electrical equipment for power station -Annex-5(3)	3,791.57	6,281.20	240.80	-	6,521.72	1,768.50	567.70	340.80	440.42	41.36	-	
	c) Auxiliary Mechanical equipment and services for power station - Annex-5(4)	1,668.61	2,267.83	5.55	-	2,263.47	662.86	-	-	821.83	-158.17	-	
	d) Erection -Customs Duty (as applicable) on 2(a), (b) & (c)					-							576.78
	e) GST as applicable on 2(a), (b) & (c)	4,528.57	5,153.71			5,153.71	625.15						
	f) Transportation, handling and insurance charges	806.21	625.83			625.83	-182.38			-182.38		-	
	GST applicable on Transporation, handling and insurance Charges	165.48	110.41			110.41	-35.07						-35.07
	i) Erection and commissioning charges	1,997.39	5,272.74	583.54		5,903.75	3,868.49	316.74			3,551.75		
	e. 1) Insurance on Erection and Commissioning		152.90	13.51		166.41	166.41				166.41		
	GST applicable on Erection & Commissioning Charges	348.01	1,015.78			1,670.78	711.28						711.28
	Sub-Total (Generating Plant and Equipment)	33,650.31	39,116.71	2,541.36	-	41,656.06	8,897.75	2,309.27	340.80	1,476.39	2,877.96	-	1,200.98
3	Switchyard and Pothead Yard Equipment & Services												
	a) Substation equipment, auxiliary equipment and service of Switchyard - Annex-5(5)	1,012.27	1,334.05	110.44	-	1,445.49	427.42	-	-	425.98	1.43	-	
	b) Excise / Customs Duty (as applicable) on 3 (a)					-							78.74
	c) GST (as applicable on 3(a) & (b)	182.17	260.91			260.91	78.74					-	
	d) Transportation, handling and insurance charges	60.72	116.71			116.71	55.99			55.99			0.99
	GST on Transportation, handling and insurance charges	10.93	20.92			20.92	9.99						-
	e) Erection & Commissioning Charges					-				80.00			
	e. 1) Erection & Commissioning Charges	61.70	141.70			141.70	80.00						18.40
	GST applicable on Erection & Commissioning Charges	11.11	25.51			25.51	14.40						
	Sub-Total (Substation Equipment, Auxiliary Equipment and Service of Switch Yard)	1,338.78	1,899.79	110.44	-	2,010.23	671.53	-	-	561.97	1.43	-	103.13
										-229.78			
4	Contingencies @ 1% of items 2 & 3	346.69	119.37	8.74		128.11	-218.78			41.06			
5	Tools & Plants @ 0.5% of item 2 & 3	174.96	103.44	15.51	-	118.95	-61.80						
6	Sub- Total (Item 1 to 5)	35,845.88	41,839.56	2,709.15	-	45,535.73	9,692.84	3,359.73	340.80	1,758.47	1,731.10	-	1,502.53
7	Freight-interest (as per Para 19.3 of Chapter XVI)	3,095.34	5,746.44	-	-	5,746.44	2,647.10			2,647.10			
8	Sub Total (Item 6 & 7)	37,941.22	45,586.00	2,709.15	-	51,286.16	13,339.94	3,359.73	340.80	4,406.57	1,731.10	-	1,502.53
9	Audit and account Charges (as per para 16.5.2 of Chapter XVI)	88.31	-	-	-	-	-88.31				-88.31		
11	TOTAL (8 + 9)	38,029.53	45,586.00	2,709.15	-	51,286.16	13,251.63	3,359.73	340.80	4,406.57	1,643.79	-	1,502.53
12	Dismantling Charges	912.41	1,215.13	-	-	1,215.13	302.72			302.72			
13	GST on Dismantling Charges	164.23	218.63			218.63	54.39						54.39
14	Subtotal (Dismantling Charges)	1076.64	1433.76	0.00	0.00	1433.76	357.12	0.00	0.00	302.72	0.00	0.00	54.39
15	GRAND TOTAL (11 + 14)	39,111.17	46,019.77	2,709.15	-	52,719.92	13,608.75	3,359.73	340.80	4,709.31	1,643.79	0.00	1,556.92

~ 646 ~

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C 150

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)

Revised Cost Estimates of Electro Mechanical Works

(Generating Units and Associated Accessories)

(Rs in Lakhs)

Annex-5-I

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	CEA approved rate	Revised Cost Estimate at May'24 PL				Taxes	Variation
						Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total		
	1	2	3	4							
1	1	Design & Consultancy Charges (lot)	1		267.23						
2		Building Information Modelling (BIM) Software	1			693.00	32.11		725.11	130.52	
3		Hydraulic Thrust, residual torque calculation and additional reverse engineering	1			70.50			70.50	12.69	
4		Additional effort made in Unit -I for interface issue due to modified design	1			210.78			210.78	37.94	
5		CFD Study of WCS alongwith Underwater Parts	1			95.09			95.09	17.12	
6		Consultancy services for preparation and providing of detailed construction drawing of 220 kV D/C DD Type Tower with pile foundation for Wind Zone-V	1			25.96			25.96	4.673	
7		Turbine design engineering- specialist service for essential input for refurbishment of underwater parts of 4X50 MW Kopili Power Station	1			34.40			34.40	6.192	
8		Onsite assessment and repair of sub- systems at 4 X MW Kopili Power Station due to the incident of inundation occurred on 07.10.2019 in the Power Station	1			3.00			3.00	0.540	
9		Order for inspection/ Testimonial checking of Cummins make 437.5 KVA DG Set installed at 4 X 50 MW Kopili Power Station after the incident of inundation which occurred on 07.10.2019 at Kopili Power Station	2			0.11			0.11	0.020	
10		Health assessment of spiral casing from inside of Units 1,2,3 and 4 and machines pertaining to Kopili Power Station	1			26.00			26.00	4.680	
11		Residual Life Assessment (RLA) Studies of Underwater Parts of 4X50MW Kopili Power Station	1			40.64			40.64	7.315	1,007.99

~ 647 ~

C151

Renovation & Modernisation of Kopili H. E. Project, (4X50 MW)

Revised Cost Estimates of Electro Mechanical Works

(Generating Units and Associated Accessories)

(Rs in Lakhs)

Annex-5-1

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision of Erection and Testing		Source of Original Estimated Price
			Price Escalation	Change in Scope/Desig n	Inadequate/Ov er Provision	Addition/Deleti on	Others	Taxes	Amount	Tax	Amount	Tax	
	1	2						(9+10)X0.18					
1	1	Design & Consultancy Charges (lot)											
2		Building Information Modeling (BIM) Software	49.156						0.30	0.05			
3		Hydraulic Thrust./residual torque calculation and additional reverse engineering											
4		Additional effort made in Unit-4 for interface issue due to modified design											
5		CFD Study of WCJ alongwith Underwater Parts											
6		Consultancy services for preparation and providing of detailed construction drawing of 220 kV D/C DD Type Tower with pile foundation for Wind Zone-V											
7		Turbine design engineering- specialist service for essential input for refurbishment of underwater parts of 4X50 MW Kopili Power Station							1.31	0.24			
8		Onsite assessment and repair of sub- systems at 4 X 50 MW Kopili Power Station due to the incident of inundation occurred on 07.10.2019 in the Power Station							5.55				
9		Order for Inspection/ healthiness checking of Cummins make 437.5 KVA DG Set installed at 4 X 50 MW Kopili Power Station after the incident of inundation which occurred on 07.10.2019 at Kopili Power Station							0.491	0.03			
10		Health assessment of spiral casing from inside of Unit# 1,2,3 and 4 and machines pertaining to Kopili Power Station											
11		Residual Life Assessment (RLA) Studies of Underwater Parts of 4X50MW Kopili Power Station				1,048.77							

C152

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)

Revised Cost Estimates of Electro Mechanical Works

(Generating Units and Associated Accessories)

(Rs in Lakhs)

Annex-S-1

Ref. S. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./PC)	CEA approved rate	Revised Cost Estimate at May'24 PL				Taxes	Variation
						Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total		
	1	2	3	4							
12		Project Engineering and Interface Management Service- for Reconstruction, R&M of Kopili Power Plant	1			46.00			46.00	8.280	
13		Supply of GI portable cabin office, GI portable Cabin Dinning and GI porable cabin bunk house	1			38.63			38.63	6.953	
14		Site visit for assessment, preparation of technical specification, design memorandum of complete ventilation & AC system along with drawing submission of 4X50MW Kopili Power Station	1			1.67			1.67	0.300	
15		Thickness measurement of Spiral casing in 03 Nos of 50MW Hydro Turbine Generator Units of Kopili Power Station	1			18.90			18.90	3.350	
16		Thickness Measurement of Spiral Casing by PAUT in one (1) 50MW Hydro Turbine Generator Unit of 4X50 MW Kopili Power Station	1			11.50			11.50	2.070	
17		Depution of Engineer for Site study and inspection of 11 kV Bus Duct				2.00			2.00	0.360	
18		Laser Scanning and developmen of as built drawing of 4 nos. of DT				16.44			16.44	2.959	
19	2	Model Testing for Turbine			-						
20		Integrity Testing of the embedded and exposed parts of 4 nos of Spiral Casing of 4X50MW Kopili Power Station	4			15.68			15.68	2.822	
21	3	Transient Analysis Report	0		15.00						
		Total			282.21	1,348.05	32.11	-	1,380.16	248.74	1,097.93

~ 649 ~

C153

Renovation & Modernization of Kopili H. E. Project, [4X50 MW]

Revised Cost Estimates of Electro Mechanical Works

(Generating Units and Associated Accessories)

[Rs in Lakhs]

Annex-I-1

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision of Erection and Testing		Source of Original Estimated Price
			Price Escalation	Change in Scope/Desig n	Inadequate/Ov er Provision	Addition/Deleti on	Others	Taxes	Amount	Tax	Amount	Tax	
	1	2						29+156=0.16					
12		Project Engineering and Interface Management Service- for Reconstruction, R&M of Kopili Power Plant							1.00	0.16			
13		Supply of GI portable cabin office, GI portable Cabin Dinning and GI portable cabin bunk house											
14		Site visit for assessment, preparation of technical specification, design memorandum of complete ventilation & AC system along with drawing submission of 4X50MW Kopili Power Station											
15		Thickness measurement of Spiral casing in 03 Nos of 50MW Hydro Turbine Generator Units at Kopili Power Station											
16		Thickness Measurement of Spiral Casing by PAUT in one (1) 50MW Hydro Turbine Generator Unit of 4X50 MW Kopili Power Station											
17		Depution of Engineer for Site study and inspection of 11 kV Bus Duct											
18		Laser Scanning and development of as built drawing of 4 nos. of DT											
19	2	Model Testing for Turbine											
20		Integrity Testing of the embedded and exposed parts of 4 nos of Spiral Casing of 4X50MW Kopili Power Station											
21	9	Transient Analysis Report											BHEL Offer IB1900517/BPH/HKP/0072/ Butterfly Valve dated 28/11/2018
		Total	09.16	-	-	1,048.77		198.10	2.99	0.48			

C154

Renovation & Modernization of Ropli H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

Annex-5-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	Equipments Cost				CEA approved rate						Variation
					Indian Component	Foreign Component		Total							
					(Rs. Lakh)	FC	(Equt. in Rs. Lakh)	(Rs. Lakh)		Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3	4	5	6	7	5+6+7							
1	1	a) Turbine Generator Units 50 MW, 600 RPM, 326.5 M head, 0.9 pf, 11 kV complete with allied equipment such as MIV, Governor, AVR, Excitation System etc.											-	-	-
2		a.1) 56.6 MW (Max. at design head), 600 RPM Turbine Assembly													
3		a.1.01) SS Pressure Relief valve (Nos.)	4	79.58	318.32		-	318.32	319.33	307.87	25.08		332.92	59.93	14.60
4		a.1.02) Turbine Guide Bearing Pads (1 set consists of 6 nos. of pads) (Sets)	4	18.31	73.24		-	73.24	71.24	19.00	2.37		31.37	5.63	-41.87
5		a.1.03) Shaft Sealing Arrangement (SS) (Sets)	4	16.48	65.92		-	65.92	65.92	53.86	4.40		58.25	10.48	-7.67
6		a.1.04) Turbine Shaft (Nos.)	4	86.68	346.72		-	346.72	346.72	103.21	8.41		111.63	20.09	-235.09
7		a.1.05) SS Cladding Turbine Shaft (Nos.)	4	14.40	57.60		-	57.60	57.60				-	-	-57.60
8		a.1.06) Ejector (SS) (Nos.)	4	2.44	9.76		-	9.76	9.76				-	-	-9.76
9		Top Cover Drainage system	4						-	82.25	5.08		87.37	12.13	67.37
10		a.1.07) Turbine shaft Blanking Flange (SS) (Nos.)	4	0.23	0.92		-	0.92	0.92	59.48	3.78		63.26	7.79	62.34
11		Turbine Bearing Cooling Plant	4							62.25	5.08		67.34	12.12	67.34
12		Guide Vane Servomotor	4							103.28	8.42		111.70	20.11	111.70
13		Flow measurement system	4							83.13	5.79		88.92	16.78	88.92
14		EPS	1							372.96	62.10		435.04	78.31	435.04
15		a.1.08) Turbine top cover	4	191.48	765.92		-	765.92	765.92						
16		a.1.09) Upper Labyrinth(Fixed ring) with transport fixture	4	32.84	131.36		-	131.36	131.36						
17		a.1.10) Pivot Ring(Lower ring)	4	101.90	407.60		-	407.60	407.60						
18		a.1.11) Guide vanes along with lever, strap,cover plate , dowels(key set) and joining hardware as applicable	4	70.51	282.04		-	282.04	282.04						
19		a.1.12) Self-lubricated bushes	4	7.25	29.00		-	29.00	29.00						
20		a.1.15) Lower labyrinth(Fixed ring) with transport fixture	4	32.84	131.36		-	131.36	131.36						
21		a.1.18) Adjusting Ring for for Unit- I & II	2	38.07	38.14		-	38.14	38.14						
22		a.1.19) Adjusting Ring for for Unit- III & IV	2	26.18	32.36		-	32.36	32.36						
23		a.1.20) Runner Cone	4	10.42	41.68		-	41.68	41.68	3,015.00	382.80		3,997.80	719.90	-360.18
24		a.1.21) Runner	4	473.42	1,893.68		-	1,893.68	1,893.68						
25		a.1.22) Labyrinth(Upper and lower rowing ring)	8	32.23	257.84		-	257.84	257.84						
26		a.1.23) Cup Rubber Seal, Shear Pin, "O" seal (for Unit#1 & Unit#2)	2	1.54	3.08		-	3.08	3.08						
27		a.1.24) Cup Rubber Seal, Shear Pin, "O" seal (for Unit#3 & Unit#4)	2	1.54	3.08		-	3.08	3.08						
28		a.1.25) Hermetically Sealed Limit Switch	4	0.55	2.20		-	2.20	2.20						
29		a.1.13) Upper Cone Unit-I & II	2	42.31	84.62		-	84.62	84.61						
30		a.1.14) Upper Cone Unit-III& IV	2	50.99	101.98		-	101.98	101.98						
31		a.1.16) Lower Cone for Unit-I & II	2	41.28	82.56		-	82.56	82.56						
32		a.1.17) Lower Cone for Unit-III &IV	2	35.74	71.48		-	71.48	71.48						

551

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

Annex-5-2

Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision, Erection and Testing	
		Price Escalation	Change in Scope/Design	Inadequate/ Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
1	2	8									
1	a) Turbine Generation Units 50 MW, 600 RPM, 326.5 M head, 0.9 pf, 11 kv complete with allied equipment such as MIV, Governor, AVR, Excitation System etc.										
	a.1) 56.6 MW (Max. at design head), 600 RPM Turbine Assembly										
	a.1.01) SS Pressure Relief valve (Nos.)	33.42		318.45			6.02	5.65	1.01	1,520.84	273.75
	a.1.02) Turbine Guide Bearing Pads (1 set consists of 8 nos. of pads) (Sets)	3.37					0.61	0.32	0.09		
	a.1.03) Shaft Sealing Arrangement (SS) (Sets)	6.25					1.13	0.97	0.17		
	a.1.04) Turbine Shaft (Nos.)	11.63					2.09	1.86	0.34		
	a.1.05) SS Cladding Turbine Shaft (Nos.)						-		-		
	a.1.06) Ejector (SS) (Nos.)						-		-		
	Top Cover Drainage system	7.37					1.33	1.12	0.20		
	a.1.07) Turbine shaft Blanking Flange (SS) (Nos.)	23.16					4.18	0.57	0.07		
	Turbine Bearing Cooling Plant	7.34					1.32	1.12	0.20		
	Guide Vane Servomotor	11.70					2.11	1.88	0.34		
	Flow measurement system	5.51						0.37	0.07		
	EPC	43.61					7.85	6.43	1.16		
	a.1.08) Turbine top cover			-360.18			-	11.44	2.06	91.10	16.40
	a.1.09) Upper Labyrinth (fixed ring) with transport fixture						-				
	a.1.10) Pivot Ring(Lower ring)						-				
	a.1.11) Guide vanes along with lever, strap,cover plate, dowels(key set) and joining hardware as applicable						-				
	a.1.12) Self-lubricated bushes										
	a.1.15) Lower labyrinth(Fixed ring) with transport fixture										
	a.1.18) Adjusting Ring for for Unit-I & II										
	a.1.19) Adjusting Ring for for Unit-III & IV										
	a.1.20) Runner Cone										
	a.1.21) Runner										
	a.1.22) Labyrinth(Upper and lower moving ring)										
	a.1.23) Cup Rubber Seal, Shear Pin, "O" seal (for Unit#1 & Unit#2)										
	a.1.24) Cup Rubber Seal, Shear Pin, "O" seal (for Unit#3 & Unit#4)										
	a.1.25) Hermetically Sealed Limit Switch										
	a.1.13) Upper Cone Unit-I & II										
	a.1.14) Upper Cone Unit-III& IV										
	a.1.16) Lower Cone for Unit-I & II										
	a.1.17) Lower Cone for Unit-III &IV										

C155

652

Annex-5-2_Pg 1 of 24

C156

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Assessories)

(Rs. in Lakhs)

Annex-5-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	Equipments Cost				CEA approved rate						Variation
					Indian Component	Foreign Component		Total							
					(Rs. Lakh)	FC	(Equt. in Rs. Lakh)	(Rs. Lakh)		Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3	4	5	6	7	8=5+7							
33		Turbine Pit Covers	4							29.05	3.23		32.28	5.81	32.28
34		Cyclone Separator and associated accessories	4							23.40	5.85		29.25	5.27	29.25
35		SS seamless pipes with accessories for runner balancing	1 lot							44.76	1.38		46.15	8.31	46.15
36		Refurbishment of eroded draft tube of 4 x 50 MW Kopili Power Station.								179.99			179.99		179.99
37		Refurbishment of drain boxes inside Draft tube of all 04 units of Kopili Power Station								16.57			16.57	2.98	16.57
38		Unit 1 spiral refurbishment											-	-	-
39		a.2) 50MW, 11KV 600RPM, 0.9p.f. 50Hz, 3 Phase ertical Shaft A.C Generator													
40		a.2.01) Generator complete Assembly (Nos.)	4	1,409.33	5,637.32		-	5,637.32	5,637.32	5,587.86	486.93		6,474.78	1,165.46	837.46
41		a.2.02) Tools and tackles for generator (Sets)	1	66.89	133.78		-	133.78	133.78	46.82	5.07		51.89	9.34	-81.89
42		a.2.03) Station Auxiliaries for generators Fire Fighting System 2 Sets for 4 units Motorised Power Pack 4 Sets for 4 units	1	126.57	126.57		-	126.57	129.97	142.91	23.75		166.26	29.93	39.69
43		a.2.04) Special Instruments for generator								-	-		-	-	-
44		Continuous Online Partial Discharge Analyzer, Moisture Detector, Continuous Online Vibration Monitor and Shaft Current Monitor (Sets)	4	103.32	413.28		-	413.28	413.28	361.48	27.72		389.20	66.96	-44.08
45		a.2.05) Generator Coolers (Nos)	4	188.13	752.52		-	752.52	752.52				-	-	-752.52
46		a.2.06) Condition monitoring items for generator											-	-	-
47		Continuous Online Air Gap Monitoring System, Online Magnetic Flux Monitoring System, Online End Winding Vibration Monitoring System (Sets)	4	251.84	1,007.36		-	1,007.36	1,007.36		-		-	-	-1,007.36
48		a.3) 1400 mm dia Spherical Valve (MIV)											-	-	-

~653~

Renovation & Modernisation of Kopili H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

Annex-5-2

Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision, Erection and Testing	
		Price Escalation	Change in Scope/Design	Inadequate/ Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
1	2	8									
	Turbine Pit Covers				52.18						
	Cyclone Separator and associated accessories				29.35						
	SS seamless pipes with accessories for runner balancing				48.15		8.31				
	Refurbishment of eroded draft tube of 4 X 50 MW Kopili Power Station.				179.99						
	Refurbishment of drain boxes inside Draft tube of all 04 units of Kopili Power Station				16.57						
	Unit 1 spiral refurbishment									91.50	
	a.2) 50MW, 11kV 600RPM, 0.8p.f. 50Hz, 3 Phase ertical Shaft A.C Generator			-					-		
	a.2.01) Generator complete Assembly (Nos.)	635.55		201.89			114.40	95.87	17.26		
	a.2.02) Tools and tackles for generator (Sets)	4.89		-86.78			0.88	0.77	0.14		
	a.2.03) Station Auxiliaries for generators Fire Fighting System 2 Sets for 4 units Motorised Power Pack 4 Sets for 4 units	16.16		19.43			2.93	2.46	0.44		
	a.2.04) Special Instruments for generator			-					-		
	Continuous Online Partial Discharge Analyzer, Moisture Detector, Continuous Online Vibration Monitor and Shaft Current Monitor (Sets)	34.83		-78.91			6.27	5.49	0.78		
	a.2.05) Generator Coolers (Sets)				-752.52				-		
	a.2.06) Condition monitoring items for generator			-					-		
	Continuous Online Air Gap Monitoring System, Online Magnetic flux Monitoring System, Online End Winding Vibration Monitoring System (Sets)				-1,007.36		-				
	a.3) 1400 mm dia Spherical Valve (MIV)			-					-		

C158

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

Annex-I-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	Equipments Cost				CEA approved rate						Variation
					Indian Component	Foreign Component		Total							
					(Rs. Lakh)	FC	(Equi. in Rs. Lakh)	(Rs. Lakh)		Expenditure upto Mar'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3	4	5	6	7	8=5+7							
49		a.3.01) New SS Spherical Valve (MIV) (Nos.)	3	339.45	1,018.35		-	1,018.35	1,018.35	1,018.35			1,018.35	183.30	-0.00
50		a.3.01.01) Associated components	3	160.90	482.71		-	482.71	482.71	482.71			482.71	86.89	-0.00
51		a.3.01.02) Tools & Tightening Devices	1	11.86	11.86		-	11.86	11.86	11.86			11.86	2.13	-
52		a.3.02) Refurbishment of Damaged Spherical Valve (Sets)	1	82.45	82.45		-	82.45	82.45	82.45			82.45	14.84	-
53		a.3.03) Optional items in case found defective during refurbishment	1	26.86	26.86		-	26.86	26.86	26.86			26.86	4.83	-
54		a.3.04) Associated components for refurbishment of Spherical Valve (Sets)	1	160.90	160.90		-	160.90	160.90	160.90			160.90	28.96	-
55		Modification of Penstock Drain Line	4						-	-	80.00		80.00		80.00
56		Weld build up and machining of spiral case inlet flange area of all 4 units of Kopili Power Station.						-					-	-	-
57		a) Sample collection, testing and one time site mobilization	1		-			-	-	29.10			29.10	5.24	29.10
58		b) Weld Build up for corraged area	4		-			-	-	19.40			19.40	3.49	19.40
59		c) Onsite Machining of Spiral Casing Flange	4		-			-	-	48.50			48.50	8.73	48.50

655

C 159

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

Annex-5-2

Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision, Erection and Testing	
		Price Escalation	Change in Scope/Design	Inadequate/ Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
1	2	8									
	a.3.01) New SS Spherical Valve (MIV) (Nos.)							22.50	4.05		
	a.3.01.01) Associated components			-0.02					-		
	a.3.01.02) Tools & Tightening Devices								-	37.52	10.35
	a.3.02) Refurbishment of Damaged Spherical Valve (Sets)							12.00	2.16		
	a.3.03) Optional items in case found defective during refurbishment								-		
	a.3.04) Associated components for refurbishment of Spherical Valve (Sets)							1.50	0.27		
	Modification of Penstock Drain Line				80.00		-	-	-	-	-
	Weld build up and maching of spiral case inlet flange area of all 4 units of Kopili Power Station										
	a) Sample collection, testing and one time site mobilization				29.10						
	b) Weld Build up for damaged area				19.40						
	c) Onsite Machining of Spiral Casing Flange				48.50						

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

C160

Annex-5-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	Equipments Cost				CEA approved rate						Variation
					Indian Component	Foreign Component		Total							
					(Rs. Lakh)	FC	(Equi. in Rs. Lakh)	(Rs. Lakh)		Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3	4	5	6	7	8=5+7							
60													-	-	-
61		a.4) Governing System											-	-	-
62		a.4.01) Governor System (Sets)	4	64.87	259.48		-	259.48	259.48	220.19	17.90		238.08	42.85	-21.40
63		a.4.02) Oil Pressure System for Governer & MIV (Sets)	4	38.75	155.00		-	155.00	155.00	530.47	26.94		957.41	84.33	202.41
64		a.4.03) Instruments for Turbine, CWS, DDS, HP & LP, CAS, HR/TR for four units (Lot)(AHP)	1	221.88	221.88		-	221.88	221.88	152.70	25.37		178.07	32.85	-43.81
65		a.4.04) Oil Leakage Unit (Sets)	4	3.23	12.92		-	12.92	12.92	-	-		-	-	-12.92
66		Speed Sensing Device (toothed wheel)	4							20.57	1.67		22.25	4.80	22.25
67		a.4.05) Lubrication Oil Filtration System (Sets)	1	28.41	28.41		-	28.41	28.41	23.88	3.97		27.86	5.61	-0.55
68		a.5) Static Excitation Sytem			-		-			-	-		-	-	-
69		a.5.1) 400KVA, 11KV/0.200KV Dry Type Exitation Transformer without enclosure (Nos.)	4	15.89	63.56		-	63.56	63.56	81.90	6.66		88.56	15.94	25.00
70		a.5.2) Static Excitation System and Power Cables for Excitation System (Sets)	4	100.00	400.00		-	400.00	400.00	191.87	23.72		315.60	56.81	-84.40
71		b) Unit Control Boards (Included in SCADA)					-						-	-	-
72		c) Cooling Water System comprising pump sets, valves, piping etc.											-	-	-
73		c.1) Cooling water pump set for Unit 1 and 2	1	17.75	53.25		-	53.25	53.25	53.25			53.25	9.585	-

C161

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

Annex-5-2

Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision, Erection and Testing	
		Price Escalation	Change in Scope/Design	Inadequate/ Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
1	2	6		-					-		
				-					-		
	a.4) Governing System						4.15	4.00	0.72		
	a.4.01) Governor System (Sets)	13.58					6.73	5.98	1.07		
	a.4.02) Oil Pressure System for Governor & MIV (Sets)	17.41									
	a.4.03) Instruments for Turbin e, CWS, ODS, HP & LP, CAS, HR/TR for four units (Lot)(AHPS	18.80		69.00			3.38	3.03	0.55		
	a.4.04) Oil Leakage Unit (Sets)						-	-	-		
	Speed Sensing Device (toothed wheel)	2.25					0.40	0.37	0.07		
	a.4.05) Lubrication Oil Filtration System (Sets)	2.86		-1.41			0.51	0.47	0.08		
	a.5) Static Excitation Sytem			-			-		-		
	a.5.1) 400KVA, 11KV/0.200KV Dry Type Excitation Transformer without enclosure (Nos.)	8.56		10.44			1.54	1.31	0.24		
	a.5.2) Static Excitation System and Power Cables for Excitation System (Sets)	30.60		-113.00			5.51	4.68	0.84		
	b) Unit Control Boards (Included in SCADA)			-					-		
	c) Cooling Water System comprising pump sets, valves, piping etc.			-					-		
	c.1) Cooling water pump set for Unit 1 and 2							2.19	0.41	0.0475	0.01

~ 858 ~

Annex-5-2_Pg. 8 of 24

C162

(Rs. in Lakhs)

Annex-5-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	Equipments Cost				CEA approved rate						Variation
					Indian Component	Foreign Component		Total							
					(Rs. Lakh)	FC	(Equv. in Rs. Lakh)	(Rs. Lakh)		Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3	4	5	6	7	8=5+7							
74		c.2) Cooling water pump set for Unit 3 and 4	3	17.75	53.25		-	53.25	53.25	53.25			53.25	9.585	-
75		c.3) Supply of Electrical Starter Cum Control Panel	2	19.77	39.54		-	39.54	39.54	34.92			34.92	6.286	-4.62
76		c.4) Supply of all Instruments with Instrument Valves & Boss for Flow, Pressure, Temperature etc for Main Header	2	3.64	7.27		-	7.27	7.27	7.76			7.76	1.397	0.49
77		c.5) Supply of Cables, Junction Boxes, Supports, Gaskets	1	5.89	5.89		-	5.89	5.89	65.96			65.96	11.873	60.07
78		c.6) Supply of Main Header Assembly Material (Pipe, Pipe Fittings, Flanges etc)	2	64.14	128.28		-	128.28	128.28	155.20			155.20	27.936	26.92
79		c.7) Fasteners, Hardwares, Gaskets Etc for main header	1	14.54	29.07		-	29.07	29.07	29.10			29.10	5.238	0.03
80		c.8) Supply of all type of valves for Main Header (Gate, Butter Fly, Niddle, Check etc.) including motorised	1	59.25	118.51		-	118.51	118.51	112.52			112.52	20.254	-5.99
81		c.9) Supply of Filters (Y-strainer & Cyclone Seperator)	1	62.76	125.53		-	125.53	125.53	120.28			120.28	21.650	-5.25
82		c.10) Supply of Unit Cooling Water Lines Material (Pipe, Pipe Fittings, Flanges, Fasteners etc)	4	29.16	116.63		-	116.63	116.63	108.64			108.64	19.555	-7.99
83		c.11) Fasteners, Hardwares, Gaskets Etc for Unit header & Lines	4	9.63	38.53		-	38.53	38.53	46.56			46.56	8.381	8.03
84		c.12) Supply of all type of valves for Unit Cooling Water Lines (Gate, Butter Fly, Niddle, Check etc.) including motorised	4	21.95	87.79		-	87.79	87.79	83.42			83.42	15.016	-4.37

Renovation & Modernization of Rapidi H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

Annex-5-2

Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision, Erection and Testing	
		Price Escalation	Change in Scope/Design	Inadequate/ Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
1	2	8									
	c.3) Cooling water pump set for Unit 3 and 4							2.29	0.41	0.0475	0.01
	c.3) Supply of Electrical Starter Cum Control Panel			-4.82				1.415	0.25	27.16	4.89
	c.4) Supply of all instruments with instrument Valves & Boss for Flow, Pressure, Temperature etc for Main Header			0.49				1.134	0.20		
	c.5) Supply of Cables, Junction Boxes, Supports, Gaskets			60.07				0.803	0.14		
	c.6) Supply of Main Header Assembly Material (Pipe, Pipe Fittings, Flanges etc.)			26.92				2.52	0.53		
	c.7) Fasteners, Hardwares, Gaskets Etc for main header			0.03				0.847	0.15		
	c.8) Supply of all type of valves for Main Header (Gate, Butter Fly, Niddle, Check etc.) including motorised			-5.98				1.55	0.28		
	c.9) Supply of Filters (Y-strainer & Cyclone Separator)			-5.25				2.66	0.48		
	c.10) Supply of Unit Cooling Water Lines Material (Pipe, Pipe Fittings, Flanges, Fasteners etc.)			-7.99				4.93	0.87		
	c.11) Fasteners, Hardwares, Gaskets Etc for unit header & Lines			8.03				0.91	0.16		
	c.12) Supply of all type of valves for Unit Cooling Water Lines (Gate, Butter Fly, Niddle, Check etc.) including motorised			-4.37				2.52	0.45		

C 164

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

Annex-5-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	Equipments Cost				CEA approved rate						Variation
					Indian Component	Foreign Component		Total							
					(Rs. Lakh)	FC	(Equi. in Rs. Lakh)	(Rs. Lakh)		Expenditure upto May'24	Committed Liabilities/Balance	Escalated Reserve	Total	Taxes	
	1	2	3	4	5	6	7	8=5+7							
85		c.13) Supply of all Instruments with instrument Valves & Boss for Flow, Pressure, Temperature etc for Unit Header & Lines	4	9.11	36.45		-	36.45	36.45	34.92			34.92	6.286	-1.53
86		c.14) Supply of Cables, Junction Boxes, Supports, Gaskets	4	1.47	5.89		-	5.89	5.89	11.64			11.64	2.055	5.75
87		Spply of all requ material in SS304 for pump side CW suction	6							29.50			29.50	5.310	29.50
88		Spply of all requ material in SS304 for TRC side CW suction	6							19.38			19.38	3.488	19.38
89		Spply of all requ material in SS304 for Unit CW discharge line side	4							21.47			21.47	3.865	11.47
90		d) Drainage & Dewatering System					-						-	-	-
91		d.1) Power House Drainage & Dewatering System (Sets)	1	87.70	175.41		-	175.41	175.41	175.41	-		175.41	31.574	0.00
92		Supply of requ material in SS304 for D&D discharge line header	2	10.05	20.10			20.10		20.10	-		20.10	3.618	20.10
93		Supply of requ consumables for cleaning embeded pipelines	1	0.68	0.68			0.68		0.68	-		0.68	0.122	0.68
94		Necessary chipping of existing concrete								-	-		-	0.000	-
95		Necessary chipping of existing concrete to expose rails A Line								-	-		-	0.000	-

661

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakh)

Annex-5-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision, Erection and Testing	
			Price Escalation	Change in Scope/Design	Inadequate/ Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
	1	2	4									
85		c.13) Supply of all Instruments with Instrument Valves & Boss for Flow, Pressure, Temperature etc for Unit Header & Lines			-1.53				2.34	0.41		
86		c.14) Supply of Cables, Junction Boxes, Supports, Gaskets			5.75				2.25	0.41		
87		Spply of all reqd material in SS304 for pump side CW suction				29.50			0.34	0.06	4.59	0.81
88		Spply of all reqd material in SS304 for TRC side CW suction				19.38			4.10	0.74	4.59	0.81
89		Spply of all reqd material in SS304 for Unit CW discharge line side				21.47			6.81	1.23	1.25	0.22
90		d) Drainage & Dewatering System										
91		d.1) Power House Drainage & Dewatering System (Sets)							1.50	0.27	1.00	0.18
92		Supply of reqd material in SS304 for D&D discharge line header				20.10		3.62	1.19	0.21	1.00	0.95
93		Supply of reqd consumables for cleaning embeded pipelines				0.88			0.05	0.01	1.50	0.27
94		Necessary chipping of existing concrete								0.00	1.13	0.23
95		Necessary chipping of existing concrete to expose upto A Line								0.00	1.00	0.18

C165

- 662 -

Renovation & Modernization of Kopili H. E. Project, (4650 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

C166

Annex-5-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	Equipments Cost				CEA approved rate						Variation
					Indian Component	Foreign Component		Total							
					(Rs. Lakh)	FC	(Eqvt. In Rs. Lakh)	(Rs. Lakh)		Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3	4	5	6	7	8=5+7							
96		Supply and Delivery of DT Dewatering long spindle valve	4	7.50	30.00			30.00		30.00	-		30.00	5.400	30.00
97		Supply and Delivery of 8 inch (200 NB) Line components (Gate Valve, Check Valve, Flange)	1	10.36	10.36			10.36		10.36			10.36	1.865	10.36
98		4.2) MN Hall Dry Pit Pump for flood handling (Sets)	1	95.14	95.14		-	95.14	95.14	91.00	-		91.00	16.380	-4.14

~ 663 ~

Annex-5-1_Pg 13 of 24

C 167

Renovation & Modernization of Koyli H. E. Project, (4850 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

Annex-5-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision, Erection and Testing	
			Price Escalation	Change in Scope/Design	Inadequate/ Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
	1	2	8									
96		Supply and Delivery of DT Dewatering long spindle valve				90.00		5.40	0.75	0.14	2.40	0.43
97		Supply and Delivery of 8 inch (200 NB) Line components (Gate Valve, Check Valve, Flange)				30.55		1.86				
98		4.3) MIV Hall Dry Pit Pump for flood handling (Sets)			-4.14			18.38	1.50	0.27	7.50	1.35

~ 664 ~



C168

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

Annex-5-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	Equipments Cost				CEA approved rate						Variation
					Indian Component	Foreign Component		Total							
					(Rs. Lakh)	FC	(Eqvt. in Rs. Lakh)	(Rs. Lakh)		Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3	4	5	6	7	8=5+7							
99		d.3) PH Rain Water D&D System (Sets)	1	150.30	150.30		-	150.30	150.30	154.00	-		154.00	27.720	3.70
100		Supply of pipe support and hardwares, fabrication, installation of water discharge pipelines	1							6.40	-		6.40	1.152	6.40

665

Renovation & Modernization of Koyli H. E. Project, (4X53 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

Annex-5-2

Ref. Sr. No.	Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision, Erection and Testing	
			Price Escalation	Change in Scope/Design	Inadequate/ Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
	1	1	8									
98		d.1) FH Rain Water D&D System (Sets)			3.70			27.72	3.00	0.54	2.00	0.36
100		Supply of pipe support and hardwares, fabrication, installation of water discharge pipelines				6.40					8.00	1.44

~ 999 ~

Annex-5-1_Pg 19 of 24

C170

Renovation & Modernisation of Ropli H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

Annex-5-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	Equipments Cost				CEA approved rate						Variation
					Indian Component	Foreign Component		Total							
					(Rs. Lakh)	FC	(Eqvt. in Rs. Lakh)	(Rs. Lakh)		Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3	4	5	6	7	8=5+7							
102		e.4) Switchyard drainage system including pumps, starter panel,valve,gates, header pipes, gauges etc. (Sets)	1	34.13	34.13		-	34.13	34.13	25.00	-		15.00	4.500	-8.13
103		e) LP Compressed Air System including pipes and valves											-	-	-
104		e.1) LP Compression skid with seal control panels (Set of 4 nos.)	1	14.66	14.66		-	14.66	14.66	15.40	1.71		17.11	3.080	2.45
105		e.2) LP Air Pipe line & Fittings (Sets)	1	11.48	11.48		-	11.48	11.48	8.98	1.00		9.98	1.80	-1.50
106		f) Spares @5% on item (a) to (e)											-	-	-
107		Spares for item 1.a - Turbine @ 5% (Sets)	1	60.44	60.44		-	60.44	68.96	77.29	6.31		83.60	15.05	14.64
108		Spares for item 1.a.2 - Generator (Sets)	1	206.28	206.28		-	206.28	206.28	156.35	12.71		169.07	30.43	-37.21
109		Spares for item 1.a.2 - Generator Coolers (Sets)	1	23.02	23.02		-	23.02	23.02				-	-	-23.02
110		Spares for item 1.a.3 - Main inlet Valve (Sets)	1	26.68	26.68		-	26.68	26.68	24.01	2.67		26.68	4.80	0.00
111		Spares for item 1.a.4 - Governing System (Sets)	1	56.02	56.02		-	56.02	56.02	36.01	2.94		38.95	7.01	-17.07
112		Spares for item 1.a.5 - Static Excitation System (Sets)	1	15.00	15.00		-	15.00	15.00	31.17	2.55		33.72	6.07	18.72
113		Spare- for cooling water system	1	56.08	56.08		-	56.08	56.08	53.35			53.35	9.603	-2.73
114		Spares for item 1.d.1) - PH Drainage & Dewatering System (sets)	1	29.65	29.65		-	29.65	29.65	30.00	-		30.00	5.400	0.35

~ 667 ~

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

C171

(Rs. in Lakhs)

Annex-5-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision, Erection and Testing	
			Price Escalation	Change in Scope/Design	Inadequate/ Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
	1	2	E									
101		d.4) Switchyard drainage system including pumps, starter panel,valve,pales, header pipes, gauges etc. (Sets)			-9.13						1.50	0.23
102		e) LP Compressed Air System including pipes and valves			-					-		
103		e.1) LP Compressors skid with seal control panels (Set of 4 nos.)			3.45				1.1	0.27	1.50	0.27
104		e.2) LP Air Pipe line & Fittings (Sets)			-1.50					-	3.50	0.63
105					-					-		
106		f) Spares @5% on item 1(a) to 1(e)			-					-		
107		Spares for item 1.a - Turbine @ 5% (Sets)	9.10		9.54			1.64	1.18	0.21		
108		Spares for item 1.a.2 - Generator (Sets)	16.79		-54.00			3.01	2.56	0.45		
109		Spares for item 1.a.2 - Generator Coolers (Sets)			-23.02					-		
110		Spares for item 1.a.3 - Main Inlet Valve (Sets)			0.00					-		
111		Spares for item 1.a.4 - Governing System (Sets)	4.25		-21.52			0.76	0.63	0.12		
112		Spares for item 1.a.5 - Static Excitation System (Sets)	3.72		15.00			0.67	0.49	0.09		
113		Spare- for cooling water system			-2.73				0.62	0.11		
114		Spares for item 1.d.1) - PH Drainage & Dewatering System (sets)			0.35				0.00	0.00	0.00	0.00

C172

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

Annex-5-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	Equipments Cost				CEA approved rate						Variation
					Indian Component	Foreign Component		Total							
					(Rs. Lakh)	FC	(Equv. in Rs. Lakh)	(Rs. Lakh)		Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3	4	5	6	7	8=5+7							
115		Spares for item 1.d.2) - MIV Hall Dry Pit pump (Sets)	1	8.40	8.40		-	8.40	8.40	8.50	-		8.50	1.530	0.10
116		Spares for item 1.d.3) - Raw Water dewatering system (Front & Back Side of PH) (Sets)	1	7.39	7.39		-	7.39	7.39	7.50	-		7.50	1.360	0.11
117		Spares for item 1.e - LP Air System (Sets)	1	1.53	1.53		-	1.53	1.53	1.25	0.14		1.39	0.250	-0.14
118		Spares for Switchyard Drainage System								6.95	-		6.95	1.251	6.95
119													-	-	-
120	2	11 kV 4000 Amps Isolated Phase Bus Duct for Generator - Transformer Connection, including LAVT, NGT and ICT, Surge Protection and Neutral Earthing System (Sets)	4	67.13	268.52		-	268.52	268.52	162.95	40.33		403.28	72.59	134.76

699

C173

(Rs. in Lakhs)

Annex-5-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision, Erection and Testing	
			Price Escalation	Change in Scope/Design	Inadequate/ Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
	1	2	6									
115		Spares for item 1.c.2) - MIV Hall Dry Pit pump (Sets)			0.10					0.00		0.00
116		Spares for item 1.d.3) - Rain Water dewatering system (Front & Back Side of PH) (Sets)			0.11					0.00		0.00
117		Spares for item 1.e - LP Air System (Sets)			-0.14							0.00
118		Spares for Switchyard Drainage System				8.95						
119					-					-		
120	2	11 kV 4000 Amps Isolated Phase Bus Duct for Generator - Transformer Connection, including UAVT, NGT and ICT, Surge Protection and Neutral Earthing System (Sets)			134.76				23.49	0.29	53.02	5.65

Renovation & Modernization of Koyli H. E. Project, (4850 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

Annex-S-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	Equipments Cost				CEA approved rate						Variation
					Indian Component	Foreign Component		Total							
					(Rs. Lakh)	FC	(Equi. in Rs. Lakh)	(Rs. Lakh)		Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3	4	5	6	7	8=5+7							
121		Auxiliary Transformer Cubicle								47.77	1.48		49.25	6.87	49.25
122		Support Structure for IPBD								14.18			14.18	2.55	14.18
123	3	Supervisory Control And Data Acquisition System (SCADA)											-	-	-
124		3.1) Valmet DNA based UCBs, LCB for common Auxiliaries Controls, LCB for Electrical Power Supply Services, LCB for Switchyard Controls, R/O panels for Switchyard controls, R/O panel at Dam & BFV House, HMI, Furnitures, GPS based time synchronization system, and UPS for HMI for 4 Units (Sets)	1	600.00	600.00		-	600.00	600.00	627.41	304.43		781.84	101.73	151.84
125		Mesda connectivity for remote operation of units	LS						-	-	50.00		50.00		50.00
126	a	Unit Control & Protection Panels											-	-	-
127		a) Unit Auxiliary Board (Sets)	4	13.22	52.88		-	52.88	52.88	52.88			52.88	9.52	-
128		b) Generator protection panel (Nos.)	4	45.00	180.00		-	180.00	180.00	179.75	66.57		126.32	58.74	146.32
129	5	[illegible] (Not provided)											-	-	-
130	6	Lubricating Oil and Governor Oil for first filling											-	-	-
131		First filling of Oil of Governor System (Lots)	4	4.63	18.00		-	18.00	18.00	69.64	11.96		81.64	14.70	63.64
132	7	Pressure Shaft Valve (2800 mm Dia)											-	-	-
133		Jetflow door type SS BF Valve and accessories (Nos.)	2	419.04	838.07		-	838.07	838.07	766.11	93.96		838.07	150.85	-

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. In Lakhs)

Annex-S-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision, Erection and Testing	
			Price Escalation	Change in Scope/Design	Inadequate/ Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
	1	2	8									
111		Auxiliary Transformer Cubicle				49.25			11.68	0.58	3.39	0.01
112		Support Structure for IPBD				24.18						
113	3	Supervisory Control And Data Acquisition System (SCADA)			-					-		
114		3.1) Valmet DNA based UCBs, LCB for common Auxiliaries Controls, LCB for Electrical Power Supply Services, LCB for Switchyard Controls, RI/O panels for Switchyard controls, RI/O panel at Dam & EFV House, HMI, Furnitures, GPS based time synchronization system, and LDS for MMI for 4 Units (Sets)	74.04		57.83			12.33	4.74	0.95		
115		Mobile connectivity for remote operation of units				50.00		-	-	-	-	-
116	4	Unit Control & Protection Panels			-					-		
117		a) Unit Auxiliary Board (Sets)			-				2.00	1.36	3.00	
118		b) Generator protection panel (Nos.)	31.84		113.48			0.91	3.05	0.55		
119	5	[illegible] (If provided) (Not provided)			-					-		
120	6	Lubricating Oil and Governor Oil for First filling			-					-		
121		First filling of Oil of Governor System (Lots)	1.64		61.40			0.30	1.49	0.27		
122	7	Pressure Shaft Valve (2800 mm Dia)			-					-		
123		Lattice door type SI of Valve and accessories (Nos.)			0.00							

Renovation & Modernization of Kopili H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

C176

(Rs. in Lakhs)

Annex-5-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./PC)	Equipments Cost				CEA approved cost						Variation
					Indian Component	Foreign Component		Total							
					(Rs. Lakh)	FC	(Equt. in Rs. Lakh)	(Rs. Lakh)		Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3	4	5	6	7	8=5+7							
134		Oil Pressure System (Sets)	2	59.81	119.62		-	119.62	119.62	107.66	11.96		119.62	11.53	-
135		Control System & Instruments for BFV (Sets)	2	48.71	97.42		-	97.42	97.42	87.68	9.74		97.42	17.54	-
136		First Filling oil for Pressure Shaft Valve system (Lots)	1	2.59	2.59		-	2.59	2.59	2.33	0.26		2.59	0.46	-
137	8	Spares for items 2 to 7					-	-	-				-	-	-
138		8.1) Spares for IPBD incl. LAVT etc. @ 2%		2.01	2.01		-	2.01	2.01				-	-	-2.01
139		8.2) Mandatory spares for Valmet DNA Control System as indicated in technical offer	1	20.00	20.00		-	20.00	20.00	42.84	2.97		45.81	8.25	25.81
140		8.3) Spares for Unit Control & Protection Panels @ 3%	1	1.76	1.76		-	1.76	1.76	49.85	4.07		53.91	9.71	52.17
141		8.4) Spares for Pressure Shaft Valve	1	65.26	65.26		-	65.26	65.26	58.73	6.53		65.26	11.75	-
142		Total			20,871.02			20,871.02	20,818.40	19,151.77	1,668.73	-	20,820.49	3,691.89	502.08

Note: In sl. no. 5 above, Generator Circuit Breaker is not provided in Kopili HEP, hence struck out, but not deleted to keep the serial nos as per the CEA Format.

673

Renovation & Modernisation of Kopili H. E. Project, (4X50 MW)
Revised Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

(Rs. in Lakhs)

Annex-5-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision, Erection and Testing	
			Price Escalation	Change in Scope/Design	Inadequate/ Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
	1	2	6									
134		Oil Pressure System (Sets)			0.00				22.46	4.04	136.90	15.48
135		Control System & Instruments for BFV (Sets)			0.00							
136		First Filling oil for Pressure Shaft Valve sytem (Lots)			0.00							
137	8	Spares for Items 2 to 7			-					-		
138		8.1) Spares for IPBD incl. LAVT etc. @ 3%				-2.01				-		
139		8.2) Mandatory spares for Valmet DNA Control System as indicated in technical offer	4.81		21.00			0.87	0.30	0.05		
140		8.3) Spares for Unit Control & Protection Panels @ 3%	5.92		46.25			1.07	0.50	0.09		
141		8.4) Spares for Pressure Shaft Valve			-					-		
142		Total	1,116.07	-	888.41	-1,022.39	-	164.36	316.73	51.58	1,028.46	846.87

Note: In sl. no. 5 above, Generator Circuit Breaker is not provided in KI

C178

(Rs. in Lakhs)

Annexure-II

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./Yr)	Equipment Cost				e.o.e. approved rate in Lacs (Rs.)	Annual Cost Estimate of Mod'n Pr.				Taxes	Variation
					Indian Component	Foreign Component		Total							
					(Rs. Lakh)	FC	(Equiv. in Rs. Lacs)	(Rs. Lacs)		Expenditure upto May'20	Committed Liabilities/Balance	Existent Balance	Total		
	1	2	3	4	5	6	7	8=5+7							
1	1.00	a.1) Generator/ Step Up Transformer Rating 11/220 kV, 60 MVA, Three Phase, Oil Cooled Type(Indi.)	1	999.14	1,999.00		-	1,999.00	1,999.00	2,150.16	450.17		2,600.33	599.26	1,399.84
2		a.2) Three no Generator Transformers	1	18.69	18.69		-	18.69	18.69	18.69	-		18.69	3.36	-0.00
3		b) Generator isolate/tunnel valve (60A monitoring (Rec.)	1	47.75	47.75		-	47.75	47.75		47.75		47.75	8.60	0.00
4	2.00	2nd Auxiliary Transformer (Rating 11/0.433 kV, 0.5 MVA, 3 pairs Core resin dry Type) (Rec.)	2	11.94	47.56		-	47.56	47.56	67.69			67.69	12.18	20.13
5	3.00	c) Station Service Transformer (Rating 11/3.15 kV, 5MVA, 3 Phase, ONAN Type) (Indi.)	1	81.70	81.70		-	81.70	81.70	79.25	2.45		81.70	14.71	-
6		Repairing of damaged 5 MVA transformer								15.90			15.90	2.79	15.90
7		e) Station Service Transformer (Rating 33/0.433 kV, 3.5 MVA, 3 Phase Oil Immersed Rec.)	1	70.29	70.29		-	70.29	70.29	70.29	-	-	70.29	12.65	-
8	4.00	HT / LT Switchgear for Power Supply to PH complex, Pothead Yard, MCC and Dust Silo					-	-					-	-	-
9		a.1) 33 kV Vacuum Circuit Breaker (Indi)	2	4.85	9.70		-	9.70	9.70	15.84		-	15.84	2.85	3.44
10		a.2) 33 kV 400 amps Triple Pole Double Break isolator without E/E (Indi)	2	2.97	5.94		-	5.94	5.94	5.94	-	-	5.94	0.00	-
11		a.3) 33 kV 400 amps Triple Pole Double Break Isolator with E/E (Indi)	1	2.99	2.99		-	2.99	2.99	2.99	-	-	2.99	0.00	-
12		a.4) 33 kV CT, 100-50/1	6	0.99	5.94		-	5.94	5.94	5.94	-	-	5.94	1.06	-
13		a.5) 33 kV PT (Indi)	2	6.84	2.82		-	2.82	2.82	2.82	-	-	2.82	0.51	-
14		a.6) 36 kV Lightening Arrester (Indi)	3	0.79	2.37		-	2.37	2.37	2.37	-	-	2.37	0.43	-
15		a.7) ACSR Dog Conductor (KM)	1	1.16	1.15		-	1.15	1.15	1.15	-	-	1.15	0.21	-

C179

Rs. in lakhs

Annex-S-2

Sr.I. No.	S. No. as per DSR	Item Particulars	Quantity	Reasons of Variation						Transportation and Insurance		Erection and Testing		Source of Original Estimated Price
				Price Difference	Change in Scope/Specifications	Inadequate/ Over Provision	Deletion/Omission	Others	Taxes	Amount	Tax	Amount	Tax	
	1	2	3											
1	1.00	a.1) Deleted for 3MU Up Transformer Rating 21/10/10 MV, 45 MVA, Three Phase, ONAF Type) (Nos.)	1	[illegible]	[illegible]	71.39				100.49	11.50	15.35	4.54	(i) LL Order NO:PCC/SE(CP)/CE/P/VE/KHCP-07/4xx/ dt/4x50/Vol-I/21xx dated 23/12/2020 Subsequent changes mentioned here. Erection Charges included in T/O Offer.
2		a.2) Traction Generator Transformer	1											
3		b) Generator transformer online DGA monitoring (Nos.)	1				0.00							Offer Ref: PTPL/2020-21/P1400/200 dated 02/03/2021
4	3.00	Unit Auxiliary Transformer (Rating 11/0.433 kV, 0.5 MVA, Outdoor Cast resin dry Type) (Nos.)	4	17.67		2.84			1.18	3.02	0.54			Ashoka Electric offer through mail dated 9-10-20
5	0.00	a) Station Service Transformer (Rating 1.63/10 kV, 1MVA, 3 Phase, ONAN Type) (nos.)	1							3.40	0.85			Tarta order NO:PCC/SE(MHD)/CE/P/T-2.05/Kapil/F.2/2021-22/N/4331 dated 29/05/2021
6		Repairing of damaged 0.5MVA transformer					15.19			18.35	2.75			
7		b) Station Service Transformer (Rating 500.415 kV, 1.0 MVA, 3 Phase Oil Fill Type) (Nos.)	1							3.20	0.80			Ranking order NO:PCC/SE(MHD)/CE/P/T-2.05/Kapil/Vol-II/21/2020-21/1754 dated 15/03/2021
8	4.00	HT / LT Switchgear for Power Supply to PH complex, Pumhouse, BPV and Dam Site												
9		a.2) 33 kV Vacuum Circuit Breaker (Sets)	2				3.81							Vingcl order NO:PCC/SE(MHD)/CE/P/VA-21/Kapil.F.1/2020-21/EM dated 03/06/2021
10		a.3) 33 kV 400 amps Triple Pole Double Break Isolator without E/h (Sets)	2											Vingcl order NO:PCC/SE(MHD)/CE/P/VA-21/Kapil.F.1/2020-21/EM dated 03/06/21
11		a.3) 33 kV 600 amps Triple Pole Double Break Isolator with E.Es (Sets)	1											Vingcl order NO:PCC/SE(MHD)/CE/P/VA-21/Kapil.F.1/2020-21/EM dated 03/06/21
12		a.4) 33 kV CT, 10A-5A/1	6							1.03	0.21	0.07	0.25	Vingcl order NO:PCC/SE(MHD)/CE/P/VA-21.5/Kapil.F.5/2020-21/EM dated 09/06/21
13		a.5) 33 kV PT (Sets)	3											Vingcl order NO:PCC/SE(MHD)/CE/P/VA-21/Kapil.F.1/2020-21/EM dated 03/06/21
14		a.6) 33 kV Lightning Arrester (Sets)	9											Vingcl order NO:PCC/SE(MHD)/CE/P/VA-21/Kapil.F.1/2020-21/EM dated 03/06/21
15		a.7) 415V Dog Conductor (km)	1											

C180

(Rs. in Lakhs)

Annex-B-3

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./Nos)	Expenditure Cost				CEA approved cost (as on 30.06.2015) Rs.	Revised Cost Estimate at May'24 Rs.				Taxes	Variation
					Indian components	Foreign Component		Total							
					(Rs Lakh)	FC	(Exec. in Rs. Lakh)	(Rs. Lakh)		Expenditure upto May'24	Committed Liabilities/Balance	Excluded Balance	Total		
	1	2	3	4	5	6	7	8=5+7							
16		a.6) Technical consultancy for 66 kV VCBs, Isolators, CTs, PTs & Lightning Arrestors	1	2.65	2.65	-	-	2.65	2.65	2.65	-	-	2.65	0.00	-
17		4.95 kVA Bus Support insulator with Lexium Shutters (Set)	2	0.60	1.19		-	1.19	1.19	1.19	-	-	1.19	0.01	-
18		a.a) 4 kVA CT, 100-50/5	3	0.96	2.87		-	2.87	2.87	2.87	-		2.87	0.00	-
19		a.9) 33 kV Bus Support insulator along with terminal connector	3	0.58	1.69		-	1.69	1.69	1.69	-		1.69	0.00	-
20		a.10) 33/0.433 kV Transformer Control and protection panel (set)	2	5.00	10.00		-	10.00	10.00	4.35			4.35	0.35	-11.65
21		a.11) 33 kV Incomer Control and protection panel (Nos.)	3	0.00	0.00		-	0.00	0.00	122.00	11.56		134.06	23.33	134.06
22		a.12) 66kVA Service Board for Unit #1 & #2	1	66.11	66.11		-	66.11	66.11	66.11			66.11	11.99	-
23		a.13) 66kVA Service Board for Unit #3 & #4	1	62.42	62.42		-	62.42	62.42	62.42			62.42	11.29	-
24		Supply and delivery of items required for rejuvenization of Remote monitoring system of LT (IDB & LMS) PLC parameters by monitoring / duplicating along with necessary service for the job at Kapili Power Station	-								3.80		3.80	0.30	3.80
25		a.1) Switchyard AC distribution board (Set)	1	4.28	4.28		-	4.28	4.28	3.31	0.33		3.67	0.66	-0.59
26		a.2) 48 Valve AC Distribution board cum meter panel Set)	1	5.09	5.09		-	5.09	5.09	3.31	0.37		3.68	0.68	-1.41
27	3.00	DC Batteries, Battery Charging Equipment, DC Distribution board with Air Switchgear (Rating - V, - AH, E - V, - kW)											-	-	-
28		a.a) 10 kVA Inverter	1	4.56	4.56		-	4.56	4.56	4.54	-		4.54	0.82	-
29		a.7) 220 V DC 100 Amps Thyristor Controlled Charger (set)	1	10.18	10.18		-	10.18	10.18	10.18	-		10.18	1.83	-
30		a.8) 220V 350 AH SP 15 FBS Lead Acid Battery Bank	1	31.80	31.80		-	31.80	31.80	31.80	-		31.80	5.72	-
31		a.4) 220 V, 425 AH PLANTI consisting of 110 nos. cells along with wire, stand and accessories (Set)	1	68.25	68.25		-	68.25	68.25	68.50	-		68.50	12.33	0.25
32		a.5) Automatic Float 125 Amps and Float cum Boost 125 Amp battery charger equipment (Nos)	1	12.11	12.11		-	12.11	12.11	12.00	-		12.00	2.16	-0.11
33		a.6) 110 V DC distribution board (Set)	1	8.85	8.85		-	8.85	1.85	10.71	0.27		10.98	1.40	10.04
34		b) 48 V/200 AH Battery and Charger											-	-	-
35		b.1) Automatic Dual Float cum Boost (50 Amps) Battery Charging Equipment suitable for 48 nos 300AH VRLA battery (Set)	1	4.17	8.33		-	8.33	4.33	13.72			13.72	1.42	1.67
36		b.2) Valve regulated SMF lead acid 48 Nos (24 cells) 300AH battery complete with inter cell, inter row connectors, standard accessories and MS rack (Set)	2	1.86	3.33		-	3.33	1.72						
37		c) 24 V/200 AH Battery and Charger					-	-					-	-	-
38		a.1) Automatic Dual Float cum Boost (300 Amps) Battery Charging Equipment suitable for 24 Volt 200AH PLANTI battery (Set)	1	5.13	10.69		-	10.69	10.69	8.26			8.26	1.48	-2.31

677

EM_Annexure-B-3.Pg 3 of 3

C181

(Rs. in lakhs)

Annex-6-3

Ref. Sl. No.	Sl. No. CEA	Item Description	Quantity	Reasons of Variation						Transportation and Insurance		Erection and Testing		Source of/Original Estimated Price
				Price Escalation	Change in Scope/Design	Inadequate/Less Provision	Application/Escalation	Others	Taxes	Amount	Tax	amount	Tax	
	1	2	3											
16		a.8) Terminal Connectors for 33 kV VCBs, isolators, CTs, PTs & LAs (set)	1											Vinyas order NEEPCO/KHEP/CBP/IV-217/Vinyas P.S/2020-21/934 dated 03/06/20
17		a.9) 33 kV Bus Supporting Insulator with Lateral Disturbance (Set)	1											Vinyas order NEEPCO/KHEP/CBP/IV-217/Vinyas P.S/2020-21/934 dated 03/06/20
18		b.1) 33 kV CT, 200-5A/1	3											Vinyas order NEEPCO/KHEP/CBP/Vinyas P.S./IV-944/2020-21/3780 dated 21/12/20
19		b.2) 33 kV Bus Support Insulator along with terminal connector	3											Vinyas order NEEPCO/KHEP/CBP/Vinyas P.S./IV-944/2020-21/3780 dated 21/12/20
20		a.1) 33kV/0.11 V Insulation Voltage and protection panel (Set-1)	2			-13.85				8.89	0.00			CE TBO offer SOT/KHEP/CBP/045 dated 16/12/2019
21		a.2) 33 kV Incomer control and protection panel (Nos.)	2	14.00		122.68			9.54	1.45	8.56			CE TBO offer SOT/KHEP/CBP/048 dated 16/12/2019
22		d.1) Station Service Board for Unit #1 & #2	1			-				5.90	0.00	4.46	0.71	Bachhas order NEEPCO/KHEP/CBP/Vinyas P.S/IV-388/2020-21/3498 dated 26/03/2021
23		d.2) Station Service Board for Unit #3 & #4	1			-				5.90	0.00	4.46	0.71	Bachhas order NEEPCO/KHEP/CBP/Vinyas P.S/IV-388/2020-21/3498 dated 26/03/2021
24		Supply and delivery of items required for implementation of Remote monitoring system of U1 & U2 & 132 & 33 kV substation by interfacing / duplicating along with renovation/upgradation of the Unit or Vinyas Power Station					3.32					1.19		
25		a.1) Switchyard AC distribution board (Set)	1			-0.19						0.11		Bachhas offer BCPL/CB-20/1003 dated 19/02/2020
26		a.2) 60 kVA AC Distribution board cum starter panel (Set)	1			-1.41						0.11		Bachhas offer BCPL/CB-20/1003 dated 19/02/2020
27	5.00	DC Batteries, Battery Charging Equipment, DC Distribution Board with DC Interlogical Wiring ... ft, ... mt, ... ft, ... mt												
28		a.3) 10 kVA Inverter	1							1.10	0.11	2.92	0.08	Namrup order NEEPCO/KHEP/CBP/KOP-U P.S/IV-389/2020-21/4331 dated 23/03/21
29		a.3) 220 V DC 100 Amps Thyristor Controlled Charger (Set)	1											Namrup order NEEPCO/KHEP/CBP/KOP-U P.S/IV-389/2020-21/4331 dated 23/03/21
30		a.3) 200V 600 Ah C10 TBS Lead Acid Battery Bank	1			-				6.13	0.06			Namrup order NEEPCO/KHEP/CBP/KOP-U P.S/IV-389/2020-21/4331 dated 23/03/21
31		a.4) 220 V, 425AH PLANTE consisting of 110 Nos. cell along with acid, stand and accessories (Set)	1			3.26								Namrup order NEEPCO/KHEP/CBP/KOP/Vinyas-VW-217/220.5-20/1205 dated 03/12/2020
32		a.5) Automatic Float 100 Amps and Float cum Boost 100 amp battery charger equipment (Nos)	1			-0.11								Namrup order NEEPCO/KHEP/CBP/KOP/Vinyas/IV-217/220.9-20/1205 dated 03/12/2020
33		a.6) 220 V DC distribution board (Set)	1			10.06				2.64	0.47	6.17	1.11	Namrup order NEEPCO/KHEP/CBP/KOP/IV-217/2020-20/4295 dated 30/12/2020
34		b.1) 48 V/200 Ah battery and Charger												
35		b.1) Automatic Dual float cum Boost (50 Amps)Station Charging Equipment suitable for 48 Volts 300AH IPLA battery (Sets)	1			1.47						0.39	0.07	Order has been placed for one charger panel, order for one more panel is process. Namrup order NEEPCO/KHEP/CBP/KOP-U P.S/2020-21/1936 dated 19/08/2020
36		b.2) Valve regulated SMF lead acid 48 Volts (24 cells) 300AH battery complete with inter cell, inter row connectors, standard accessories and MS rack. (Sets)	1											Order has been placed for one battery bank, order for one more bank in process. Namrup order NEEPCO/KHEP/CBP/IV-217/Vinyas P.S/2020-21/936 dated 19/08/2020
37		c.1) 24 V/200 AH Battery and Charger												
38		c.1) Automatic Dual float cum Boost (100 Amps) Battery Charging Equipment suitable for 24 Volts 200AH PLANTE Battery Sets)	1			-0.14								Order has been placed for one charger panel, Namrup order NEEPCO/KHEP/CBP/VW-217/Vinyas P.S/2020-21/936 dated 19/08/2020

678

C182

(Rs. in Lakhs)

Annex-G-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./Pc)	Equipments Cost				CEA approved cost vide sl. no. (w.r.t. 01/01/21) Rs.	Revised Cost Estimate at May'24 Rs.				Taxes	Variation
					Indian Components	Foreign Components		Total							
					(Rs. Lakh)	FC	(Euro in Rs. Lakh)	(Rs. Lakh)		Expenditure upto May'24	Committed Liability/Balance	Excess/ Balance	Total		
	1	2	3	4	5	6	7	8 (5+7							
39		1.1) 1 nos 200 Volts 200Ah batteries consisting of 12 cells for each battery (Nos)	2	3.04	6.17		-	6.17	6.17	3.08			3.08	0.86	(3.09)
40	4.08	Diesel Generating Set (Rating 0.442 kV, 710 kVA) (in addition to Construction Power) (Nos.)	2	46.07	92.14		-	92.14	92.14	92.14			92.14	16.59	-
41		Earthing for 750 KVA DG set								3.57			3.57	0.71	3.57
42		200 KVA DG set for Vyasi Hostel								13.85			13.85	2.64	13.85
43	7.00	Control & Power Cables					-	-					-	-	-
44		a) Power Cables (Lot)	1	223.87	223.87		-	223.87	223.87	861.23	7.79		869.04	91.83	395.99
45		b) Control Cables (Lot)	1	364.25	364.25		-	364.25	352.25	438.04	(1.83)		44.617	39.99	79.42
46	8.00	Refurbishment of Cable Racks, Trays, Supporting Structure and accessories (Lot) Cost included in PCE Invoice (Offer)	1	-	-		-	-	-	-			-	-	-
47	9.00	CCTV, Surveillance System & Telecommunication System (e. g. EPABX) including feeder with OFC connectivity and PDF connectivity as back up (Set)	1	24.64	22.64		-	24.64	24.64	44.13	3.85		48.50	8.71	23.87

C183

(Rs. in Lakhs)

Annex-5-3

Ref. Sl. No.	Sl. No. CSR	Item Particulars	Quantity	Reasons of Variation						Transportation and insurance		Erection and Testing		Source of Original Estimated Price
				Price Escalation	Change in Scope/Design	Inadequate/ Over Provision	Addl/Item/Deletion	Others	Taxes	Amount	Tax	Amount	Tax	
	1	2	3											
39		6.3) Lead acid SV Work (Initial battery (consisting of 12 cells for each battery) (Nos)	2			-0.09						0.50	0.13	Order has been placed for one battery Sets, Nominal under NEEPCO/KHEP/C&E/SV-2/159/appli P-1/2020-21/636 dated 29/05/2020
40	6.00	(Diesel Generating Set (Rating 0.4KV/AV, 750 KVA) (In addition to Construction Power) (Nos.)	2							0.50	0.60			Order has been placed for one DG under for one source DG in contract Matrix under NEEPCO/KHEP/C&E/P-1/Misc/appli/2020-21/1430 dated 26/08/2020
41		Earthing for 750 KVA DG set					3.97							
42		250 KVA DG set for Admn Bldg					14.64		1.83			3.00	0.53	
43	5.00	Control & Power Cables												
44		a) Power Cables (LDC)	1			266.94			11.40	0.82	0.41	0.00	0.00	As per Estimate for tender
45		b) Control Cables (LDC)	1			79.23			14.26	1.89	0.34	21.38	3.85	As per Estimate for tender
46	0.00	Refurbishment of Cable Racks, Trays, Supporting Structure and Accessories (LDC) Cost included in PES Erection Offer	1											Included in offer of PES Engineers Pvt. Ltd.
47	5.00	CCTV, Surveillance System & Telecommunication System (Hybrid DVR & Camera Kit with OFC connectivity and PSP connectivity at Back up (Set)	1			23.87				1.63	0.28	12.35	2.26	PK computers BHEL/QL/T1/19/20/155 dated 23/03/2020

C184

(Rs.in Lakhs)

Annex-B-2

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	Equipments Cost				CEA approved cost as on Oct 95 Rs.	Evolved Cost (Jumper as May'24 Pl.				Taxes	Variation
					Indian Component	Foreign Component		Total							
					(Rs. Lakh)	FC	(Equiv. in Rs. Lakh)	(Rs. Lakh)		Expenditure upto May'24	Committed Liabilities/Balance	Excalated Balance	Total		
	1	2	3	4	5	6	7	8=5+7							
48	30.08	a) Ground Mat & Earthing for Switchyard (MT)	10	1.06	10.16		-	10.16	12.24						
49		b) Earthing Tank (Nr)	2	10.34	20.68			20.68	19.68	66.49	0.00		66.49	17.71	66.31
50		c) Earth wire for SY (Rm)	1	1.28	1.28			1.28	1.28						
51	31.00	Commission of PH Complex and Switchyard Eqpt	1	101.34	101.34		-	101.34	101.34	55.00	60.34		115.34	13.54	-73.31
52	32.00	Electrical Workshop (included in S-IC)	-	-	-		-	-	-				-	-	-
53	33.00	Electrical Test Lab & Testing Equipments (Lot)	1	135.00	135.00		-	135.00	135.00	126.78			126.78	20.80	-8.28
54	34.00	Sub-Total (Items 1 to 53)	-	-	3,681.24		-	3,681.24	3,681.24				-	-	
55	35.00	Spares @ 10% on Item 34			110.44		-	110.44	110.44	121.88			121.88	11.94	11.44
		Total			3,791.67		-	3,791.67	3,791.67	5,331.23	300.00	-	5,581.23	1,916.79	1,789.56

	Price as per Gamma HDP 2004 (L)	Updated Price considering Multiplying factor	Price for Kopili PH	
Extension of Supply of Items Cable Racks & Trays	93.84	150.14	13.01	(considering 10% of overcharge) (R
Testing & Lab Instruments	41.91	106.04	121.04	

C185

(Rs. in Lakhs)

Annex-5-2

Appl. in Sch.	Sr. No. CEA	Item Particulars	Quantity	Reasons of Variation						Transportation and Insurance		Erection and Testing		Source of Original Estimated Price
				Price Escalation	Change in Scope/Deviation	Increase/ Over Provision	Additions/Deletion	Others	Taxes	Amount	Tax	Amount	Tax	
	1	2	3											
48	10.00	a) Ground Mat & Earthing for Switchyard (MT)	10			66.21				1.98	0.26	0.65	0.09	DPR of FY2021 vide APERC/MYT/KPS-VSP dated 30/01/2021
49		b) Earthing Flats (km)	1											
50		c) Earth wire for ST (km)	1											
51	11.04	Mobilisation of PH Hammer and Earthmat Grid	1			-34.21			11.26	2.57		12.64	0.83	Lightning technologies estimate received through email dated 23/01/2021
52	12.00	Electrical Testing Lab (included in S.51)												
53	13.00	Electrical Test Lab & Testing Equipments (Lot)	1			0.24				1.27	0.17	0.74	0.13	Price as per existing MTP updated (2009-)
54	14.00	Sub Total (Items 1 to 53)												
55	15.00	Spares @ 3% on item 12				11.44				0.34	0.01	1.35	0.34	
		Total		967.31	190.80	440.42	41.26	-	90.77	340.19	44.77	105.68	15.39	

Price as per Samrang MTP (2009 BU) SS-54 61.81

Estimation of Supply of Items Cable Trunks & Trays Testing & Lab Instruments

C186

Renovation & Modernization of 4X50 MW Kopili PS
Revised Cost Estimates of Electro Mechanical Works
(Auxiliary Mechanical Equipment and Services For Power Station)
(Rs. in Lakhs)
Annex-S-4

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	CEA approved rate at Jan'21 PL	Revised Cost Estimate at May'24 PL					Variation
					Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3							
1	1	Overhauling of Electrical Overhead Travelling Crane for PH (Capacity 150 T) (Lot)	1	42.02	59.81	0.80		59.81	10.77	17.79
2	2	Electrical Overhead Travelling Crane for GIS (Capacity ..... T) (Lot)						-	-	-
3	3	Overhauling of Electrical Overhead Travelling Crane for BFV House (Capacity 40 T) (Lot)	1	11.20	19.58	0.20		19.78	3.56	8.58
4	4	Electric Lifts/ Elevators	1	44.80	18.20	4.55		22.75	4.10	-22.05
5	5	Fire protection, fire detection & alarm system and gas suppression system						-	-	-
6		Fire Water Pumping System (Lot)	1	357.12	65.60	0.00		65.60	11.81	-291.52
7		Fire Hydrant System (Lot)	1	290.69	999.27	0.00		999.27	179.87	708.58
8		MVW Spray System (Lot)	1	76.65	284.15	0.00		284.15	51.15	207.50

683

C187

Renovation & Modernization of 4X50 MW Kopili PS
Revised Cost Estimates of Electro Mechanical Works
(Auxiliary Mechanical Equipment and Services For Power Station)
(Rs. in Lakhs)
Annex-S-4

Ref. Sl No.	Sl. No. CEA	Item Particulars	Quantity	Reasons of Variation						Transportation and Insurance		Erection and Testing	
				Price Escalation	Change in Scope/Design	Inadequate/Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
	1	2	3										
1	1	Overhauling of Electrical Overhead Travelling Crane for PH (Capacity 150 T) (Lot)	1			17.79				3.20	0.58	17.70	3.19
2	2	Electrical Overhead Travelling Crane for GIS (Capacity ..... T) (Lot)									-		
3	3	Overhauling of Electrical Overhead Travelling Crane for BFV House (Capacity 40 T) (Lot)	1			0.58					-	0.13	0.02
4	4	Electric Lifts/ Elevators	1			-22.05				0.79	0.14	1.80	0.32
5	5	Fire protection, fire detection & alarm system and gas suppression system									-		
6		Fire Water Pumping System (Lot)	1			-291.52				0.81	0.15	5.43	0.98
7		Fire Hydrant System (Lot)	1			708.58				10.09	1.81	317.50	57.15
8		MVW Spray System (Lot)	1			207.50				3.45	0.62	28.93	5.21

C188

Renovation & Modernization of 4X50 MW Kopili PS
Revised Cost Estimates of Electro Mechanical Works
(Auxiliary Mechanical Equipment and Services For Power Station)
(Rs. in Lakhs)
Annex-S-4

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	CEA approved rate at Jan'21 PL	Revised Cost Estimate at May'24 PL					Variation
					Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3							
9		HVW Spray System (Lot)	1	150.52	99.91	0.00		99.91	17.98	-50.61
10		IG 541 Fire Suppression System (Lot)	1	72.83	140.04			140.04	25.21	67.21
11		Aspirating Type Smoke Detection System (Lot)	1	60.00	62.53			62.53	11.26	2.53
12		Passive Fire Protection System (Lot)	1	36.00	17.23	0.00		17.23	3.10	-18.77
13		Nitrogen Injection System for Generator Transformers (Lot)	1	102.79	67.21	0.00		67.21	12.10	-35.58
14		Fire Detection and Alarm System (Lot)	1	30.38	89.34	0.00		89.34	16.08	58.96
15		Fire Extinguisher (Lot)	1	2.98	9.00	0.00		9.00	1.62	6.02
16	6	Heating, Ventilation and Air-conditioning (Set)						-	-	-
17		Fresh Air, Ventilation exhaust ventilation system	1	49.01	284.20			284.20	79.56	172.01
18		Variable Refrigerant AC system	1	63.18						
19	7	Potable Water Supply for PH Complex and Pothead Yard (Set)						-	-	-
20	8	Oil Handling Equipment with Pipes, valves, tanks, purifiers (Set)						-	-	-

685

C189

Renovation & Modernization of 4X50 MW Kopili PS
Revised Cost Estimates of Electro Mechanical Works
(Auxiliary Mechanical Equipment and Services For Power Station)
(Rs. in Lakhs)
Annex-S-4

Ref. Sl No.	Sl. No. CEA	Item Particulars	Quantity	Reasons of Variation						Transportation and Insurance		Erection and Testing	
				Price Escalation	Change in Scope/Design	Inadequate/Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
	1	2	3										
9		HVW Spray System (Lot)	1			-50.61				1.21	0.22	42.15	7.59
10		IG 541 Fire Suppression System (Lot)	1			67.21				1.71	0.31	57.55	10.36
11		Aspirating Type Smoke Detection System (Lot)	1			2.53				0.81	0.15	10.05	1.81
12		Passive Fire Protection System (Lot)	1			-16.77				0.21	0.04	17.23	3.10
13		Nitrogen Injection System for Generator Transformers (Lot)	1			-35.58				0.38	0.06	32.31	5.82
14		Fire Detection and Alarm System (Lot)	1			58.96				1.38	0.19	11.22	2.02
15		Fire Extinguisher (Lot)	1			6.02				0.11	0.02	0.79	0.14
16	6	Heating, Ventilation and Air-conditioning (Set)									-		
17		Fresh Air, Ventilation exhaust ventilation system	1			172.01				36.95	10.34	49.00	13.72
18		Variable Refrigerant AC system	1										
19	7	Potable Water Supply for PH Complex and Pothead Yard (Set)									-		
20	8	Oil Handling Equipment with Pipes, valves, tanks, purifiers (Set)									-		

~ 989 ~

C190

Renovation & Modernization of 4X50 MW Kopili PS
Revised Cost Estimates of Electro Mechanical Works
(Auxiliary Mechanical Equipment and Services For Power Station)
(Rs. in Lakhs)
Annex-5-4

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	CEA approved rate at Jan'21 PL	Revised Cost Estimate at May'24 PL					Variation
					Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3							
21		a) 6000 LPH Transformer oil filter machine (Set)	1	18.00	42.63			42.63	7.68	-8.81
22		b) Industrial oil purification system (1000 LPH) along with spares and tool kit	2	33.46						
23	9	Workshop Machines and equipment (Set)	1	112.55				-	-	-112.55
24	10	Sub-Total (Items 1 to 9)		1,554.18				-	-	
35	11	Spares @ 3% on item 10		46.63				-	-	-46.63
		Total		1,600.81	2,257.92	5.55	-	2,263.47	435.84	662.66

Particulars	Rate (Rs. Lakh)
Workshop Equipment for Kameng HEP at 2004 PL	51.59

Note:

In sl. no. 2 above, EOT Crane for GIS not available in Kopili HEP, hence struck out, but not deleted to keep the serial nos as per the CEA Format.

In sl. no. 7 above, Potable water supply is not envisaged in R&M of Kopili HEP, hence struck out, but not deleted to keep the serial nos as per the CEA Format.

~ 687 ~

C191

Renovation & Modernization of 4X50 MW Kopili PS
Revised Cost Estimates of Electro Mechanical Works
(Auxiliary Mechanical Equipment and Services For Power Station)
(Rs. in Lakhs)
Annex-5-4

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Reasons of Variation						Transportation and Insurance		Erection and Testing	
				Price Escalation	Change in Scope/Design	Inadequate/Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
	1	2	3										
21		a) 6000 LPH Transformer oil filter machine (Set)	1			-8.81	-			6.58	1.18		
22		b) Industrial oil purification system (1000 LPH) along with spares and tool kit	2										
23	9	Workshop Machines and equipment (Set)	1				-112.55				-		
24	10	Sub-Total (Items 1 to 9)									-		
25	11	Spares @ 3% on item 10					-46.63				-		
		Total		-	-	821.83	-159.17	-	119.28	87.28	15.80	591.79	111.42

Particulars	Rate (Rs. Lakh)
Workshop Equipment for Kameng HEP at 2004 PL	51.59

Note:

In sl. no. 2 above, EOT Crane for GIS not available in Kopili HEP, hence struck out, but

In sl. no. 7 above, Potable water supply is not envisaged in R&M of Kopili HEP, hence st

C192

Erection & Commissioning Charges_ Erection New

Rs in Lakhs

SL. NO	DESCRIPTION	ERECTION AMOUNT	ERECTION GST VALUE	INSURANCE AMOUNT	INSURANCE GST VALUE	PV AMOUNT	PV GST VALUE	PO REF
1	All Erection and commissioning charges	2919.03	525.4254	165.41	29.7738	216.74	39.0133	1. CE/C&M/T/E/Erection-KHEP/2016/Vol-V/1785 dated 20/09/21 2. NEEPCO/KHPS/C&P/KOPILI P.S./W- 868/VOL-3/2023-24/1052 DTD 18.07.2023 3.NEEPCO/KHPS/C&P/KOPILI/W-868/2023-24/2625 DT.24.11.2023 4.NEEPCO/KHPS/C&P/KOPILI/W-868/2023-24/2687 DT.29.11.2023
	Total	2919.03	525.4254	165.41	29.7738	216.74	39.0133	

1. Inv No.KHEP/2021-22/91 DT.22.12.2021
2. KHEP/2021-22/87 DT.30.01.2022
3. Inv/No. KHEP/2021-22/86 DT.23.05.2022
4. Inv/No. KHEP/2021-22/91 DT.01.03.2022
5. Inv/No. KHEP/2022-23/50 DT.25.03.2023
6. Inv/No. KHEP/2023-24/07 DT.15.06.2023
7. Inv/No. KHEP/2023-24/11 DT.07.06.2023
8. Inv/No. KHEP/2023-24/15 DT.03.07.2023
9. Inv/No. KHEP/2023-24/18 DT.07.07.2023
10. Inv No. KHEP/2023-24/21 DT.21.08.2023
11. Inv No. KHEP/2023-24/20 DT.08.08.2023
12. Inv No. KHEP/2023-24/27 DT.06.09.2023
13. Inv No. KHEP/2023-24/28 DT.18.10.2023
14. Inv No. KHEP/2023-24/38 DT.13.11.2023
15.Inv/No. KHEP/2023-24/39 DT.22.11.2023.
16. Inv/No. KHEP/2023-24/41 DT.18.01.2024
17. Inv/No.KHEP/2023-24/50 Dated.08.03.2024
18. Inv. No. KHEP/2024/25/04 DT.22.06.2024
19. Inv/No. KHEP/2023-24/17 DTD.26.07.2023
20.Inv/No. KHEP/2023-24/38 DATED.22.12.2023.

Note: This value is added to "Erection and Commissioning charges" head under Generating plant and Auxiliary (Sl.no- 3g) of Abstract

~ 689 ~

C193

Renovation & Modernization of 4X50 MW Kopili PS
Revised Cost Estimates of Electro Mechanical Works

Gen_P&A_E&C_Insurance_Annex

Rs in Lakhs

Sl No.	Description	Expenditure upto May' 2024	Balance/Liability	Total	Tax	
1	Erection & Commissioning Insurance	152.86	13.55	166.41	29.95	

C194

Revised Cost Estimate 330 MW KPS at May' 24 PL
(Switchyard and Pothead Yard Equipment and Services)

Annex-S-5 (SWITCHYARD EQUIPMENT)
(Rs. in Lakhs)

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	CEA approved rate at Jan'21 PL	Revised Cost Estimate at May'24 PL					Variation
						Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3	4							
1	1	220 kV Switchyard Equipments including Coupling Capacitors, wave traps, LAs etc.									
2	a)	220 kV, 3150 A SF6 Circuit Breaker (Nos.)	8	16.81	134.48	162.19	10.55		172.74	31.09	38.26
3	b)	Isolator / Pantograph with / without earthing blade (Rating ... kV)								-	-
4		b1) 3-Phase, 245 KV/1250A Centre Break Isolator complete with insulator, base frame and without mechanism box (Mechanically Ganged but without Earth Switch) (Sets)	2	5.23	10.45	10.45			10.45	1.88	-
5		b.2) 3-Phase, 245 KV/1250A Centre Break Isolator complete with insulator, base frame and mechanism box (Mechanically Ganged but without Earth Switch) (Sets)	2	6.36	12.71	12.71			12.71	2.29	-
6		b.3) Mechanism Box Motor operated (MOM Box) for Main 220KV make existing Centre Break Isolator (suitable for both channel & tubular design), type: RC 300 (Sets)	17	1.18	20.11	20.11			20.11	3.62	-
7		b.4) Other items such as contactor, OLR, Aux switches, motor required for repairing of damaged isolator MOM boxes (Lot)	1	2.64	2.64	2.64			2.64	0.48	-

691

Revised Cost Estimate 200 MW KPS at May' 24 PL
(Switchyard and Pothead Yard Equipment and Services)

Annex-S-5 (SWITCHYARD EQUIPMENT)
(Rs. in Lakhs)

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Erection and Testing	
			Price Escalation	Change in Scope/Design	Inadequate/Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
	1	2										
1	1	220 kV Switchyard Equipments including Coupling Capacitors, wave traps, LAs etc.										
2	a)	220 kV, 3150 A SF6 Circuit Breaker (Nos.)			38.26				14.35	2.58	46.25	8.33
3	b)	Isolator / Pantograph with / without earthing blade (Rating ... kV)										
4		b1) 3-Phase, 245 KV/1250A Centre Break Isolator complete with insulator, base frame and without mechanism box (Mechanically Ganged but without Earth Switch) (Sets)							1.48	0.18		
5		b.2) 3-Phase, 245 KV/1250A Centre Break Isolator complete with insulator, base frame and mechanism box (Mechanically Ganged but without Earth Switch) (Sets)										
6		b.3) Mechanism Box Motor operated (MOM Box) for Main 220KV make existing Centre Break Isolator (suitable for both channel & tubular design), type: RC 300 (Sets)							2.17	0.39	6.53	1.18
7		b.4) Other items such as contactor, OLR, Aux switches, motor required for repairing of damaged isolator MOM boxes (Lot)										

C196

Revised Cost Estimate 200 MW KPS at May' 24 PL
(Switchyard and Pothead Yard Equipment and Services)

Annex-S-5 (SWITCHYARD EQUIPMENT)
(Rs. in Lakhs)

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	CEA approved rate at Jan'21 PL	Revised Cost Estimate at May'24 PL					Variation
						Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3	4							
8		b.5) Repairing of 245 kV Isolators (Lot)	1	34.01	34.01	17.55			17.55	2.16	-16.46
9	c)	Current Transformers (Rating 220 kV) (Nos.)							-	-	-
10		c1) Current Transformers without Support Structure	6	4.63	27.80	27.80			27.80	5.00	-
11		c2) Current Transformers with Support Structure	18	4.87	87.62	121.41	10.25		131.66	23.70	44.04
12	d)	Potential Transformers / CVT (Rating 220 kV) (Nos.)							-	-	-
13		d1) 220 kV Potential Transformer with Junction Box	6	7.08	42.48	40.31	4.48		44.79	8.06	2.33
14		d2) 220 kV CVT with Junction Box	9	4.22	37.95	33.43	3.71		37.14	6.69	-0.81
15		CVT mounting structure	4			1.29	0.14		1.43	0.26	1.43
16	e)	Lightning Arrestors (Rating 216 kV) (Nos.)	21	0.80	16.80	25.97	1.82		27.79	5.00	10.99
17	f)	f1) Post Insulator	24	0.20	2.38	8.47	3.05		11.52	2.07	9.15
18		f2) Post insulator structure and terminal connectors	9	0.51	3.03	2.97			2.97	0.53	-0.06

C197

Revised Cost Estimate 200 MW KPS at May' 24 PL
(Switchyard and Pothead Yard Equipment and Services)

Annex-S-5 (SWITCHYARD EQUIPMENT)

(Rs. in Lakhs)

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Erection and Testing	
			Price Escalation	Change in Scope/Design	Inadequate/Over Provision	Addition/Deletio n	Others	Taxes	Amount	Tax	Amount	Tax
	1	2										
8		b.5) Repairing of 245 kV Isolators (Lot)			-16.46				1.06	0.19	7.23	1.30
9	c)	Current Transformers (Rating 220 kV) (Nos.)										
10		c1) Current Transformers without Support Structure							2.82	0.51		
11		c2) Current Transformers with Support Structure			44.04				18.46	3.32	1.13	0.20
12	d)	Potential Transformers / CVT (Rating 220 kV) (Nos.)										
13		d1) 220 kV Potential Transformer with Junction Box			2.33				7.85	1.41	4.82	0.87
14		d2) 220 kV CVT with Junction Box			-0.81				11.67	2.10	7.17	1.29
15		CVT mounting structure				1.43				-	0.23	0.04
16	e)	Lightning Arrestors (Rating 216 kV) (Nos.)			10.99				13.68	2.46	4.41	0.79
17	f)	f1) Post Insulator			9.15				12.58	2.26	3.01	0.54
18		f2) Post insulator structure and terminal connectors			-0.06				0.15	0.03		

694

C198

Revised Cost Estimate 200 MW KPS at May' 24 PL
(Switchyard and Pothead Yard Equipment and Services)

Annex-S-5 (SWITCHYARD EQUIPMENT)

(Rs. in Lakhs)

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	CEA approved rate at Jan'21 PL	Revised Cost Estimate at May'24 PL					Variation
						Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3	4							
19	g)	220 kV Wave Traps	6	6.40	38.38	53.58	5.95		59.53	10.72	21.15
20	2	.... kV GIS Bays (Not provided)			-					-	-
21	3	XLPE Cables (Included in S3)			-					-	-
22	4	Shunt Reactor (Not envisaged)			-					-	-
23	5	Bus Conductors, Hardwares and Insulators			-					-	-
24		a) Zebra Conductor for Bus and for GT to SY (km)	12	8.06	96.70	40.70	4.52		45.22	8.14	-51.48
25		b) Hardware Fittings and Insulators (Set)	24	4.22	101.20	229.07	22.92		251.99	45.36	150.79
26	6	Protection Panels for Bus, Line & Reactor								-	-
27		a) Control, Protection & Relay Panels (Lot)	1	169.60	169.60	288.75	32.08		320.83	57.75	151.23
28	7	DC Battery, Charger and associated equipment (included in S3)			-					-	-
29	8	Fire Protection System (included in S4)			-					-	-
30	9	PLCC Panels	3	39.60	118.80	96.90	10.77		107.69	19.38	-11.14

695

C199

Revised Cost Estimate 200 MW KPS at May' 24 PL
(Switchyard and Pothead Yard Equipment and Services)

Annex-S-5 (SWITCHYARD EQUIPMENT)

(Rs. in Lakhs)

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Erection and Testing	
			Price Escalation	Change in Scope/Design	Inadequate/Over Provision	Addition/Deletio n	Others	Taxes	Amount	Tax	Amount	Tax
	1	2										
19	g)	220 kV Wave Traps			21.15				6.47	1.16	4.73	0.85
20	2	..... kV GIS Bays (Not provided)										
21	3	XLPE Cables (included in S3)										
22	4	Shunt Reactor (Not envisaged)										
23	5	Bus Conductors, Hardwares and Insulators										
24		a) Zebra Conductor for Bus and for GT to SY (km)			-51.48				0.46	0.08		
25		b) Hardware Fittings and Insulators (Set)			150.79				6.45	1.16	28.69	5.15
26	6	Protection Panels for Bus, Line & Reactor										
27		a) Control, Protection & Relay Panels (Lot)			151.23				3.46	0.62	4.47	0.81
28	7	DC Battery, Charger and associated equipment (included in S3)										
29	8	Fire Protection System (included in S4)										
30	9	PLCC Panels			-11.14				3.46	0.62	0.27	0.05

969

C200

Revised Cost Estimate 200 MW KPS at May' 24 PL
(Switchyard and Pothead Yard Equipment and Services)

Annex-S-6 (SWITCHYARD EQUIPMENT)
(Rs. in Lakhs)

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Quantity	Rate (Rs./FC)	CEA approved rate at Jan'21 PL	Revised Cost Estimate at May'24 PL					Variation
						Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
	1	2	3	4							
31	10	Gantry, Foundation for Structures & miscellaneous civil works for other equipment like shield wire, insulators, lightning masts			-					-	-
32		a) 220 kV Tower between GT Yard and SY (nos.)	1	25.47	25.47	68.47			68.47	12.32	43.00
33	11	Fencing & Security (included in Civil works Estimate)			-		-			-	-
34	12	Sub-Total (1 to 11)			982.60						
35	13	Spares @ 3% on item 12			29.48	69.28	5.20		74.48	13.41	45.00
	14	Total			1,812.07	1,334.05	115.44	-	1,449.49	260.91	437.41

C201

Revised Cost Estimate 200 MW KPS at May' 24 PL
(Switchyard and Pothead Yard Equipment and Services)

Annex-S-5 (SWITCHYARD EQUIPMENT)

(Rs. in Lakhs)

Ref. Sl. No.	Sl. No. CEA	Item Particulars	Reasons of Variation						Transportation and Insurance		Erection and Testing	
			Price Escalation	Change in Scope/Design	Inadequate/Over Provision	Addition/Deletio n	Others	Taxes	Amount	Tax	Amount	Tax
	1	2										
31	10	Gantry, Foundation for Structures & miscellaneous civil works for other equipment like shield wire, insulators, lightning masts										
32		a) 220 kV Tower between GT Yard and SY (nos.)			43.00				2.89	0.52	22.85	4.12
33	11	Fencing & Security (included in Civil works Estimate)										
34	12	Sub-Total (1 to 11)										
35	13	Spares @ 3% on item 12			45.00				7.25	1.30		
	14	Total	-	-	415.98	1.43	-		116.71	20.92	141.73	25.51

C 202

Renovation & Modernization of KHPS(4X50 MW)

Revised Cost Estimates of Electro Mechanical Works

(Rs. in Lakhs)

Contingency

Sl. No	Item Particulars	Quantity	CEA approved rate at Jan'21 PL		Revised Cost Estimate at MAY' 24 PL					Variation
				Rate	Expenditure upto MAY' 24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
				79.377						
1	Order for rewinding of 60 HP induction motor of Kopili P.S.	1		0.84	0.84	-		0.84	0.13	
2	Order for rewinding / Repairing of one no. damaged motor of 17.5 HP submersible pump set of Kopili Power Station during restoration of Kopili power station	1		0.29	0.29	-		0.29	0.05	
3	Order for rewinding of 20 HP & 15 HP vertical pump motor of Kopili P.S.	1		0.40	0.40	-		0.40	0.07	
4	Order for rewinding of 15 HP submersible pump motor with fresh copper wire	1		0.17	0.17	-		0.17	0.03	
5	Regularizing order for rewinding/repairing of one no. damaged motor stator of 1.0 HP, Crompton greaves make submersible pump set of Kopili Power Station during restoration of Kopili Power station	1		0.03	0.03	-		0.03	0.01	
6	Rewinding/repairing of 4 nos damaged submersible pump motor of Kopili P.S.	4		0.22	0.88	-		0.88	0.16	
7	Order for Rewinding/ Repairing of one no. damaged Submersible Pump Motor of 17.5 HP/13 KW of Kopili Power Station	1		0.33	0.33	-		0.33	0.06	
8	Order for Rewinding/Repairing of one no. damaged Submersible Pump Motor of 15 HP/11 KW, Crompton Greaves make of Kopili Power Station	1		0.17	0.17	-		0.17	0.03	
9	Regularizing Order for " Rewinding/ Repairing of 5 (Five) numbers of damaged submersible Pump Motor of 17.5 HP, Make: CGL (3 nos) and 15.0 HP, Make: CGL(2) nos of Kopili P.S.	5		0.22	1.09	-		1.09	0.20	
10	Order for " Rewinding/ Repairing of 17.5 HP (1no.), 1.5 HP (2 nos) and 1.0 HP 1(no) Submersible pumps of Kopili Power Station	1		0.43	0.43	-		0.43	0.08	
11	rewinding/ repairing of damaged motor of Kopili P.S.	1		0.49	0.49	-		0.49	0.09	
12	Rewinding/ Repairing of two nos. of 17.5 HP Submersible pump motor sets of Kopili Power Station.	2		0.32	0.64	-		0.64	0.12	
13	Repairing / rewinding of main stator of 15 HP submersible pump motor of Kopili Power Station.	1		0.21	0.21	-		0.21	0.04	
14	Regularizing order for rewinding/repairing of two nos. of (one no of 15 HP & one no. of 17.5 HP) Submersible pump motor sets of Kopili Power Station	2		0.22	0.44	-		0.44	0.08	
15	Supply of Crompton 17.5 HP Openwell submersible Pump set CWPH 17.52 and star delta control panel Starter	1		2.05	2.05	-		2.05	0.37	

C203

Renovation & Modernization of KHPS(4X50 MW)

Revised Cost Estimates of Electro Mechanical Works

(Rs. In Lakhs)

Contingency

Sl. No	Item Particulars							Transportation and Insurance		Supervision of Erection and Testing	
		Reasons of Variation									
		Price Escalation	Change in Scope/Design	Inadequate/Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
1	Order for rewinding of 50 HP induction motor of Kopili P.S.										
2	Order for rewinding / Repairing of one no. damaged motor of 17.5 HP submersible pump set of Kopili Power Station during restoration of Kopili power station										
3	Order for rewinding of 20 HP & 15 HP vertical pump motor of Kopili P.S.										
4	Order for rewinding of 15 HP submersible pump motor with fresh copper wire										
5	Regularizing order for rewinding/repairing of one no. damaged motor stator of 1.0 HP, Crompton greaves make submersible pump set of Kopili Power Station during restoration of Kopili Power station										
6	Rewinding/repairing of 4 nos damaged submersible pump motor of Kopili P.S.										
7	Order for Rewinding/ Repairing of one no. damaged Submersible Pump Motor of 17.5 HP/13 KW of Kopili Power Station										
8	Order for Rewinding/Repairing of one no. damaged Submersible Pump Motor of 15 HP/11 KW, Crompton Greaves make of Kopili Power Station										
9	Regularizing Order for " Rewinding/ Repairing of 5 (Five) numbers of damaged submersible Pump Motor of 17.5 HP, Make: CGL (3 nos) and 15.0 HP, Make: CGL(2) nos of Kopili P.S.										
10	Order for " Rewinding/ Repairing of 17.5 HP (1no.), 1.5 HP (2 nos) and 1.0 HP 1(no) Submersible pumps of Kopili Power Station										
11	rewinding/ repairing of damaged motor of Kopili P.S.										
12	Rewinding/ Repairing of two nos. of 17.5 HP Submersible pump motor sets of Kopili Power Station.										
13	Repairing / rewinding of main stator of 15 HP submersible pump motor of Kopili Power Station.										
14	Regularizing order for rewinding/repairing of two nos. of (one no.of 15 HP & one no. of 17.5 HP) Submersible pump motor sets of Kopili Power Station										
15	Supply of Crompton 17.5 HP Coenwell submersible Pump set CWPH 17.52 and star delta control panel Starter										

C204

Renovation & Modernization of KHPS(4X50 MW)

Revised Cost Estimates of Electro Mechanical Works

(Rs. in Lakhs)

Contingency

Sl. No	Item Particulars	Quantity	CEA approved rate at Jan'21 PL		Revised Cost Estimate at MAY' 24 PL					Variation
				Rate	Expenditure upto MAY' 24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
				79.377						
16	Supply of Crompton 15HP Openwell submersible Pump set OWNH 15.2 and star delta control panel starter	1		1.32	1.32	-		1.32	0.24	
17	Supply of Crompton 15HP Openwell submersible Pump set OWNH 15.2 and star delta control panel starter	1		1.32	1.32	-		1.32	0.24	
18	Supply of Crompton Mini Samudra -1 mini block Pump 1 HP required at Kopili Power Station	1		0.44	0.44	-		0.44	0.08	
19	Supply of G.I. Nipple 25X150 mm, G.I. Riband 25X20 mm and Suction Hose Pipe 25 mm	1		0.08	0.08	-		0.08	0.01	
20	Supply of Suction Hose PVC Pipe 50 mm, PVC Nipple 2"and Cotton Waste required at Kopili Power Station	1		0.39	0.39	-		0.39	0.07	
21	Supply of Check Valve, GI Nipple, GI Socket, PVC Foot Valve etc	1		0.26	0.26	-		0.26	0.05	
22	Supply of Suction Hose PVC Pipe 100 mm, Suction Hose PVC Pipe 50 mm and PVC Nipple 2" required at Kopili Power Station during the rescue / restoration operations after the recent inundation at Kopili Power Station	1		0.84	0.84	-		0.84	0.15	
23	Supply of Folding Bed Cushion at Kopili Power Station site.	1		0.60	0.60	-		0.60	0.11	
24	Regularizing rider for supply of D&H make welding electrodes required for Kopili Valve house during the incident of inundation occurred at Kopili Power Station	1		0.24	0.24	-		0.24	0.04	
25	Reimbursement of 3 (three) nos transportation bill against transportation of various materials from Guwahati to kopili P.S.				-	-		-	-	
26	Supply of Crompton 17.5 HP Openwell Submersible pump, Check Valve, G.I. Nipple etc	1		0.76	0.76	-		0.76	0.14	
27	Supply of Electrical items and hose pipe at Kopili power station	1		0.69	0.69	-		0.69	0.12	

~ 703 ~

EM Contigncy_Pg 3 of 12

Renovation & Modernization of KHPS(4X50 MW)

Revised Cost Estimates of Electro Mechanical Works

(Rs. in Lakhs)

C205

Contingency

Sl. No	Item Particulars							Transportation and Insurance		Supervision of Erection and Testing	
		Reasons of Variation									
		Price Escalation	Change in Scope/Design	Inadequate/Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
16	Supply of Crompton 15HP Openwell submersible Pump set OWNH 15.2 and star delta control panel starter										
17	Supply of Crompton 15HP Openwell submersible Pump set OWNH 15.2 and star delta control panel starter										
18	Supply of Crompton Mini Samudra -1 mini block Pump 1 HP required at Kopili Power Station										
19	Supply of G.I. Nipple 25X150 mm, G.I. Riband 25X20 mm and Suction Hose Pipe 25 mm										
20	Supply of Suction Hose PVC Pipe 50 mm, PVC Nipple 2"and Cotton Waste required at Kopili Power Station										
21	Supply of Check Valve, GI Nipple, GI Socket, PVC Foot Valve etc										
22	Supply of Suction Hose PVC Pipe 100 mm, Suction Hose PVC Pipe 50 mm and PVC Nipple 2" required at Kopili Power Station during the rescue / restoration operations after the recent inundation at Kopili Power Station										
23	Supply of Folding Bed Cushion at Kopili Power Station site.										
24	Regularizing rder for supply of D&H make welding electrodes required for Kopili Valve house during the incident of inundation occurred at Kopili Power Station										
25	Reimbursement of 3 (three) nos transportation bill against transportation of various materials from Guwahati to kopili P.S.										
26	Supply of Crompton 17.6 HP Openwell Submersible pump, Check Valve, G.I. Nipple etc										
27	Supply of Electrical items and hose pipe at Kopili power station										

C206

Renovation & Modernization of KHPS(4X50 MW)

Revised Cost Estimates of Electro Mechanical Works

(Rs. in Lakhs)

Contingency

Sl. No	Item Particulars	Quantity	CEA approved rate at Jan'21 PL	Rate	Revised Cost Estimate at MAY' 24 PL					Variation
					Expenditure upto MAY' 24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
				79.377						
28	Supply of Crompton 17.5 HP Openwell Submersible pump	1		0.52	0.52	-		0.52	0.09	
29	Supply of crompton 1.5 HP openwell submersible pump and suction hose pipe	1		0.66	0.66	-		0.66	0.12	
30	Supply of consumable items	1		0.71	0.71	-		0.71	0.13	
31	Supply of welding electrodes	1		0.83	0.83	-		0.83	0.15	
32	Supply of different items for 33 KV Substation and commissioning of 750 KVA DG Set of Kopili Power Station.	1		0.32	0.32	-		0.32	0.06	
33	Supply of Industrial paint and Brush required for Kopili Power Station	1		0.40	0.40	-		0.40	0.07	
34	Supply of different consumable items required for Kopili Power Station, KHPS	1		0.99	0.99	-		0.99	0.18	
35	Supply of consumables required for 1st servicing of 750KVA DG set along with servicing of the same at Kopili Power Station.	1		₹ 0.30	0.30	-		0.30	0.05	
36	order for "Re-validation and commissioning of 2nd 750 KVA, KOEL make, Silent type Diesel Generator Set and Servicing of in-service 1st 750 KVA KOEL Make, Silent type Diesel Generator set supplied by M/S Mona Generator at 4 X 50 MW Kopili Power Station	1		₹ 1.35	1.35	-		1.35	0.24	
37	Supply of spares required for servicing of 750 KVA DG set along with engagement of service engineer for health assessment & inspection of another KOEL make 750 KVA, Silent type Diesel Generator set	1		₹ 0.73	0.73	-		0.73	0.13	
38	Regularizing order for supply of 39 litres of KOEL care premium lube oil for DG set of Kopili Power Station	1		₹ 0.11	0.11	-		0.11	0.02	
39	Supply and delivery of spares required for servising and carried out servising of 2 (two) nos. of 750 KVA, KOEL make Silent typr Diesel Generator set at Kopili Power Station of KHPS, NEEPCO Ltd., Umrongso	1		₹ 1.93	1.93	-		1.93	0.35	

~ 703 ~

C207

Renovation & Modernization of KHPS(4X50 MW)

Revised Cost Estimates of Electro Mechanical Works

(Rs. in Lakhs)

Contingency

Sl. No	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision of Erection and Testing	
		Price Escalation	Change in Scope/Design	Inadaquate/Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
28	Supply of Crompton 17.5 HP Openwell Submersible pump										
29	Supply of crompton 1.5 HP openwell submersible pump and suction hose pipe										
30	Supply of consumable items										
31	Supply of welding electrodes										
32	Supply of different items for 33 KV Substation and commissioning of 750 KVA DG Set of Kopili Power Station.										
33	Supply of Industrial paint and Brush required for Kopili Power Station										
34	Supply of different consumable items required for Kopili Power Station, KHPS										
35	Supply of consumables required for 1st servicing of 750KVA DG set along with servicing of the same at Kopili Power Station.							₹ 0.05			
36	order for "Re-validation and commissioning of 2nd 750 KVA, KOEL make, Silent type Diesel Generator Set and Servicing of in-service 1st 750 KVA KOEL Make, Silent type Diesel Generator set supplied by M/S Mona Generator at 4 X 50 MW Kopili Power Station							₹ 0.04			₹ 0.10
37	Supply of spares required for servicing of 750 KVA DG set along with engagement of service engineer for health assessment & inspection of another KOEL make 750 KVA, Silent type Diesel Generator set										₹ 0.06
38	Regularizing order for supply of 39 litres of KOEL care premium lube oil for DG set of Kopili Power Station							₹ 0.01			
39	Supply and delivery of spares required for servising and carried out servising of 2 (two) nos. of 750 KVA, KOEL make Silent typr Diesel Generator set at Kopili Power Station of KHPS, NEEPCO Ltd., Umrongso										

~ 704 ~

C208

Renovation & Modernization of KHPS(4X50 MW)

Revised Cost Estimates of Electro Mechanical Works

(Rs. in Lakhs)

Contingency

Sl. No	Item Particulars	Quantity	CEA approved rate at Jan'21 PL		Revised Cost Estimate at MAY' 24 PL					Variation
				Rate	Expenditure upto MAY' 24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
				79.377						
40	Supply of 3 nos DV2.019.02.0.00 NEW NIRA ECU Card required for 750KVA, koel make DG Set.	1		₹ 2.07	2.07	-		2.07	0.37	
41	Order for servicing against commissioning of 750 KVA, KOEL make, silent type Diesel Generator set.	1				-		-	-	
42	Supply of relays & contactors for 150/25 T EOT Crane of Kopili Pwer Station	1		₹ 1.41	1.41	-		1.41	0.25	
43	Supply and delivery of different types of cable required for 150/25T EOT Crane of Kopili Pwer Station	1		₹ 13.91	13.91	-		13.91	2.50	
44	Supply and delivery of stainless steel, seamless pipes of schedule 80 required for kopili power station	1		₹ 0.81	0.81	-		0.81	0.15	
45	Supply of Spares for rectification / repairing of existing water treatment Plant	1			-	-		-	-	
46	AMC of existing water treatment plant installed at Kopili P.S.	1			-	-		-	-	
47	Annual Maintenance Contract (AMC) of existing water treatment plant installed at Kopili Power Station	1			-	-		-	-	
48	Supply of SKF makes Bearings	1		0.14	0.14	-		0.14	0.02	
49	Order for rewinding of 20 HP Submersible motor of Kopili P.S.					-		-	-	
50	Supply and delivery of TATA make Green Battery	2		0.123	0.247	-		0.25	0.04	
51	Supply of HP Laserjet Pro MFP M427fnd Printer cum Scanner	1		0.495	0.495	-		0.50	0.09	
52	Supply of HP desktop PC + Monitor, External Hard Disc and DVD Writer for Kopili P.S.	1		0.490	0.490	-		0.49	0.09	
53	Supply of OFC cable and accessories	1		28.760	28.760	-		28.76	5.18	
54	Supply of 1C x 120 sq.mm Al con cable	1		1.150	1.150	-		1.15	0.21	
55	Supply and Delivery of one no. 3KVA UPS to Kopili Power Station	1		0.769	0.769	-		0.77	0.14	
56	Supply of Distilled water	1		1.495	1.495	-		1.50	0.27	
57	Supply of Electrical Items	1		0.635	0.635	-		0.64	0.11	

~ 705 ~

C209

Renovation & Modernization of KHPS(4X50 MW)

Revised Cost Estimates of Electro Mechanical Works

(Rs. in Lakhs)

Contingency

Sl. No	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision of Erection and Testing	
		Price Escalation	Change in Scope/Design	Inadequate/Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
40	Supply of 2 nos DV2.019.02.0.00 NEW NIRA ECU Card required for 750KVA, koel make DG Set.										
41	Order for servicing against commissioning of 750 KVA, KOEL make, silent type Diesel Generator set.										₹ 0.05
42	Supply of relays & contactors for 150/25 T EOT Crane of Kopili Pwer Station							₹ 0.11			
43	Supply and delivery of different types of cable required for 150/25T EOT Crane of Kopili Pwer Station							₹ 0.85			
44	Supply and delivery of stainless steel, seamless pipes of schedule 80 required for kopili power station										
45	Supply of Spares for rectification / repairing of existing water treatment Plant										
46	AMC of existing water treatment plant installed at Kopili P.S.										
47	Annual Maintenance Contract (AMC) of existing water treatment plant installed at Kopili Power Station										
48	Supply of SKF makes Bearings										
49	Order for rewinding of 20 HP Submersible motor of Kopili P.S.									0.179	0.03
50	Supply and delivery of TATA make Green Battery										
51	Supply of HP Laserjet Pro MFP M427fnd Printer cum Scanner										
52	Supply of HP desktop PC + Monitor, External Hard Disc and DVD Writer for Kopili P.S.										
53	Supply of OFC cable and accessories										
54	Supply of 1C x 120 sq.mm Al con cable										
55	Supply and Delivery of one no. 3KVA UPS to Kopili Power Station										
56	Supply of Distilled water										
57	Supply of Electrical Items										

C210

Renovation & Modernization of KHPS(4X50 MW)

Revised Cost Estimates of Electro Mechanical Works

(Rs. in Lakhs)

Contingency

Sl. No	Item Particulars	Quantity	CEA approved rate at Jan'23 PL		Revised Cost Estimate at MAY' 24 PL					Variation
				Rate	Expenditure upto MAY' 24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
				79.377						
58	supply, delivery, installation, testing & commissioning of Mobile signal amplifier/ booster	1		3.125	3.125	-		3.12	0.56	
	Supply and delivery of Hytera make License free portable Walkie Talkie for 4 X 50 MW Kopili Power Station.	1		0.488	0.488	-		0.49	0.09	
59	Supply of Star Delta Starter, Flexible Hose, Sleeve, Clamp, Main Switch, PVC insulated Aluminium conductors and Industrial Stand Fan required for restoration of Kopili Power Station	1 Lot		3.21	3.210			3.21	0.58	
60	Supply and delivery of 11 KV Indoor termination Kit	1 Lot		2.52	2.520			2.52	0.45	
61	Supply and Delivery of different sizes of RCC Hume pipe required for 4X50MW Kopili P.S.	1 Lot		2.13	2.130			2.13	0.38	
62	Supply of Vertical Adjustable Hydraulic Operated ACB Handling Trolley required for 4X50 MW Kopili Power Station	1 Lot		2.20	2.200			2.20	0.40	
63	Order for Supply of various types of paint, heavy duty lug and welding electrodes required for executing reconstruction and R&M activities of Kopili Power Station.	1 Lot		1.98	1.980			1.98	0.36	
64	Supply of PVC suction Hose pipe and PVC Fitting/ joint required during restoration works of Kopili Power Station	1 Lot		1.34	1.340			1.34	0.24	
65	Supply of welding Machine, Welding cable, Welding Holder and Earthing Holder required at Kopili Power Station.	1 Lot		1.03	1.030			1.03	0.19	
66	Supply of PVC Suction Hose pipes and Socket required for Kopili Power Station after the incident of inundation occurred on 07.10.2019	1 Lot		0.96	0.960			0.96	0.17	
67	Order for supply of DOL Starter for various pump sets required for Kopili Power Station after the incident of inundation occurred at Kopili Power Station	1 Lot		0.72	0.720			0.72	0.13	
68	Supply of GI Anchor Fastener and GI Nut & Bolt for kopili Power Station	1 Lot		0.24	0.240			0.24	0.04	
69	Regularizing order for supply of weather proof tape and CAF gasket required for Kopili Power Station	1 Lot		0.21	0.210			0.21	0.04	
70	Order for supply of OC Lectra Clear to Kopili Power Station	1 Lot		0.13	0.130			0.13	0.02	

~ 107 ~

C211

Renovation & Modernization of KHPS(4X50 MW)

Revised Cost Estimates of Electro Mechanical Works

(Rs. in Lakhs)

Contingency

Sl. No	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision of Erection and Testing	
		Price Escalation	Change in Scope/Design	Inadequate/Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
58	supply, delivery, installation, testing & commissioning of Mobile signal amplifier/ booster										
	Supply and delivery of Hytera make License free portable Walkie Talkie for 4 X 50 MW Kopili Power Station.										
59	Supply of Star Delta Starter, Flexible Hose, Sleeve, Clamp, Main Switch, PVC insulated Aluminium conductors and Industrial Stand Fan required for restoration of Kopili Power Station										
60	Supply and delivery of 11 KV Indoor termination Kit										
61	Supply and Delivery of different sizes of RCC Hume pipe required for 4X50MW Kopili P.S.							0.26	0.05		
62	Supply of Vertical Adjustable Hydraulic Operated ACB Handling Trolley required for 4X50 MW Kopili Power Station							0.52	0.09		
63	Order for Supply of various types of paint, heavy duty lug and welding electrodes required for executing reconstruction and R&M activities of Kopili Power Station.										
64	Supply of PVC suction Hose pipe and PVC Fitting/ joint required during restoration works of Kopili Power Station										
65	Supply of welding Machine, Welding cable, Welding Holder and Earthing Holder required at Kopili Power Station										
66	Supply of PVC Suction Hose pipes and Socket required for Kopili Power Station after the incident of inundation occurred on 07.10.2019										
67	Order for supply of DOL Starter for various pump sets required for Kopili Power Station after the incident of inundation occurred at Kopili Power Station										
68	Supply of GI Anchor Fastener and GI Nut & Bolt for kopili Power Station.										
69	Regularizing order for supply of weather proof tape and CAF gasket required for Kopili Power Station										
70	Order for supply of DC Lectra Clean to Kopili Power Station										

~ 708 ~

C212

Renovation & Modernization of KHPS(4X50 MW)

Revised Cost Estimates of Electro Mechanical Works

(Rs. In Lakhs)

Contingency

Sl. No	Item Particulars	Quantity	CEA approved rate at Jan'21 PL		Revised Cost Estimate at MAY' 24 PL					Variation
				Rate	Expenditure upto MAY' 24	Committed Liabilities/Balance	Escalated Balance	Total	Taxes	
				79.377						
71	Supply of DC lectra Clean & Markin Cloth for Kopili Power Station	1 Lot		0.10	0.100			0.10	0.02	
72	Regularizing order for supply of Abrasive paper (400) & Rubber Gasket (3 mm) required during restoration works of Kopili Power Station	1 Lot		0.06	0.060			0.06	0.01	
73	Order for supply of Spirit to Kopili P.S.	1 Lot		0.03	0.030			0.03	0.01	
74	Supply of Main Switches & Battery Chargers	1 Lot		0.74	0.740			0.74	0.13	
75	Supply, and installation & commissioning of Blue Star make, SS water Cooler along with Voltage Stabilizer required at Kopili Power Station	1 Lot		0.74	0.740	0.74		1.48	0.27	
76	Supply of Stainless Steel Shim of different thickness	1 Lot		0.45	0.450			0.45	0.08	
77	Total				99.00	0.74	-	99.74	17.95	
	Total of contingency		349.89		99.00	0.74	-	120.11		

C213

Renovation & Modernization of KHPS(4X50 MW)

Revised Cost Estimates of Electro Mechanical Works

(Rs. in Lakhs)

Contingency

Sl. No	Item Particulars	Reasons of Variation						Transportation and Insurance		Supervision of Erection and Testing	
		Price Escalation	Change in Scope/Design	Inadequate/Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
71	Supply of DC lectra Clean & Markin Cloth for Kopili Power Station										
72	Regularizing order for supply of Abrasive paper (400) & Rubber Gasket (3 mm) required during restoration works of Kopili Power Station										
73	Order for supply of Spirit to Kopili P.S										
74	Supply of Main Switches & Battery Chargers										
75	Supply, and installation & commissioning of Blue Star make, 55 water Cooler along with Voltage Stabilizer required at Kopili Power Station										
76	Supply of Stainless Steel Shim of different thickness							0.01	0.00		
77	Total							1.85	0.14	0.18	0.24
	Total of contingency										

~ 710 ~

C214

Renovation & Modernization of 4X50 MW Kopili PS
Revised Cost Estimates of Electro Mechanical Works

(Rs. in Lakhs)

Dismantling

Ref. Sl. No	Sl. No. CEA	Item Description	CEA Approved Amount at Jan'21 PL ('In Rs. Lakh)	Revised Cost Estimate at MAY'24 PL				Taxes	Variation
				Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total		
	1	2	3	4	5	6	7		8
1	1	Dismantling of Miscellaneous Equipments including cleaning, and shifting and running and maintenance of pumps, cranes etc.	208.35	895.92	-		895.92	161.17	103.51
2	2	Dismantling of Electro-Mechanical Equipment's of Kopili Power House, including Transportation and Stacking in designated area	398.94						
3	3	Dismantling of Turbines & Auxiliaries, MIVs, Penstock SF Valves and Switchyard Equipments, including Transportation and Stacking in designated area	185.12						
4	4	Support Services in carrying out day to day miscellaneous works related to restoration works	120.00	319.21			319.21	57.46	199.21
		Total Dismantling	912.41	1,215.13	-	-	1,215.13	218.63	302.72

Sub total of Dismantling	912.41	1,215.13	1,215.13	302.72
GST @ 18 %	164.23	161.17	158.33	-5.90
	1076.64	1376.30	1373.46	296.82

~ 711 ~

C215

Renovation & Modernization of 4X50 MW Kopili PS
Revised Cost Estimates of Electro Mechanical Works

(Rs. in Lakhs)

Dismantling

Ref. Sl. No	Sl. No. CEA	Item Description	Reasons of Variation						Source of Original Estimated Price
			Price Escalation	Change in Scope/Design	Inadequate/ Over Provision	Addition/Deletion	Others	Taxes	
	1	2	9	10	11	12	13	14	15
1	1	Dismantling of Miscellaneous Equipments including cleaning, and shifting and running and maintenance of pumps, cranes etc.			103.51				NEEPCO/KHEP/C&P/T-312/Kopili P.S/2019-20/4666 dated 03/02/2020 Extension Order No. NEEPCO/KHEP/C&P/T-312/Kopili P.S/2020-21/96 dated 30/04/2020
2	2	Dismantling of Electro-Mechanical Equipment's of Kopili Power House, including Transportation and Stacking in designated area							NEEPCO/KHEP/C&P/W-368/Kopili P.S/2020-21/1223 dated 06/07/2020
3	3	Dismantling of Turbines & Auxiliaries, MIVs, Penstock BF Valves and Switchyard Equipments, including Transportation and Stacking in designated area							NEEPCO/KHEP/C&P/W-368/Kopili P.S/2020-21/4046 dated 06/01/2021
4	4	Support Services in carrying out day to day miscellaneous works related to restoration works			199.21				NEEPCO/KHEP/C&P/W-368/Kopili P.S/2020-21/4106 dated 06/01/2021
		Total Dismantling	-	-	302.72	-	-		

Sub total of Dismantling
GST @ 18 %

C216

Tools & Plants

(Rs. in Lakhs)

Sl. No	Item Particulars	Quantity	Rate (Rs./FC)	Equipments Cost				CEA approved rate at Jan'21 PL	Revised Cost Estimate at MAY-24 PL				Taxes
				Indian Component	Foreign Component		Total						
				(Rs. Lakh)	FC	(Eqvt. in Rs. Lakh)	(Rs. Lakh)		Expenditure upto May'24	Committed Liabilities/Balance	Escalated Balance	Total	
1	2	3	4	5	6	7	8=5+7						
1	Tools and Plants @ 0.5%of item 2 & 3	1						174.95	103.44	10.51		113.95	15.29
	Total						-	174.95	103.44	10.51	-	113.95	15.29

~713~

C217

Tools & Plants
(Rs. in Lakhs)

Sl No	Item Particulars	Quantity	Variation	Reasons of Variation						Transportation and Insurance		Erection and Testing	
				Price Escalation	Change in Scope/Design	Inadequate/ Over Provision	Addition/Deletion	Others	Taxes	Amount	Tax	Amount	Tax
1	2	3											
1	Tools and Plants @ 0.5%of item 2 & 3	1	-61.00			-61.00				1.50	0.27		
	Total		-61.00	-	-	-61.00	-	-	-	1.50	0.27	-	-

~ 714 ~

C218

RECONSTRUCTION, RENOVATION & MODERNISATION OF KOPILI P.S (4X50 MW), KHPS
Revised Cost Estimate at MAY-2024 Price Level

ABSTRACT OF COST FOR ESTABLISHMENT

Rs in lakhs

SL No.	Item Code	Item Description	CEA vetted Cost at Jan-2021 PL	Revised Cost Estimate at MAY 2024 PL			Variation	Reasons of variation					
				Completed as on MAY-24	Committed Liabilities/ Balance	Total		Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Addition /Deletion	Other causes (specify)	Statutory Levies
1		Establishment Cost (Electro-Mechanical Works)	2,099.34	5,746.44	-	5,746.44	3,647.10				3,647.10		
		TOTAL OF ESTABLISHMENT (Electro-Mech.)	2,099.34	5,746.44	-	5,746.44	3,647.10						

C219

RECONSTRUCTION, RENOVATION & MODERNISATION OF KOPILI P.S (4X50 MW), KHPS
Revised Cost Estimate at MAY-2024 Price Level

ABSTRACT OF COST FOR IDC&FC

Rs in lakhs

SL No.	Item Code	Item Description	CEA vetted Cost at Jan-2021 PL	Revised Cost Estimate at MAY-2024 PL			Variation	Reasons of variation					
				Completed as on MAY'2024	Committed Liabilities/ Balance	Total		Price Escalation	Change in Scope/Design	Inadequate Provision/ over provision	Addition /Deletion	Other causes (specify)	Statutory Levies
1		IDC & FC	5,397.00	11,358.65	-	11,358.65	5,961.65			5,961.65			

C220

RECONSTRUCTION, RENOVATION & MODERNISATION OF KOPILI P.S (4X50 MW)
Revised Cost Estimate at MAY-2024 Price Level

Year-Wise Breakup of IDC & FC

SL No.	Item Description	Finacial Year				
		FY 2021-22	FY 2022-23	FY 2023-24	01.04.2023 to 31.05.2024	Total Amount
1	IDC & FC	₹ 2,86,09,218.00	₹ 28,02,97,380.02	₹ 79,34,77,677.91	₹ 3,34,80,246.41	₹ 1,13,58,64,522.34

Total Amount(Rs in Lacs)	₹ 11,358.65

~ 717 ~

NOTE ON MECHANISM OF APPROVAL
RCE (AT MAY-2024 PL)
KOPILI HYDRO POWER STATION (200 MW), UMRONGSO, ASSAM

During construction some items of Civil, Hydro-Mechanical and Electro-Mechanical works have deviated from original BOQ. Moreover, numbers of items have been executed as extra items as per site requirement in accordance with the relevant clause of the agreement.

The deviated/extra items of Civil, HM and E&M works have been approved by the Competent Authority (Board of Director/Committee of Directors/Director-Tech/Design wing of the Corporation/ Executive Director/Head of Project) following relevant clauses of Departmental Delegation of Power after initiation by the Engineer-in-Charge of the respective work.

The rate(s) for extra works are analyzed following prevailing CWC guidelines and relevant clauses of the contract Agreement prior to obtaining approval of competent authority in terms of DOP provision.

CGM(Tech) & HoP
Kopili Hydro Power Station
NEEPCO Ltd, Umrongso.Assam

TO WHOM IT MAY CONCERN

This is to certify that the quantities shown in the Revised Cost Estimate at Completed Cost at MAY-2024 Price Level under Kopili Hydro Power Station (200 MW), Umrongso, Assam are as per site requirement.

The executed quantities shown in the Revised Cost Estimate are as per actual execution at site which is taken from Measurement Book (MB) and monthly RA Bill.

CGM(Tech) & HoP
Kopili Hydro Power Station
NEEPCO Ltd, Umrongso Assam

TO WHOM IT MAY CONCERN

This is to certify, that the extra items which are included in the Revised Cost Estimate at Completed Cost at MAY-2024 Price Level under Kopili Hydro Power Station (200 MW), Umrongso, Assam as executed up to MAY-'2024.

The approval from competent authority /Head of Project/Engineer-in-charge as required has been obtained for the executed extra items up to MAY-2024.

CGM(Tech) & HoP
Kopili Hydro Power Station
NEEPCO Ltd, Umrongso, Assam

TO WHOM IT MAY CONCERN

This is to certify, that the total provisional value of work executed (Hard Cost) and IDC & FC (Soft Cost) under Kopili Hydro Power Station (200 MW), Distt. Dima Hasao, Assam as on MAY-2024 is **Rs 1227.00 Crores** (*Rupees One Thousand Two Hundred Twenty-Seven Crores*) Only. The detail Head wise break up is given in **ANNEXURE-A**.

17/07/24

Dy. Manager(F), HOF
Kopili Hydro Power Station
NEEPCO Ltd., Assam

CC-5

ISO 9001: 2015
ISO 14001: 2015
ISO 45001: 2018

नॉर्थ ईस्टर्न ईलैक्ट्रिक पावर कॉरपोरेशन लि.
(भारत सरकार का उद्यम)
NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED
(A Government of India Enterprise)
कोपिली जल-विद्युत संयंत्र / KOPILI HYDRO POWER STATION
Office of the CGM(Civil), HSM ,Umrongso,Dima Hasao ,Pin 788931

NOTE ON MECHANISM OF APPROVAL
RCE (AT MAY'2024 PL)
KOPILI HYDRO POWER STATION (200 MW), ASSAM

During construction some items of Civil and Hydro-Mechanical works have deviated from original BOQ. Moreover, numbers of items have been executed as extra items as per site requirement in accordance with the relevant clause of the agreement.

The deviated/extra items of Civil & HM works have been approved by the Competent Authority (Board of Director/Committee of Directors/Director-Tech/Design wing of the Corporation/ Executive Director/Head of Project) following relevant clauses of Departmental Delegation of Power after initiation by the Engineer-in-Charge of the respective work.

The rate(s) for extra works are analysed following prevailing CWC guidelines and relevant clauses of the contract Agreement prior to obtaining approval of competent authority in terms of DOP provision.

11.07.24
(U. BORAH)
Chief General Manager (Tech),
EIC, Hydro Structure Maintenance Div.
Kopili Hydro Power Station, NEEPCO Ltd.,
Distt. Dima Hasao, Umrongso, Assam

CC-6

नॉर्थ ईस्टर्न इलैक्ट्रिक पावर कॉरपोरेशन लि.
(भारत सरकार का उद्यम)
NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED
(A Government of India Enterprise)
ISO 9001: 2015
ISO 14001: 2015
ISO 45001: 2018
कोपिली जल-विद्युत संयंत्र / KOPILI HYDRO POWER STATION
Office of the CGM(Civil), HSM ,Umrongso,Dima Hasao ,Pin 788931

TO WHOM IT MAY CONCERN

This is to certify that the quantities shown in the Revised Cost Estimate at Completed Cost at May'2024 Price Level under Kopili Hydro Power Station (200 MW), Assam are as per site requirement.

The executed quantities shown in the Revised Cost Estimate are as per actual execution at site which is taken from Measurement Book (MB) and monthly RA Bill.

4.07.24 (U.BORAH)

Chief General Manager (Tech),
EIC, Hydro Structure Maintenance Div.
Kopili Hydro Power Station, NEEPCO Ltd.,
Distt. Dima Hasao, Umrongso, Assam

ISO 9001: 2015
ISO 14001: 2015
ISO 45001: 2018

नॉर्थ ईस्टर्न इलैक्ट्रिक पावर कॉरपोरेशन लि.
(भारत सरकार का उद्यम)
NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED
(A Government of India Enterprise)
कोपिली जल-विद्युत संयंत्र / KOPILI HYDRO POWER STATION
Office of the CGM(Civil), HSM ,Umrongso,Dima Hasao ,Pin 788931

CC-7

TO WHOM IT MAY CONCERN

This is to certify, that the extra items which are included in the Revised Cost Estimate at Completed Cost at May'2024 Price Level under Kopili Hydro Power Station (200 MW), Assam as executed up to May'2024.

The approval from competent authority /Head of Project/Engineer-in-charge as required has been obtained for the executed extra items up to May'2024.

4/7/24 (U.BORAH)

Chief General Manager (Tech),
EIC, Hydro Structure Maintenance Div.
Kopili Hydro Power Station, NEEPCO Ltd.,
Distt. Dima Hasao, Umrongso, Assam

नॉर्थ ईस्टर्न इलेक्ट्रिक पावर कॉर्पोरेशन लिमिटेड
(भारत सरकार का उद्यम)
NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
(A GOVERNMENT OF INDIA ENTERPRISE)
कोपिली जल-विद्युत संयंत्र, KOPILI HYDRO ELECTRIC PLANT
उमरोंग्सो- 788931, डिमा हासाव (असम)
UMRONGSO - 788931, DIMA HASAO (ASSAM)
FAX 03670-288240

ISO 9001 : 14001
OHSAS 18001

CC-8

सं / No. NEEPCO/KHPS/CGM(Tech)/KPS/T-63/151A

दिनांक / Date 9/7/2024

TO WHOM IT MAY CONCERN

This is to certify that the quantities shown in the Revised Cost Estimate at Completed Cost at May 2024 Price Level under Kopili Hydro Power Station (200 MW), Assam are as per site requirement.

The executed quantities shown in the Revised Cost Estimate are as per actual execution at site.

9/7/2024

Chief General Manager(E/M),
EIC, Kopili Power Station.
Kopili Hydro Power Station, NEEPCO Ltd.,
Distt. Dima Hasao, Umrongso, Assam

मुख्य महाप्रबंधक (तकनीकी)/CGM (Tech)
कोपिली पावर स्टेशन / Kopili Power Station
उमरोंग्सो, नॉर्थ, उमरोंग्सो (असम)
KHPS, NEEPCO, Umrongso (Assam)

नॉर्थ ईस्टर्न इलेक्ट्रिक पावर कॉर्पोरेशन लिमिटेड
(भारत सरकार का उद्यम)
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उमरोंग्सो- 788931, डिमा हासाव (असम)
UMRONGSO - 788931, DIMA HASAO (ASSAM)
FAX 03670-288240

CC-9

सं / No. NEEPCO/KHPS/CGM(Tech)/KPS/T-03/150A दिनांक / Date 9/7/....2024

NOTE ON MECHANISM OF APPROVAL
RCE (AT MAY 2024 PL)
KOPILI HYDRO POWER STATION (200 MW), ASSAM

During construction some items of Electro-Mechanical works have deviated from original BOQ. Moreover, numbers of items have been executed as extra items as per site requirement in accordance with the relevant clause of the agreement.

The deviated/extra items of Electro-Mechanical works have been approved by the Competent Authority (Board of Director/Committee of Directors/Director-Tech/Design wing of the Corporation/ Executive Director/Head of Project) following relevant clauses of Departmental Delegation of Power after initiation by the Engineer-in-Charge of the respective work.

The rate(s) for extra works are analysed following prevailing CWC guidelines and relevant clauses of the contract Agreement prior to obtaining approval of competent authority in terms of DOP provision.

09/7/2024

Chief General Manager(E/M),
EIC, Kopili Power Station,
Kopili Hydro Power Station, NEEPCO Ltd.,
Distt. Dima Hasao, Umrongso, Assam

ए. जे. बोरदोलोई / A J Bordoloi
मुख्य महाप्रबंधक (तकनीकी)/CGM (Tech)
कोपिली पावर स्टेशन / Kopili Power Station
उमरोंग्सो, डिमा हासाव (असम)
KHPS, NEEPCO, Umrongso (Assam)

नॉर्थ ईस्टर्न इलेक्ट्रिक पावर कॉर्पोरेशन लिमिटेड
(भारत सरकार का उद्यम)
NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
(A GOVERNMENT OF INDIA ENTERPRISE)
कोपिली जल-विद्युत संयंत्र, KOPILI HYDRO ELECTRIC PLANT
उमरॉंग्सो- 788931, डिमा हासाव (असम)
UMRONGSO - 788931, DIMA HASAO (ASSAM)
FAX 03670-288240

ISO 9001 : 14001
OHSAS 18001

CC-10

सं / No. NEEPCO/KHPS/CGM(Tech)/KPS/T-63/24-25/149A

दिनांक / Date 9/7/2024

TO WHOM IT MAY CONCERN

This is to certify, that the extra items which are included in the Revised Cost Estimate at Completed Cost at May 2024 Price Level under Kopili Hydro Power Station (200 MW), Assam as executed up to May 2024 and being executed beyond May 2024 are as per site requirement.

The approval from competent authority /Head of Project/Engineer-in-charge as required has been obtained for the executed extra items up to May 2024 and additional extra items beyond May 2024 shall be executed with the approval of the competent authority.

09/7/2024

Chief General Manager(E/M),
EIC, Kopili Power Station,
Kopili Hydro Power Station, NEEPCO Ltd.,
Distt. Dima Hasao, Umrongso, Assam

ए. जे. बोरदोलोई / A J Bordoloi
मुख्य महाप्रबंधक (तकनीकी)/CGM (Tech)
कोपिली पावर स्टेशन / Kopili Power Station
उमरांगसो, दीमा हसाव (असम)
KHPS, NEEPCO, Umrongso (Assam)

E Bordoloi

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केंद्रीय विद्युत प्राधिकरण
Central Electricity Authority
जल विद्युत अभियांत्रिकी और नवीनीकरण एवं आधुनिकीकरण प्रभाग
Hydro Engineering and Renovation & Modernisation Division

13/2(NEEPCO-Kopili)2021/HE&RM/CEA/ Date 04.06.2021

Director Technical
North Eastern Electric Power Corporation Limited
Brookland Compound
Lower New colony
Shillong – 793003, Meghalaya, India

विषय/ **Subject:** **Detailed Project Report (DPR) for Reconstruction, Renovation & Modernisation of 200(4x50) MW Kopili Power Station Umrongso, Assam- Vetting of cost estimated for Civil & HM works by TCD Division – Reg.**

Ref: 1. M/s NEEPCO Letter No. NEEPCO/D (T)/Tech-39/2020-21/67 dated 06.10.2020
2. M/s NEEPCO Letter No. NEEPCO/GHY/D&E/ T-53/2021-22/22 dated 16.04.2021
3. TCD Division Letter No. CEA-TH-18-11(14)/1/2021-TCD Division dated 04.06.2021

महोदय/ Sir,

Reference is invited to letters cited above regarding examination of Detailed Project Report (DPR) for Renovation and Modernisation of 200 (4x50) MW Kopili Power Station, Umrongso, Assam.

The DPR was forwarded to TCD Division of CEA for examination of Civil and Hydro-Mechanical works portion of DPR along with its Cost Estimate. The same has been examined and the vetted estimated cost of Civil & HM works of the project for RM&U is Rs. 43300.67 Lacs at Jan 2021 PL.

(CEA-1) - 2/37

The details of cost estimate of Civil & Hydro-Mechanical works vetted by TCD Division, CEA is attached.

Encl: As above

भवदीय

(वी सीता रामा राजू)/ V Sita Rama Raju)
निदेशक/ Director

सेवा भवन, आर.के. पुरम-1,नई दिल्ली -110066 टेली/फैक्स: 11-26100497 ईमेल: cehermcea@nic.in वेबसाइट www.cea.nic.in
Sewa Bhawan, R.K. Puram-1, New Delhi-110066 Telefax:011-26100497 Email: cehermcea@nic.in website www.cea.nic.in

(CEA-1) - 3/

File No.CEA-TH-18-11(14)/1/2021-TCD Division

भारत सरकार
GuyGovernment of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
तापीय सिविल अभिकल्प प्रभाग
Thermal Civil Design Division

विषय :- Examination of Reconstruction, R&M proposal of 200 MW Kopili Power Station, Umrongso, Assam - Reg.

संदर्भ :1. HE&RM Letter No. 13/2 (NEEPCO)/2020/ HE&RM/CEA/587 dated 26.10.2020
2. TCD Letter vide File No. CEA-TH-18-11(14) /12021-TCD Division dated 20.01.2021
3. M/s NEEPCO Letter No. NEEPCO/GHY/D&E/ T-53/2020-21/498 dated 29.01.2021
4. This Division Email dated 09.04.2021
5. M/s NEEPCO Letter No. NEEPCO/GHY/D&E/ T-53/2021-22/22 dated 16.04.2021

महोदय,

Kind reference is invited to HE&RM Division Letter under reference-1 enclosing therein M/s NEEPCO Letter No. NEEPCO/D(T)/Tech-39/2020-21/67 dated 06.10.2020 vide which DPR of Reconstruction and R&M proposal of Kopili HEP for the cost of Civil & HM works amounting to Rs. 42855.90 Lakhs was forwarded to this Division for perusal and vetting. The Cost of Civil & HM works has been examined in this Division and observations on the same were communicated to HE&RM Division vide this Division Letter dated 20.01.2021 and email dated 09.04.2021 (under references – 2 & 4) the compliances of which were provided by M/s NEEPCO vide Letter dated 29.01.2021 and 16.04.2021 (under references – 3 & 5) respectively. M/s NEEPCO vide its compliance through letter dated 16.04.2021 revised the cost estimate based on the work order of Civil works awarded by it and submitted it for an amount of Rs. 43759.90 Lakhs. This Division further examined the cost estimate of Rs. 43759.90 Lakhs and vetted it for an amount of **Rs 43300.67** lakhs. The followings has been kept in view while framing the cost estimate : -

- The Quantity of Civil and HM works (copy enclosed as Annexure-I) has been examined and found in order based on the certificate of correctness of quantities submitted by the Developer i.e. M/s NEEPCO Ltd.
- The cost of J-Power Plant Civil works is largely based on the work order awarded by M/s NEEPCO Ltd.
- The Cost of HM works, O-Miscellaneous, M-Plantation, Q-Special T&P and

X-Environment & Ecology is on Lump Basis.

- 'Assam PWD Schedule of Rates (SoR) 2013-14' has been used for Plinth area rates of K-Buildings.
- 'Assam PWD SoR 2018-19 for Roads' has been adopted for the rates of roads under subhead R-Communication.
- The Cost estimate of Rs. 43300.67 Lakhs at January 2021 PL is inclusive of GST.
- The project authority, in the final DPR, may incorporate the items of works to be covered under subhead O-Miscellaneous, M-Plantation, Q-Special T&P and X-environment and Ecology.

A copy of abstract of vetted cost of Civil & HM works of the project is enclosed as Annexure-II for favour of information and further necessary action.

संलग्न - उपरोक्त अनुसार

Validity unknown
Digitally signed by BALESHWAR THAKUR
Date: 2021.06.03 15:58:22 IST

(बालेश्वर ठाकुर)

निदेशक

निदेशक, (एच ई आर एम), के. वि. प्रा., दिनांक 03.06.2021

Copy for information to:

Member (Thermal), Central Electricity Authority, New Delhi

Annexure-II

COST ESTIMATE OF RECONSTRUCTION, R&M OF KOPILI

ABSTRACT OF COST			
S. No.	Item Code	ITEM	Cost at January 2021 PL(In Rs Lakhs)
A		CIVIL AND HM WORKS:	
1		DIRECT CHARGES	
i		I-WORKS	
	A	Preliminary & Pre-Operative Expenses	798.17
	B	Cost of Land	0.00
	C	Civil Works	286.00
	J	Power Plant Civil Works	34426.56
	K	Buildings	248.06
	M	Plantation	80.00
	O	Miscellaneous	600.00
	P	Maintenance during Construction	349.80
	Q	Special Tools & Plants	100.00
	R	Communication	2883.66
	X	Environment and Ecology	50.00
	Y	Losses on stock	87.40
		TOTAL I-WORKS	39908.45
ii		Establishment Charges @ 6% of I-Works	3192.68
iii		Tools & Plants	
iv		Suspense	
v		Receipts and Recoveries (-)	
		TOTAL DIRECT CHARGES	43101.12
2		INDIRECT CHARGES	
i		Capitalisation of Abatement of Land revenue	0.00
ii		Audit & Accounts etc. (0.5% of I-Works)	199.54
		TOTAL INDIRECT CHARGES	199.54
		TOTAL CIVIL AND HM WORKS	**43300.67**

(CEA-1) - 6/

C - WORKS			
Cost provisions for Rehabilitation of HM equipments of Umrong Dam (Gates) :			
Sl.No.	Item	Unit	Quantity
1	Umrong Dam Spillway Radial Gate		
1.1	Refurbishment of 3 nos. of Spillway Radial Gate of size 9.15 m x 7.6 m. Replacement of Rubber Seals alongwith SS hardwares and Providing maintenance platform shall be included complete	LS	-
1.2	Sand/Grit Blasting and Painting of Gate assembly	LS	-
1.3	Modification of Rope drum hoist including replacement of wire rope, motor, brake, bearings, LCPs, Pulleys etc. complete with approach ladder handrails etc.	LS	-
1.4	Painting of RDH and hoist bridge	LS	-
1.5	Installation of Radar Type Water level sensors	LS	-
1.6	Installation of AMMAC System	LS	-
2	Under Sluice Gates		
2.1	Supply, fabrication and installation of 2 sets side guide, sill beam and track assembly made up of Stainless steel complete	LS	-
2.2	Refurbishment of 2 sets of Gate Leaf including, replacement of Rubber Seals alongwith SS hardwares complete	LS	-
2.3	Sand/Grit Blasting and Painting of2 Gates assembly	LS	-
2.4	Overhaulic of Screw Hoist	LS	-
3	Under Sluice Stoplog Gate		
3.1	Supply, fabrication and installation of 2 sets side guide, sill beam and track assembly made up of Stainless steel complete	LS	-
3.2	Refurbishment of 2 sets of Gate Leaf including, replacement of Rubber Seals alongwith SS hardwares complete	LS	-
3.3	Sand/Grit Blasting and Painting of2 Gates assembly	LS	-
3.4	Overhaulic of Screw Hoist	LS	-
4	Adit Gate	LS	-
4.1	Supply, fabrication and installation of Adit Gate of Size 2 m X 2.0 m complete	LS	-
5	Civil work		

(CEA-1) - 7/

Bill of Quantities for Penstock and Steel In Liner Umrong System of Kopili PS

Item No.	Description of Item	Unit	Qnty.
1	(A) PENSTOCK (D/S OF AB-1 TO U/S OF AB-8 INCLUDING REDUCER BEYOND D-LINE)		
1.1	Design, Fabrication, painting (exterior surface) supply, transportation, handling, site storage, erection and commissioning (including provision for all labour, tools and tackles) of Penstock including bend and stiffeners between d/s OF AB-1 to u/s AB-8 Including reducer beyond D-Line on the concrete saddle supports including supply, fabrication and fixing of saddle plates, bearing plates and necessary embedment complete in all respect as per design, drawing and technical specification.	MT	3060
1.2	Design, Fabrication, painting (Exterior Surface), supply, transportation, handling, site storage, erection and commissioning (including provision for all labour, tools and tackles) of Expansion Joints and Manholes including supply, fabrication and fixing of flanges, seals, ladders to approach Manhole, nut & Bolts and others complete in all respect as per design, drawing and technical specification.	MT	100
1.3	Radiographic testing for welded joint as per specification and as directed complete.	RM	1672
1.4	Ultrasonic testing for all field welded joints as per specification and as directed complete.	RM	5670
1.5	Magnetic Particle Test of all field Joints as per specification and as directed complete.	RM	5670
1.6	Hydro Test of each penstock ferrules, bends and reducer after fabrication as per approved details. Supply, fabrication, transportation, handling, fixing, dismantling, sealing etc. of test jig, flanges, bulkhead, pipes, valves and other necessary arrangement required for satisfactory performance of the test as per design, drawing and specification shall be also be included.	MT	3060
2	(B) STEEL IN-LINER (IN HRT AND BETWEEN U/S OF AB-8 TO D-LINE)		
2.1	Design, fabrication, supply, transportation, handling, site storage & erection (including provision for all labour, tools and tackles) of in-liners in the existing steel/concrete sections of HRT and Penstocks including provision of grout holes & plugging, Anti percolation rings and back strip for field welding complete as per design, drawing and technical specification.	MT	2100
2.2	Ultrasonic testing for all field welded joints as per specification and as directed complete.	RM	4940
2.3	Magnetic Particle Test of all field Joints as per specification and as directed complete.	RM	4940

Bill of Quantities (BOQ) for the work of "Civil Works pertaining to restoration of Kopili Hydro Electric Plant, Umrongso, Assa			
Sl. No.	Description of Items	Qnty.	Unit
1	Dewatering		
1.1	Dewatering of Surface/ Underground Construction Sites including all construction works, labour plant and materials necessary to keep the construction sites including all construction works, labour, plant and materials necessary for dewatering. Complete in all respect as per technical specification, drawings and as directed by the Engineer-in-Charge		
1.1.1	Dewatering of Surface Construction Sites including all labour, plant, materials, installation, operation, power supply, maintenance and removal of pumping equipments from site	5000.00	kWHr
1.1.2	Dewatering of Underground Construction Sites including all labour, plant, materials, installation, operation, power supply, maintenance and removal of pumping equipments from site	5000.00	kWHr
2	Dismantling		
2.1	Dismantling of Designated Portion of existing Anchor Blocks with Core Cutting including dismantling of RCC alongwith cutting of Reinforcement & dismantling of PCC covering all labour, materials, equipments and services for successful completion of the works as shown in the construction drawings, as per the technical specification or as directed by the Engineer-in-Charge	4650.00	sqm
2.2	Dismantling of Structures (excluding Dismantling of designated portions of Anchor Blocks with Core Cutting): Dismantling & Demolishing of existing structures including stacking of steel re-bars and disposal of unserviceable materials within 50m lead as per the direction of the Engineer-in-Charge By Manual Means/ Mechanical Means		
2.2.1	Demolishing Brick Work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable materials within 50m lead as per directioin of Engineer-in-Charge In Cement Mortar	50.00	cum
2.2.2	Reinforced Cement Concrete	1700.00	cum
2.2.3	Dismantling Tile Works on Floors & walls laid in cement Mortar including stacking material within 50m lead as per the director of the Engineer-in-Charge		
2.2.3.1	For Thickness of Tiles 10mm to 25mm	800.00	sqm
2.2.3.2	For Thickness of Tiles above 25mm and upto 40mm	1500.00	sqm
2.3	Cost of haulage excluding loading & unloading for removal of dismantled concrete pieces: Katcha Track beyond the initial lead of 50m (Lead = 2.0 km)	3250.00	cum/km
2.4	Chipping of concrete: Chipping of concrete and removal of all loose and friable materials followed by proper cleaning and removal of foreign materials, complete in all respect with all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	6000.00	sqm

~735~

CEA-1-8/

Bill of Quantities (BOQ) for the work of "Civil Works pertaining to restoration of Kopili Hydro Electric Plant, Umrongso, Assam			
Sl. No.	Description of Items	Qnty.	Unit
3	Clearing of Debris		
3.1	Clearing of Debris along the Penstock Alignment: Clearing of Debris including Loading and unloading by mechanical means, transportation & disposal upto the initial lead of 1.0km	7500.00	cum
3.2	Cost of haulage excluding loading & unloading for removal of debris along penstock alignment: Katcha Track beyond the initial lead of 1.0km (Lead = 2.0 km)	7500.00	cum/km
3.3	Clearing of Debris in HRT: Clearing of Debris including Loading and unloading by mechanical means, transportation & disposal upto the initial lead of 1.0km	500.00	cum
3.4	Cost of haulage excluding loading & unloading for removal of debris in HRT: Katcha Track beyond the initial lead of 1.0km (Lead = 2.0 km)	500.00	cum/km
3.5	Clearing of Debris in Power House: Clearing of Debris including loading & unloading by mechanical means, transportation & disposal upto initial lead of 1.0km	200.00	cum
3.6	Cost of haulage excluding loading & unloading for removal of debris along penstock alignment:Katcha Track beyond the initial lead of 1.0km (Lead = 2.0 km)	200.00	cum/km
4	Surface Excavation		
4.1	Excavation using manual means: Excavation using manual means including loading and carrying of excavated material to disposal areas with all lifts & leads upto 1000m	2500.00	cum
4.2	Excavation using mechanical means: Excavation using mechanical means including cutting, loading and carrying of excavated material to disposal areas with all lifts & leads upto 1000m	5500.00	cum
4.3	Cost of haulage excluding loading & unloading for removal of excavated muck: Katcha Track beyond the initial lead of 1.0km	16000.00	cum/km
4.4	Earth/ Sand Filling Earth/ sand Filling in Plinth in layers not more than 150mm thick including necessary carriage, watering, ramming, etc. complete as directed and specified including payment of land compensation, crest royalty, sales tax and other duties and taxes as may be necessary. With earth or silt or sand obtained by head load with lead upto 90m and lift upto 2m	150.00	cum
4.5	Random Backfilling: Backfilling behind complete as per drawings & technical Specification. Complete in all respect with all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-In-Charge	1500.00	cum

Bill of Quantities (BOQ) for the work of "Civil Works pertaining to restoration of Kopili Hydro Electric Plant, Umrongso, Assam			
Sl. No.	Description of Items	Qnty.	Unit
5	Concreting Works		
5.1	Plain Cement Concrete		
5.1.1	Plain Cement Concrete in Anchor Blocks: Plain Cement Concrete in open foundation complete as per drawings & Technical Specification including steel shuttering formwors Without Plasticiser PCC Grade M15	25.00	cum
5.1.2	Plain Cement Concrete along Penstock Alignment: Plain Cement Concrete in open foundation complete as per drawings & Technical Specification including steel shuttering formwors Without Plasticiser PCC Grade M15	28500.00	cum
5.1.3	Plain Cement Concrete in HRT: Plain Cement Concrete complete as per drawings & Technical Specification including steel shuttering formwors Without Plasticiser PCC Grade M20	1000.00	cum
5.1.4	Plain Cement Concrete in Power House		
5.1.4.1	Plain Cement Concrete: Plain Cement Concrete in open foundation complete as per drawings & Technical Specification including steel shuttering formwors Without Plasticiser PCC Grade M15	50.00	cum
5.1.4.2	Plain Cement Concrete: Plain Cement Concrete complete as per drawings & Technical Specification including steel shuttering formwors Without Plasticiser PCC Grade M20	125.00	cum
5.2	Reinforced Cement Concrete		
5.2.1	Reinfored Cement Concrete in Anchor Blocks: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork With Plasticiser RCC Grade M20 Using Concrete Mixer	4000.00	cum

Bill of Quantities (BOQ) for the work of "Civil Works pertaining to restoration of Kopili Hydro Electric Plant, Umrongso, Assam"

Sl. No.	Description of Items	Qnty.	Unit
5.2.2	Reinforced Cement Concrete in Saddle Supports: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork With Plasticiser RCC Grade M20 Using Concrete Mixer	2100.00	cum
5.2.3	2nd Stage Reinforced Cement Concrete in Saddle Supports: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork With Plasticiser RCC Grade M25 Using Concrete Mixer	105.00	cum
5.2.4	Reinforced Cement Concrete in Power House		
5.2.4.1	Reinfored Cement Concrete in Substructure: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork With Plasticiser RCC Grade M20 Using Concrete Mixer	70.00	cum
5.2.4.2	Reinfored Cement Concrete in Superstructure: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork With Plasticiser RCC Grade M20 Using Concrete Mixer	200.00	cum
5.2.4.3	2nd Stage Reinforced Cement Concrete in Grooves/Block Outs: Reinforced Cement Concrete as per drawing and Technical Specification including Steel Shuttering Formwork With Plasticiser RCC Grade M25 Using Concrete Mixer	100.00	cum
6	Steel for Reinforcement		
6.1	Reinforcement in Anchor Blocks: Supplying, fitting and placing TMT conforming to IS: 1786 Fe 500D reinforcemnt including splicing complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	180.00	MT

CEM-1 - 11/

~ 738 ~

Sl. No.	Description of Items	Qnty.	Unit
6.2	Steel Re-ber as Dowels in Anchor Blocks: Supplying, fitting and placing TMT conforming to IS: 1786 Fe 500D reinforcement including splicing complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	95.00	MT
6.3	Reinforcement in Saddle Supports: Supplying, fitting and placing TMT conforming to IS: 1786 Fe 500D reinforcement including splicing complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	40.00	MT
6.4	Reinforcement in Power House: Supplying, fitting and placing TMT conforming to IS: 1786 Fe 500D reinforcement including splicing complete as per drawing and technical specifications TMT- IS 1786 (Fe 500D)	40.00	MT
7	Drilling & Grouting		
7.1	Drilling: Percussion drilling at designated areas as shown in the construction drawings or as directed by the Engineer-in-Charge including casing, driving and permeability tests progressively complete in all respect with all labours, materials, plant, equipments, etc. as per technical specification given, drawing and as directed by the Engineer-in-Charge. Drilling of holes upto 46mm dia	6000.00	rm
7.2	Cement Grouting: Cement Grouting including supply of all materials like cement, sand, admixture, etc.) which are not specifically mentioned but required to complete the job), water testing of holes including supply of all required apparatus complete, labours, plants and equipments, etc. in all respect as per technical specification and as directed by the Engineer-in-Charge	12000.00	per 50kg bags of cement
7.3	Sand required for Grouting	30.00	cum
8	Drilling & Fixing of Steel Rebars as Dowels		
8.1	Providing, Placing and fixing in position Chemical rebar fastners including drilling of holes of specified size and depths upto 250mm into the old concrete, cleaning holes, placing chemicals inside the holes and fixing reinforcement bars all complete as per specification or as directed by the Engineer-in-Charge in locations indicated in the Construction Drawings		
8.1.1	20mm dia re-bar fastners	30000.00	Nos
9	Non- Shrink Grouting		
9.1	Non- Shrink Grouting: Providing & injecting approved grout in proportion recommended by the manufacturer at location as directed by the Engineer-in-Charge by suitable gun/pump at required pressure including cutting of nipples after casing, etc. complete as per the technical specification or as directed by the Engineer-in-Charge		

~ 739 ~

CEA-(1) - 12/

Sl. No.	Description of Items	Qnty.	Unit
9.1.1	Stirred mixed non shrink cementitious grout of approved make	1700000.00	kg
10	**Concrete Waterproofing**		
10.1	Providing, applying "XYPEX" Concrete Water Proofing & Durability Enhancement by Crystallization to be supported by at least two International Test Reports showing clear Scanning Electron Microscopic (SEM) Photographs of desified and mature crystals forming to plug all the capilary tracks and pores of the concrete permanently and permeability test as per IS: 720 conducted by CBRI. The concrete should not absord water more than 0.5 grams and not more than 1mm from the concrete surface. The product to be listed in ICC-ES-EVALUATION REPORT INDEX January 2009. The treatment to be carried out on the concrete surfaces as per manufacturer's specification and as directed by the Engineer-in-Charge. The treatment to be carried out on the concrete surfaces including cleaning of all RCC surfaces as per manufacturer's specification/ datasheet. The application to be carried out in two coats with coverage rate of 0.8kg per coat	2000.00	sqm
11	Epoxy based Bonding Agent		
11.1	Supplying, mixing and applying a Epoxy resin based bonding agent of reputed make for proper bond of old to new concrete	3000.00	sqm
12	**Masonry and Allied Works**		
12.1	Stone Work Stone Masonry Works in Cement Mortar 1:3 complete in all respect as per construction drawings and technical specification		
12.1.1	Random Rubble Masonry	500.00	cum
12.2	Brick Work		
12.2.1	230mm thick Brick Wall in cement mortar with 1st class brick including racking out joints and curing complete as directed in structure		
12.2.1.1	In Substructure upto plinth level including dewatering , if necessary		
a)	In Proportion 1:4	200.00	sqm
12.2.2	1st Class Brick Nogged Wall in cement mortar including racking out joints and curing complete as per technical specification and as directed by the Engineer-in-Charge		
12.2.2.1	112mm Thick Brick Wall		
a)	In cement mortar in proportion 1:4 (1 cement: 4 sand)	600.00	sqm
12.3	Providing and laying 25mm thick Damp Proof Course with cement concrete in prop 1:1.5:3 with graded stone aggregate of 10mm down nominal size including providing approved damp proof admixture in proportion as recommended by the manufacturer including curing, etc. complete in all respect as per the technical specification and as directed by the Engineer-in-Charge	75.00	sqm

~ 740 ~

CENT-I - 13

Sl. No.	Description of Items	Qnty.	Unit
12.4	Plinth Protection Works		
12.4.1	Providing Plinth Protection with Bricks flat laid in cement mortar 1:4 and finished with 15mm thick cement plaster in prop. 1:2 with a floating coat of neat cement finish	150.00	sqm
12.4.2	Providing drain with Cement Concrete (1:3:6) 10cm thick sides 10cm thick bed over brick flat soling including 15mm thick cement plastering in prop 1:3 finished with a floating coat of cement slurry as directed with necessary shuttering for sides and earth work in excavation of foundation trenches and refilling sides after completion of work etc. as specified. 300mm wide and average 250mm deep with bed slope 1 in 150 with initial depth of 100mm	500.00	rm
13	Plastering Works		
13.1	Cement Plaster in Fine Sand: Cement Plaster in Single Coat including arises or rounded angles not exceeding 80mmgirth and finished even and smooth including curing complete as per technical specification and as directed by the Engineer-in-Charge		
13.1.1	12 mm Thick Cement Plaster of Mix 1:4 (1 Cement: 4 Fine Sand)	1800.00	sqm
13.1.2	15 mm Thick Cement plaster on the rough side of single or half brick wall of mix 1:4 (1 Cement: 4 Fine Sand)	350.00	sqm
13.1.3	6mm Thick Plaster of Mix 1:3 (1 Cement: 3 Fine Sand)	200.00	sqm
13.1.4	Cement Plaster with a Floating Coat of Neat Cement		
13.1.4.1	15 mm Thick Cement Plaster finished with a floating coat of neat cement of mix 1:3 (1 Cement : 3 Fine Sand)	100.00	sqm
14	Finishing Works		
14.1	Brick Soling: Providing Soling in Foundation and under floor with stone/ best quality picked Jhama Brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete in all respect as per the technical specification and as directed by the Engineer-in-Charge. Brick on Flat Soling	200.00	sqm
14.2	Floor Finishing Works		
14.2.1	Vitrified Tiles		

CEA-I-14/

Sl. No.	Description of Items	Qnty.	Unit
14.2.1.1	On Floor: Providing Vitrified Floor Tiles of approved quality of specified size, shape and thickness not less than 18mm on floors over 15mm thick base of cement mortar in prop 1:3 (1 cement: 2 coarse sand) including cutting where necessary finished with flush pointing with Fix-A-Tile/ White Cement Slurry mixed with approved pigment to match the shade of the tiles, complete at all levels as specified in the technical specification and as directed by the Engineer-in-Charge Deluxe Range: Of Size 1200mm x 1600mm and above	200.00	sqm
14.2.1.2	On Skirting: Providing Vitrified Floor Tiles of approved quality of specified size, shape and thickness not less than 18mm on skirting over 15mm thick base of cement mortar in prop 1:3 (1 cement: 2 coarse sand) including cutting where necessary finished with flush pointing with Fix-A-Tile/ White Cement Slurry mixed with approved pigment to match the shade of the tiles, complete at all levels as psecified in the technical specification and as directed by the Engineer-in-Charge Deluxe Range: Of Size 1200mm x 1600mm and above	100.00	sqm
14.2.2	Ceramic Tiles		
14.2.2.1	On Walls: Providing polished Ceramic Wall Tiles of approved quality, size, shape and thickness not less than 8mm on walls and skirtings over cement mortar bed 10mm thick in prop. 1:3 (1 cement: 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-a-Tile/ White Cement Slurry mixed with approved pigment to match the shade of tiles complete as all levels as specified in the technical specification and as directed by the Engineer-in-Charge Deluxe Range: Of Size 300mm x 450mm and above	590.62	sqm
14.2.3	Anti- Skid Tiles		
14.2.3.1	On Floor: Providing Anti Skid Tiles of approved quality size, shape and thickness not less than 8mm on floor over a cement mortar bed of 15mm thick in prop 1:3 (1 cement: 3 coarse sand) approved make fix with Fix-a_Tile/ White Cement complete at all level as specified in the technical specification and as directed by the Engineer-in-Charge Vitrified: Executive Range- 2 (Size 600mm x 600mm and above)	200.00	sqm

CEA-1-15/

~742~

Sl. No.	Description of Items	Qnty.	Unit
14.2.3.2	On Skirting: Providing Anti Skid Tiles of approved quality size, shape and thickness not less than 8mm on floor over a cement mortar bed of 15mm thick in prop 1:3 (1 cement: 3 coarse sand) approved make fix with Fix-a_Tile/ White Cement complete at all level as specified in the technical specification and as directed by the Engineer-in-Charge Vitrified: Executive Range- 2 (Size 600mm x 600mm and above)	50.00	sqm
14.2.4	Granite Flooring		
14.2.4.1	Providing Polished Granite Tiles of approved quality, size shape and thickness not less than 18mm on floors, skirtings, risers and treads of steps over 15mm thick base of cement mortar in prop 1:3 (1 cement: 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-a-Tile/White Cement Slurry mixed with approved pigment to match the shade of tiles complete at all levels as specified in teh technical specification and as directed by the Engineer-in-Charge		
a)	With Fix-a-Tile	250.00	sqm
b)	With White Cement	250.00	sqm
14.2.5	Metallic Hardner/ Ironite Flooring		
14.2.5.1	Providing & laying 65mm thick CC Floor with metallic concrete hardner topping under layer of 50mm thick cement concrete 1:2:4 (1 Cement: Coarse Sand: 4 Coarse Aggregate of 20mm & down) and top layer of 15mm thick of metallic cement hardner consisting of mix 1:2 (1 cement hardner mix 2 stone aggregate 6mm and down) by volume with which metallic hardening compound of approved quality is mixed in the ratio of 4:1 (4 parts of cement: 1 part of metallic floor hardening compound of approved quality by weight) including finishing with curing complete as directed	400.00	sqm
14.2.6	Acid/ Alkali Resistant Tiles		
14.2.6.1	Providing and fixing 10mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resistant mortar bedding and joints filled with acid and/or alkali resistant cement as per IS: 4457, complete as per the direction of the Engineer-in-Charge		
a)	In flooring on a bed of 10mm thick mortar 1:4 (1 acid proof cement: 4 coarse sand) Acid and Alkali Resistant Tiles	300.00	sqm
b)	In dado/ Skirting on 12mm thick mortar 1:4 (1 acid proof cement: 4 coarse sand) Acid and Alkali Resistant Tiles	300.00	sqm
14.2.7	Epoxy Flooring		
14.2.7.1	Providing and applying normal setting, self levelling epoxy modified cementitious floor topping Sikafloor 81 EpoCem of Sika (India) Ltd. or equivalent using trowel followed by applying self smoothing epoxy floor coating Sikafloor 261(S) of Sika (India) Ltd./ Dr. Sealkit EPU Floor Self L (Asian Chemicals)/ MASTERTOP 542 ECC of BASF or equivalent using serrated trowel and rolled with a spiked nylon roller after proper surface preparation and application of a priming coat of Sikafloor 80 Primer or equivalent as specified and directed by the Engineer-in-Charge	1250.00	sqm

CEA-1-16/

Sl. No.	Description of Items	Qnty.	Unit
14.3	Door, Windows & Ventilator		
14.3.1	Aluminium Doors		
14.3.1.1	Providing, fitting and fixing anodised aluminium framed glazed doors with anodised aluminium frame made of 100mm x 45mm x 2.5mm section of approved brand with door style of size 88mm x 45mm x 2.5mm, top rails 50mm x 45mm x 2mm, lock rails 100mm x 45mm x 2mm and bottom rails 100mm x 45mm x 2.5mm fitted with glazing clip, special type rubber gasket complete including hydraulic floor spring, pivot, tower bolt in each leaf, aluminium door handle, lock angles, cleat, etc. complete as specified and directed by the Engineer-in-Charge at all levels including cost of Glass & Glazing		
a)	6mm Clear Glass	60.00	sqm
b)	5mm Frosted Glass	00.00	sqm
14.3.1.2	Providing and fixing anodised aluminium frame double leaf doors of approved brand with styles size 45mm x 48mm x 3.2mm, top rails 50mm x 45mm x 2.5mm, lock rails 48mm x 45mm x 2.5mm, bottom rails 100mm x 45mm x 2.5mm fitted with tapper clips of size 20mm x 15mm x 1.2mm complete with automatic floor mounted door closure, butterfly type handles, special cylindrical lock, concealed type aluminium tower bolt, neoprene dryset rubber gasket, door felt gasket, etc. complete in all respect as directed by the Engineer-in-Charge at all levels including cost of Glass & Glazing		
a)	Double Leaf Doors		
i.	5mm thick plain forsted glass	100.00	sqm
ii.	6mm thick clear glass	100.00	sqm
14.3.1.3	Providing and fixing anodised aluminium framed single leaf door of approved brand with styles 45mm x 48mm x 3.2mm, top rails 50mm x 45mm x 2.5mm, lock rails 48mm x 45mm x 2.5mm, bottom rails 100mm x 45mm x 2.5mm fitted with tapper clips of size 20mm x 15mm x 1.2mm complete with automatic hydraulic mounted door closure, butterfly type handles, special cylindrical locks, concealed type tower bolt, neoprene dryset, rubber gasket, etc. complete as directed by the Engineer-in-Charge as all levels including cots of Glass & Glazing		
a)	6mm clear glass	100.00	sqm
b)	5mm plain frosted glass	100.00	sqm
14.3.2	Aluminium Windows & Ventilators		
14.3.2.1	Providing, fitting and fixing anodised aluminium windows and ventilators of standard sections of approved brand without horizontal glazing bars joints mitred and welded (manufactured to relevant IS specifications) fitted with 6mm x 3.15mm lugs 100mm long embedded in CC Blocks 150mm x 100mm x 100mm in 1:3:6 mix including providing and fixing handles, friction stays, joining cleat, bolting device, locking arrangement, spring catch as required complete as specified and directed for all levels including cost of Glass & Glazing		
a)	Side Hung and Top Hung Windows and Ventilators		
i.	6mm clear glass	800.00	sqm

Sl. No.	Description of Items	Qnty.	Unit
ii.	5mm frosted glass	30.00	sqm
b)	Fixed windows and ventilators		
i.	6mm clear glass	35.00	sqm
ii.	5mm frosted Glass	25.00	sqm
14.3.3	Steel Doors		
14.3.3.1	Providing and fixing 1mm thick MS Sheet door with frame of 40x40x6mm angle iron and 3mm MS Gusset Plates at the junctions and corners, all necessary fittings complete including applying a priming coat of approved steel primer		
a)	Using MS Angles for 40x40x6mm for diagonal bracings	10.00	sqm
14.3.4	PVC, FRP Doors & Door Frames		
14.3.4.1	Providing, fitting and fixing Syntex PVC Door frame made out of extruded PVC section in an overall size of 50mm x 60mm having multi chamber cross section with maximum wall thickness of mm, +0.3mm with special polymeric reinforcement having an overall size of 30mm x 25mm width, 150mm length at hardware location. The corner joints shall be either mitre cut and welded or joined by means on concealed cleats with necessary screws fittings	20.00	rm
14.3.4.2	FRP Frame: Providing & Fixing of factory made FRP Door Frame having three legged of cross section 90mm x 45mm having single rebet of 32mm x 15mm to receive shutter of 30mm thickness. The laminate door frame moulded with fire retardant grade unsaturated polyster resin and chopped mat. Door Frame Laminate and shall be filled with suitable wooden block in all the three legs the frame shall be coverde with covered glass from all sides. MS Stay shall be provided at the bottom to steady the frame	40.00	rm
14.3.4.3	Providing, fitting and fixing PVC Door Shutters of 37mm (Single Panel Seamless Finish) of Syntex make, at all levels made o extruded sections in the configuration of "A". The overall dimension is 37mm x 90mm, with usual provess variation having a wall thickness of 2mm with a variation of +0.03mm provided with all plastic reinforcement to avoid rusting. The shutter frame is mitred and joined at the corners by means of stainless steel screws. The corners of the frame are being reinforced by polymeric reinforcement to the size 125mm x 250mm and the lock rail is reinforced by 45 x 18 x 255 size reinforcement	20.00	sqm
14.3.4.4	FRP Flush Door: Supplying & fixing of factory made 30mm thick FRP Panelled Door shutter of required colour made with fire retardant grade unsaturated polyster resin, moulded to 3mm thick FRP laminate for forming hollow rails and styles, with wooden frame & suitable blocks of seasoned wood inside at required places for fixing, cast monolithically with 5mm thick FRP laminates for panel and conforming to IS: 14856- 2000 including fixing to frames complete as per the direction of the Engineer-in-Charge	40.00	sqm
14.3.5	Door & Window Fittings		
14.3.5.1	Providing aand fixing mild steel round holding down bolts with nuts and washer plates complete	100.00	kg

CEA-1 -18/

Sl. No.	Description of Items	Qnty.	Unit
14.3.5.2	Providing and fixing bolts including nuts & washers complete	200.00	kg
14.3.5.3	Providing and Fixing MS Rivets of sizes in position	200.00	kg
14.3.6	Electro Coloured Iron Fittings Supplying, itting, fixing electro coloured iron fittings of approved make, reasonably smooth, free from sharp edges and corners, flaws and other defects and with counter sunk holes including necessary screws etc. complete		
14.3.6.1	Sliding Door Bolts		
a)	300mm x 16mm	30.00	each
b)	250mm x 16mm	20.00	each
14.3.6.2	Tower Bolts		
a)	300mm x 10mm	15.00	each
b)	250mm x 10mm	10.00	each
14.3.6.3	MS Door handles		
a)	100mm	10.00	each
b)	150mm	10.00	each
14.3.6.4	MS Butt Hinge Heavy Type		
a)	50mm x 40mm x 2.5mm	20.00	Pair
b)	75mm x 60mm x 3.15mm	20.00	Pair
14.3.6.5	MS Double Acting Spring Hinge		
a)	125mm	10.00	Pair
b)	150mm	10.00	Pair
14.3.6.6	Mortice Lock Vertical Type Aldrop within Built Lock- 6 Lever	50.00	Set
14.3.6.7	Door Closure & Floor Spring Providing, fitting and fixing Door Closer of various type UL listed and fire rated good quality depending on the door specification and as directed by the Engineer-in-Charge		
a)	Heavy Duty Door Closer (Size 180mm x 65mm x 64mm)	20.00	each
b)	Concealed Door Closer (230mm x 76.5mm x 30.5mm)	20.00	each

Sl. No.	Description of Items	Qnty.	Unit
14.3.6.8	Providing, fitting and fixing Floor Spring of varicus weight & type UL listed and fire rated good quality depending on the floor specification and as directed by the Engineer-in-Charge		
a)	Heavy Duty Floor Spring D100 (Size 274mm x 97mm x 40mm)	10.00	each
b)	Fire rated Floor Spring B803/ B804 (Size 307mm x 109mm x 40mm/ 307mm x 109mm x 40mm)	20.00	each
14.3.7	Brass Fittings Supplying, itting, fixing brass from fittings of approved make, reasonably smooth, free from sharp edges and corners, flaws and other defects and with counter sunk holes including necessary screws etc. complete		
14.3.7.1	Sliding Door Bolts		
a)	300mm x 16mm	30.00	each
b)	250mm x 16mm	20.00	each
14.3.7.2	Tower Bolts		
a)	300mm x 10mm	15.00	each
b)	250mm x 10mm	10.00	each
14.3.7.3	Door Handles		
a)	100mm	10.00	each
b)	150mm	10.00	each
14.3.7.4	But Hinge		
a)	125mm x 50mm x 4mm	20.00	Pair
b)	100mm x 50mm x 4mm	20.00	Pair
14.3.7.5	Spring Hinge		
a)	125mm	10.00	Pair
b)	150mm	10.00	Pair
14.3.7.6	Morticed Lock Vertical Type 75mm	30.00	each

CEA.1)-29/

Sl. No.	Description of Items	Qnty.	Unit
14.3.8	Rolling Shutter Supplying and fixing rolling shutters of approved make, made of required size MS Laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shafts with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454- Part 1 and MS Top Cover of required thickness for rolling shutters		
14.3.8.1	80 x 1.25mm MS Laths with 1.25mm thick top cover	100.00	sqm
14.3.8.2	Providing & Fixing Ball Bearing for Rolling Shutter	20.00	each
14.3.8.3	Extra for providing mechanical device chain and crank operation for operating rolling shutters Exceeding 10 Sqm in area	80.00	sqm
14.4	Painting Works		
14.4.1	Construction of chamber for 100mm sluices valve: Providing two coats of JK wall Putty (White Cement based putty for Concrete/ Mortar walls and ceiling both internal and external) after removing all loosely adhering material from the wall surface with the help of emery stone, putty blade or wire brush and moistening the wall with sufficient quantity of clean water as specified and directed by the Engineer-in-Charge (total thickness of two coats is maximum 1.5mm)	16500.00	sqm
14.4.2	Exterior Painting		
14.4.2.1	Finishing walls with water proofing Cement Paint of Required Shade: (two or more coats applied @ 3.84 kg/10 sqm)	3500.00	sqm
14.4.2.2	Finishing Walls with textured exterior paint of required shade: (two or more coats applied @ 3.28 ltr/10 sqm) over & including priming coat of exterior primer applied @ 2.2kg/10 sqm	2500.00	sqm
14.2.2.3	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade: (two or more coats applied @ 1.43 ltr/ 10 sqm over & including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	1500.00	sqm
14.4.3	Interior Painting		
14.4.3.1	Finishing with deluxe Multi Surface Paint System for interiors and exteriors using Primer as per Manufacturers Specifications and as directed by the Engineer-In-Charge		
a)	Two or more coats applied on walls @ 1.25 litres/ 10 sqm over and including one coat of special primer applied @ 0.75 litre/ 10 sqm	4000.00	sqm
b)	Finishing with Epoxy Paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation on surface, etc. complete as per specification and as directed by the Engineer-in-Charge: On Concrete Works	6000.00	sqm

Sl. No.	Description of Items	Qnty.	Unit
14.4.4	Painting of Steel Works		
14.4.4.1	Finishing with deluxe Multi Surface Paint System for interiors and exteriors using Primer as per Manufacturers Specifications and as directed by the Engineer-in-Charge		
a)	Painting Steel Work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 litre/10 sqm over an under coat of primer apple @ 0.80 liter/ 10 sqm of approved brand and manufacturer	200.00	sqm
b)	Finishing with Epoxy Paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation on surface, etc. complete as per specification and as directed by the Engineer-in-Charge: On Steel Works	200.00	sqm
14.4.4.2	Painting (two or more coats) on rain water, soil waste and vent pipes and fittings with synthetic enamel paint of approved brand and manufacturer and required colour over a priming coat of approved steel primer on new work		
a)	100mm Diameter Pipes	100.00	rm
b)	150mm Diameter Pipes	200.00	rm
14.5	Spandrel Glass Panelling		
14.5.1	Providing, fabricating and supplying shadow box of required size and shape, for fixing in the spandrel portion of the structural glazing, in linear as well as curvilinear portions of the building by providing semi-rigid, inorganic, non-combustible fibre glass wool insulation 50mm thick, conforming to IS: 8183 and BS: 3958 Part 5. The insulation layer shall have facing (factory bonded on surface # 1 of the fibre glass insulation layer), of black non-woven fibre glass tissue of nominal thickness 0.5mm and nominal mass not less than 60gm/sqm, made of randomly oriented glass fibres distributed in a binder by a wet-lay process including 1.5mm thick solid aluminium sheet backing using 6mm thick cement board including SS rivets, nuts, bolts, washers, etc. complete.	1500.00	sqm
14.5.2	Providing and supplying Spandrel Glass panels comprising of 6mm thick heat strengthened monolithic float glass of approved colour and shade with reflective soft coating on surface# 2 of approved colour and shade so as to match the colour and shade so as to match the colour and shade of the IGUs in the vision panels etc. all complete for the required performances as specified, as per the Architectural Drawings, as per the approved shop drawings, as specified, and as directed by the Engineer-in-Charge	1500.00	sqm
14.6	False Ceiling & Partition Works		

CBA-I-22

Sl. No.	Description of Items	Qnty.	Unit
14.6.1	Ceiling with Exposed Metal (GI) Frame Work with E-Grid-2430: Providing & Fixing in position Suspended false Ceiling using E- Grid (Exposed Ceiling Suspension 2430 System) of grid size 600mm x 600mm/ 1200mm x 600mm with main runner 38mm x 24mm, Cross Tee 29mm x 24mm & wall angle 24mm x 24mm. Using 4mm/ 6mm thick High pressure Steam Cured Non Asbestos Fibre cement Board as per IS: 14862, to be placed in a grid of GI System duly suspended with 4mm/ 6mm dia GI/ MS bar hanger fixed with steel dash fasteners or iron purlin from the roof with adjustment cfp providing positions for light fixtures, air conditioning diffusers and ducts, sprinklers, smoke detectors, etc. The main runners to be secured to structural soffit by hanger @ 1220mm maximum c/c. The last hanger at the end of each main runner should be placed at more than 450mm from the adjacent wall. Flush fitting 1220mm Cross Tee to be interlocked between main runners @ 610mm c/c so as to form 600mm x 600mm/ 1200mm x 600mm grid all complete as per the drawings/ specification and as directed by the Engineer-in-Charge		
14.6.1.1	Standard Ceiling as directed by the Engineer-in-Charge		
a)	Using 6mm thick FC Board	500.00	sqm
14.6.1.2	Designer Ceiling as directed by the Engineer-in-Charge		
a)	Using 6mm thick FC Board	1000.00	sqm
14.6.2	Pre- Laminated Particle Board		
14.6.2.1	Providing, fitting and fixing in position 52mm thick double skin partition with well seasoned Sal, Bonsum/ Sundi/ Hollock frame in size 75mm x 38mm and internal frame of 50mm x 38mm and fixing on both sides 8mm thick flat pressed melamine faced pre-laminated baggage board medium density fibre boards (MDF) bonded with phenol formaldehyde synthetic resin of approved shade as specified and directed at all levels. With bajaj- exterior grade (one side decorative) 8 mm thick	600.00	sqm
14.7	Water Proof Coatings		
14.7.1	Applying one coat of epoxy coating followed by two coats of Polyurethane Waterproofing coating at an interval of 12 hours each for waterproofing as specified & directed by the Engineer-in-Charge	1500.00	sqm
14.7.2	Applying 2 coats of 1mm thick acrylic polymer modified cementitious waterproofing coating of approved brand for waterproofing of structures structures as specified after proper surface preparation and soaking the surface with water prior to application complete in all respect as per technical specification and as directed by the Engineer-in-Charge	1500.00	sqm
15	Repairing of Existing Damaged Concrete		
15.1	Installation of injection system for epoxy grout/ non- shrink grout: Installation of non-returnable Packers fixed at required interval including drilling of holes upto a depth of approx. 1/3rd depth of the concrete thickness using a heavy duty drill machine, cleaning of holes, fixing of packers with structural mortar or epoxy mortar, etc. complete in all respect including all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	5500.00	Nos

CEA-1-23/

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Sl. No.	Description of Items	Qnty.	Unit
15.2	Cutting both sides of construction joints in V Groove of size as directed by the Engineer-in-Charge along the construction lift joints for application of high grade dual shrinkage compensated epoxy mortar complete in all respect including labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	1800.00	rm
15.3	Placing of high grade dual shrinkage compensated epoxy repair mortar for repair of designated locations as directed by the Engineer-in-Charge with high flow, single component, dual shrinkage compensated, cementious micor concrete that acheives a comprehensive strength of minimum 50 MPa in 3 days and 70MPa in 28 days, complete in all respect with all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	1200.00	kg
15.4	Application of Epoxy Grout: Application of low viscous, high swelling, thermosetting epoxy grout with hardner solution through already fixed non-returnable packers along the cracks/ construction joints using medium to high pressure special injection pumps. The mixing should be done as per the manufacturer's specification and using specialized applicator. The amount of hardner per litre depends on the required pot life at present ambient temperature, the epoxy hardner shall be mixed until the colour gets uniform and application shall be carried out within the pot life. Complete in all respect with all materials, labours, tools & plants, etc. as per the technical specification or as directed by the Engineer-in-Charge	1300.00	kg
15.5	Restrengthening Works		
15.5.1	Restrengthening of RCC Members by the following processes as specified and directed by the Engineer-in-Charge complete at all levels		
15.5.1.1	Doing patch work in depression of concrete surface wherever necessary by laying epoxy putty, Concresive 2200 of BASF India Ltd. or equivalent as specified & directed by the Engineer-in-Charge complete after proper surface preparation and proper scrapping of concrete protrusion	1000.00	sqm
15.5.2	Application of MBRACE Fibre restrengthening System of BASF India Ltd. or equivalent including laminate and sheet products for increasing the strength of concrete structures.		
15.5.2.1	In Columns: Parchange supply and application of MBRACE CF 230- Unidirectional Carbon Fibre reinforcement System of BASF India Ltd. or equivalent having 400 gm/sqm weight and having modulus of elasticity of 240 kN/mm2 at the entire length of the beam with one layer after proper application of Concresive 2200 at the entire beam area at a thickness of 2mm, which will be followed by the application of MBRACE saturant at the green condition and after proper wrapping the second layer of MBRACE staurant to be applied. Sand to be broadcasted over the MBRACE saturant layer in green condition for application of ant top screed of plastering	400.00	sqm
15.5.2.2	In Slabs & Beams: Parchance supply and application of ready to use Carbon laminates (Fibre Reinforced Polymer) for the reinforcement of concrete elements with MBRACE FRP Laminates of 165/2500, 50mm wide & 1.4mm thick system or equivalent at the bottom portion of the beam, after application of MBRACE Laminate Adhesive or equivalent, which is having minimum 2.5 MPa adhesion strength	500.00	rm
15.5.3	Strengthening with Glass Fibre	1000.00	sqm

CEA-1 -24-

Sl. No.	Description of Items	Qnty.	Unit
15.6	Application of Micro- Concrete for Retrofitting / Restrengthening		
15.6.1	Chipping and breaking/ cutting of loose concrete, mortars, etc. using Electrical Chipping Hammers to the satisfaction of the Engineer-in-Charge for successful execution of the subsequent rehabilitation works at all heights with all leads, lifts, etc. complete with all tools and machineries required for the job, operator, applicator, labour, scaffolding for staging and supervision, etc.	500.00	sqm
15.6.2	Providing and applying two coats of Nitozinc Primer a tow component epoxy zinc rich primer/ Sika Top Armatec- 108 or equivalent product on the properly cleaned and prepared steel bars after the required chipping and cleaning of the concrete surface as per the manufacturer's specifications	500.00	sqm
15.6.3	Before laying of the Micro Concrete, the substrate shall be coated with a bonding agent, Nitobond EP Std./ Sikadur- 32 LP or equivalent product and the micro concrete shall be poured within 6 hrs/ 4hrs or as applicable of the application of the Bonding Agent	500.00	sqm
15.6.4	Providing and fixing shear connectors of 10mm dia at 400 c/c HYSD Steel with two components Styrene & cement free, epoxy acrylate fixing and anchoring compound supplied in self mixing Cylinder-in-Cartridge from that avoids site mixing using standard sealant applicator gun after drilling holes of 10mm diameter to a minimum depth of 80-100mm at required locations, inclusive of all materials, manpower. (Steel to be paid extra) (HILTI/ Fischer or equivalent)	2500.00	Nos
15.6.5	Providing and placing free flow micro concrete Renderoc RG/ Sika Micro- Concrete-2 or equivalent product of after fixing slurry tight shuttering. The micro concrete should be mixed mechanically while maintaining water, power ration of 0.16 strictly in accordance with the manufacturer's instructions and as per the direction of the Engineer-in-Charge. The micro concrete should develop a compressive strength of 10 N/mm2 within 1 day, 40 N/mm2 within 7 days and 50 N/mm2 within 28 days. The cost is inclusive of materials, transportations, labour, taxes, etc. all complete	100.00	cum
15.6.6	Plyboard Shuttering Providing formwork of 12mm thick Plywood Board so as to give a rough finish including centering, shuttering, strutting and propping, etc. height of propping and centering below supporting floor to ceiling not exceeding 4.0m and removal of the same for in situ reinforced concrete and plain concrete work in:		
15.6.6.1	Columns, Pillars, Posts & Strut of square/ rectangular/ polygonal in plan or any shape like TEE/ L etc. having plane vertical face	100.00	sqm
15.6.6.2	Flat Surfaces such as soffits of suspended floors, roofs, landings, cantilever slabs, chajas, Balconies and the like:		
a)	Floors, etc. upto 200mm in thickness	300.00	sqm
b)	Floors, etc. above 200mm in thickness	200.00	sqm
16	Water Supply, Sewage and Sanitation		
16.1	Sanitary Works		

Sl. No.	Description of Items	Qnty.	Unit
16.1.1	Providing, fitting & fixing Vitreous China Dual Flush/ Floor Mounted Coupled/ Extended Water Closet (European type WC Pan 400mm high) with seat & lead, Flushing Cistern, CP Brass Hinges and rubber buffers, CI/ MS Brackets, 40mm dia flush band with fittings including painting of fittings and brackets, if required Hindware make White One Piece Water Closet		
16.1.1.1	Allor (Cat. No. 92052) (inclusive of Seat Cover and fittings)	2.00	each
16.1.1.2	Coral (Cat. No. 92008) (Inclusive of Seat Cover and fittings)	2.00	each
16.1.1.3	Elisa (Cat. No. 92046)/ Rubbic (Cat. No. 92063) (Inclusive of seat cover and fittings)	2.00	each
16.1.1.4	Inox (Cat. No. 92043)/ Inox-100 (Cat. No. 92050) (Inclusive of seat cover & fittings)	2.00	each
16.1.2	Providing, fitting and fixing vitreous flat back type lipped front urinal basin of automatic flushing cistern with standard flush pipe and CP brass spreader and brass unions, etc. complete including painting of fittings and brackets, cutting and making good the walls & floors whereever required Hindware make White		
16.1.2.1	Aquafree Urinal (Cat. No. 60017)	4.00	each
16.1.2.2	Urinal Omega E-Sense (Cat. No. 96006)	4.00	each
16.1.3	Supplying, fitting and fixing Vitreous China Division Plate including fitting and fixing complete as directed and specified		
16.1.3.1	Hindware make White New Division Plate (Cat. No. 61005)	10.00	each
16.1.4	Providing Vitreous China wash basin with CI/ MS brackets, CP Brass Chain with Plug, PVC waste Pipe including painting of fittings and brackets, cutting and making good the walls wherever required Table Top Basin Jaquar make		
16.1.4.1	Kubix (Cat. No. KUS-WHT-0552)	2.00	each
16.1.4.2	JDBC (Cat. No. JDS-WHT-0550)	2.00	each
16.1.4.3	JDBC (Cat. No. JDS-WHT-0547)	2.00	each
16.1.5	Providing, fitting & fixing stainless steel kitchen sink of Parryware make with CI/ MS Brakets, CP Brass Chain with Rubber Plug, PVC Waste Pipe, etc. complete including painting the fittings, cutting & making good the walls whereever required		
16.1.5.1	Parryware makeSingle Bowl with veg bowl & Drain Board (400 x 200) Flat Edge- Glossy (Cat. No. C8545)	2.00	each

Sl. No.	Description of Items	Qnty.	Unit
16.1.6	Providing, fitting and fixing Decorative Mirror complete as directed and specified Parryware make Size 600mm x 450mm	10.00	each
16.1.7	Providing, fitting and fixing Glass Shelf complete as directed and specified Glass shelf with CP Guard Rail Jaquar make Kubix 600mm long (Cat. No. AKB- 35771)	10.00	each
16.1.8	Providing, fitting and fixing Glass Shelf complete as directed and specified Corner Glass Shelf with Brackets of Jaquar make Jaquar make Continental (Cat. No. ACN- 1173)	4.00	each
16.1.9	Providing, fitting and fixing CP Soap Tray/ Soap Dish complete as directed and specified Jaquar make		
16.1.9.1	Queen's (Cat. No. AQN- 7731)	3.00	each
16.1.9.2	Kubix (Cat. No. AKB- 35731)	3.00	each
16.1.10	Providing, fitting and fixing Liquid Soap Dispenser and liquid soap container complete as directed and specified Jaquar make		
16.1.10.1	Kubix make Glass Bottle (Cat. No. AKB- 35735)	8.00	each
16.1.11	Providing, fitting and fixing CP towel rail complete as directed and specified Jaquar make		
16.1.11.1	Queen's (600mm long) (Cat. No. AQN- 7711)	8.00	each
16.1.11.2	Queen's (450mm long) (Cat. No. AQN- 7711A)	8.00	each
16.1.12	Providing, fitting and fixing Chrome Plated Towel Ring complete as directed and specified Jaquar make Queen's (Cat. No. AQN- 7721)	8.00	each
16.1.13	Providing, fitting and fixing Chrome Plated Toilet paper Holder complete as directed and specified Jaquar make		
16.1.13.1	Continental Toilet Paper Holder with Flap (Cat. No. CAN- 1151N)	4.00	each
16.1.13.2	Queen's Toilet Paper Holder with Flap (Cat. No. AQN- 7753)	4.00	each
16.1.14	Providing, fitting and fixing Chrome Plated Waste Coupling complete as directed and specified		
16.1.14.1	Jaquar make 32mm (HT/FT) (Cat. No. ALD-706/ 709)	15.00	each

CEA-1-27

Sl. No.	Description of Items	Qnty.	Unit
16.1.14.2	Cera make Waste Coupling (Full Thread) 40mm (Cat. No. CA 103)	15.00	each
16.1.15	Providing, fitting and fixing Chrome Plated Bottle Trap complete as directed and specified Jaquar make		
16.1.15.1	Bottle Trap (with internal partition) 32mm size with 250mm long wall connection pipe (Cat. No. ALD- 769)	15.00	each
16.1.15.2	Bottle Trap (with internal partition) 32mm size with 300mm long wall connection pipe (Cat. No. ALD- 769B)	15.00	each
16.1.16	Providing, fitting and fixing Chrome Plated Grating complete as directed and specified		
16.1.16.1	160mm Dia	15.00	each
16.1.16.2	110mm Dia	10.00	each
16.1.17	Supplying, fitting and fixing approved uPVC Pipes of different sizes, with all necessary "R" Brand or similar approved uPVC Fittings such as bend, Tee, Elbow, reducer, nipple, plug, tee, long screw fitting, clamps, etc. complete at all levels including below GL as directed and specified		
16.1.17.1	Exposed or in Trenches Supreme/ Prince/ SFMC Brand or other equivalent approved brand (High Pressure Pipe Sch-40)		
a)	50mm dia	300.00	rm
b)	40mm dia	300.00	rm
c)	32mm dia	300.00	rm
d)	25mm dia	200.00	rm
e)	20mm dia	50.00	rm
f)	15mm dia	50.00	rm
16.1.17.2	Concealed by Chiselling or breaking brick wall/ CC wall/ RC Wall and making good to the damaged structure Supreme/ Prince/ SFMC Brand or other equivalent approved brand (High Pressure Pipe Sch-40)		
a)	25mm dia	100.00	rm
b)	20mm dia	150.00	rm
c)	15mm dia	150.00	rm

Sl. No.	Description of Items	Qnty.	Unit
16.1.18	Providing and fixing Chlorinated Polyvinyle Chloride (CPVC) Pipes, having thermal stability for hot and cold water supply including all CPVC Plain and Brass threaded fittings i/c fixing the pipe with clamps at 1.00m spacing. This includes joining of pipe. Exposed or in trenches		
16.1.18.1	50mm dia	100.00	rm
16.1.18.2	40mm dia	100.00	rm
16.1.18.3	32mm dia	100.00	rm
16.1.18.4	25mm dia	100.00	rm
16.1.19	Spupplying, fitting and fixing CP Bib Cock 15mm dia of approved brand as directed and specified Jaquar make		
16.1.19.1	Bib Cock Long Thread	8.00	each
16.1.19.2	2- Way Bib Cock	6.00	each
16.1.20	Supplying, fitting and fixing Chrome Plated (CP) Stop Cock of approved brand and size as mentioned below as directed and specified Jaquar make		
16.1.20.1	15mm dia Angular Stop Cock	10.00	each
16.1.20.2	15mm dia Angular Stop Cock with long thread	10.00	each
16.1.20.3	15mm dia Concealed Stop Cock reduced body	10.00	each
16.1.21	Supplying, fitting and fixing CP Piler Cock of 15mm dia of approved brand as specified and directed Jaquar make		
16.1.21.1	Contenental	6.00	each
16.1.21.2	Long Neck with aerator	6.00	each
16.1.22	Supplying, fitting and fixing Chrome Plated Sink Cock of approved brand as directed and specified Jaquar make		
16.1.22.1	Continental/ Clarion Sink Cock with raised J shaped swinging spout	2.00	each
16.1.23	Supplying, fitting & fixing Chrome Plated Flush Cock of approved brand as directed and specified Jaquar make Continental/ Clarion		

Sl. No.	Description of Items	Qnty.	Unit
16.1.23.1	Flush Cock with wall flange 25mm with level knob	10.00	each
16.1.23.2	Flush Cock with wall flange 25mm with plain knob	10.00	each
16.1.24	Supplying, fitting & fixing Chrome Plated Shower 15mm dia of approved brand as directed and specified Jaquar make		
16.1.24.1	Continental Overhead Shower (ABS Chrome Plated) with rubit cleaning system	1.00	each
15.1.24.2	Queen's Collection Overhead Rose Shower with revolving joint & 150mm long swivel shower arm	2.00	each
16.1.25	Supplying, fitting and fixing Chrome Plated Wall Mixer complete as directed Jaquar make		
16.1.25.1	Continental/ Clarion Wall Mixer 3 in 1 system with provision for both telephonic shower and overhead shower complete with 115mm long bend pipe Cat. No. 1119	2.00	each
16.1.26	Supplying, itting & fixing Push B/b Cock 15mm dia complete as specified & directed by the Engineer-in-Charge		
16.1.26.1	CPCH Heavy Type	10.00	each
16.1.27	Supplying, fitting & fixing ball valve as specified and directed		
16.1.27.1	25mm dia	5.00	each
16.1.27.2	20mm dia	5.00	each
16.1.28	Supplying, fitting and fixing Check Valve including necessary threads to pipes		
16.1.28.1	50mm dia (Heavy Type)	10.00	each
16.1.28.2	40mm dia (Heavy Type)	10.00	each
16.1.29	Supplying, fitting and fixing GI Foot Valve with strainer including cutting necessary threads to pipes		
16.1.29.1	50mm dia (Heavy Type)	5.00	each
16.1.29.2	40mm dia (Heavy Type)	5.00	each
16.1.30	Supplying & placing Plastic Cylindrical Vertical Claused Top (PCVC) Tank make over stagging with manhole cover with locking and cleaning arrangement including providing pads of size as required for inlet & outlet pipes Sintex make		
16.1.30.1	2000 ltr Capacity	1.00	each

(CEA-I) -30/

Sl. No.	Description of Items	Qnty.	Unit
16.1.30.2	1500 ltr Capacity	1.00	each
16.1.30.3	1000 ltr Capacity	1.00	each
16.1.31	Labour of erecting and placing PCVC Tank over the staging up to a height of 5.00m complete as directed		
16.1.31.1	2000 ltr Capacity	1.00	each
16.1.31.2	1500 ltr Capacity	1.00	each
16.1.31.3	1000 ltr Capacity	1.00	each
16.1.32	Rain Water Downcomer Supplying, fitting andfixing Pipes with all necessary fittings complete as directed by the Engineer-in-Charge GI Pipe with GI Fittings TATA/ SAIL (Medium)		
16.1.32.1	100mm Diameter	100.00	rm
16.1.32.2	160mm Diameter	200.00	rm
16.1.33	Supplying, fitting & fixing PVC Pipes of 6kg/cm2 including joining, fitting & fixing with clamps, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches		
16.1.33.1	160mm dia	50.00	rm
16.1.33.2	110mm dia	75.00	rm
16.1.34	Supplying, fitting & fixing 87.5 degree PVC bend with door including joining, fitting & fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches		
16.1.34.1	160mm dia	10.00	each
16.1.34.2	110mm dia	10.00	each
16.1.35	Supplying, fitting & fixing 45 degree PVC bend including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed & specified In exposed surfaces or in trenches		
16.1.35.1	160mm dia	10.00	each
16.1.35.2	110mm dia	10.00	each

Sl. No.	Description of Items	Qnty.	Unit
16.1.36	Supplying, fitting and fixing PVC single TEE including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches		
16.1.36.1	160mm dia	10.00	each
16.1.36.2	110mm dia	10.00	each
16.1.37	Supplying, fitting and fixing PVC single Y with door including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm dia	5.00	each
16.1.38	Supplying, fitting and fixing PVC Double Y with door including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm dia	5.00	each
16.1.39	Supplying, fitting & fixing PVC Cross T with door including joining, fitting & fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or is trenches 110mm x 110mm	10.00	each
16.1.40	Supplying, fitting & fixing PVC Coupler including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm dia	10.00	each
16.1.41	Supplying, fitting and fixing PVC reducer including joining, fitting & fixing, etc. as necessary complete at all levels includign below GL as directed and specified In exposed surfaces or in trenches 160mm x 110mm	10.00	each
16.1.42	Supplying, fitting & fixing PVC reducing Tee with door including joining, fitting and fixing, etc. in exposed surfaces or trenches as necessary complete at all levels including below GL as directed and specified 160mm x 110mm	10.00	each
16.1.42.1	Supplying, fitting and fixing PVC Socket Plug including joining, fitting & fixing, etc. in exposed surfaces or in trenches as necessary complete at all levels including below GL as directed and specified 110mm	10.00	each
16.1.43	Supplying, fitting and fixing PVC cleaning pipe including joining, fitting and fixing, etc. in exposed surface or trenches as necessary complete at all levels including below GL as directed and specified		
16.1.43.1	160mm dia	10.00	each
16.1.43.2	110mm dia	10.00	each
16.1.44	Providing, fitting & fixing PVC Cowel of ISI make complete as directed and specified		

CEA-1-32

Sl. No.	Description of Items	Qnty.	Unit
16.1.44.1	160mm dia PVC Cowel of ISI make	10.00	each
16.1.44.2	110mm dia PVC Cowel of ISI make	10.00	each
16.1.45	Providing, fitting & fixing 450mm dia 90mm thick CI man hole cover & frame of 58kg weight complete as directed and specified	5.00	each
16.1.46.1	Clearance of service septic tank and removing the night soil and debris, etc. manually from the tank/ chamber to a distant place by bailing out the deposited night soil, burning the same in near by trenches/ pits which has been dug earlier and covering the same. The service septic tank is cleaned with clear water and completed as directed by the department For 100 users	2.00	each
17	Removal of Damaged Steel Liner from HRT		
17.1	Removal of Steel Liners in HRT including cutting, dismantling, loading, transportation, unloading & stacking in the Umrongso Store, complete in all respect including all tools & plants, labour, equipments, etc. as per the technical specification and as directed by the Engineer-in-Charge	200.00	MT
18	Gabions		
18.1	Boulder laid in wire crates: Providing and laying of boulders laid in wire crates made with 4mm dia GI wire conforming to IS: 280 & IS: 4826 in 100mm x 100mm mesh (weaved diagonally) including 10% extra for laps and joints laid with stone boulders	1000.00	cum
19	Road Works		
19.1	Preparation and consolidation of subgrade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations, etc. and re-rolling the sub-grade and disposal of surplus earth with lead upto 50m	3000.00	sqm
19.2	Supplying and stacking at site		
19.2.1	90mm to 45mm size stone aggregate	300.00	cum
19.2.2	63mm to 45mm size stone aggregate	300.00	cum
19.2.3	53mm to 22.4mm size stone aggregate	300.00	cum
19.2.4	Stone Screening 13.2mm nominal size (Type A)	200.00	cum
19.2.5	Stone Screening 11.2mm nominal size (Type B)	200.00	cum
19.3	Laying, spreading and compacting stone aggregate of specified sizes to WBM specifications in uniform thickness, hand picking, rolling with 3 wheeled road/ vibratory roller 8 to 10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening/ binding material to fill up interstices of coarse aggregate, watering and compacting to the required density	900.00	cum

CE(P)-I - 33

~ 760 ~

Sl. No.	Description of Items	Qnty.	Unit
19.4	Supplying, stacking and spreading 6mm thick red bajri, watering and rolling complete including preparation of the surface and rolling With Road Roller/ Hand Roller	3000.00	sqm
19.5	Surface dressing one coat on new surface with bitumen of specified grade at a rate of 1.95 kg/sqm of surface area with 1.5 cum of stone chippings 13.2mm nominal size per 100 sqm of road surface, including consolidation with road roller of 6 to 8 tonne capacity, etc. complete: Using bitumen emulsion (minimum 50% bitumen content RS grade conforming to IS: 8887)	3000.00	sqm
19.6	Surface dressing one coat on old surface with bitumen of specified grade at the rate of 1.22 kg/sqm of surface area with 1:10 cum of store chippings 11.2 mm nominal size per 100 sqm of road surface, including consolidation with road roller of 6 to 8 tonne capacity etc. complete: Using bitumen emulsion (minimum 50% bitumen content- RS grade conforming to IS: 8887)	3000.00	sqm
19.7	Providing and laying bitumen mastic wearing course (as per specification) with industrial bitumen of grade 85/25 conforming to IS: 702, prepared by using cooker and laid to required level and slope, including providing antiskid surface with bitumen precoated fine grained hard stone chipping of approved size at the rate of 0.005 cum per 10 sqm and at approximate spacing of 10cm centre to centre in both directions, pressed into surface protruding 1mm to 4mm over mastic surface, including cleaning the surface, removal of debris, etc. all complete. (Considering bitumen using 10.2% as per MORTH Specification): 40mm thick	3000.00	sqm
19.8	Providing and applying tack coat using hot straight run bitumen of grade VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications: On bituminious surface @ 0.50 kg/sqm	3000.00	sqm
19.9	2.5cm premix carpet surfacing with 3 cum of stone chippings 11.2mm nominal size per 100 sqm and bitumen emulsion (medium setting min. 65% bitumen contents) complying with IS: 8887, using 96 kg per cum of chippings of road surface, including consolidation with road roller, etc. Complete	3000.00	sqm
19.10	Providing and laying seal coat of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface, including rolling and finishing with road roller all complete	3000.00	sqm
19.11	Concrete Pavements		
19.11.1	Cement Concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 40mm nominal size) in pavements, laid to required slope and camber in panels as required including consolidation finishing and tampering complete	500.00	cum
19.11.2	Proving & fixing in position pre-moulded joint filler in expansion joints	40000.00	per cm depth per cm width per m length
19.11.3	Providing and laying in position bitumen hot sealing compound for expansion joint etc.: Using grade "A" sealing compound	40000.00	per cm depth per cm width per m length

CCA-1 - 34 /

Sl. No.	Description of Items	Qnty.	Unit
20	**Miscellaneous Works**		
20.1	**Fencing Work**		
20.1.1	Fencing with angle iron post placed at required distance embedded in cement concrete blocks, every 15th Post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with horizontal lines and two diagonals interwoven with horizontal wires of barbed wire weighing 9.38 kg per 100m (min.), between the two posts fitted and fixed with GI staples, turn buckles, etc. complete. (Cost of Posts, struts, earth work and concrete work to be paid separately).Payment to be made per meter cost of total length of barbed wire used. Wire GI barbed wire	2000.00	m
20.1.2	Supplying at site angle iron post & strut of required size including bottom to be split and bent at right angle in opposite direction for 10cm length and drilling holes upto 10mm dia, etc. complete	6000.00	kg

(CEA-1) - 36/37

J - WORKS			
Cost provisions for Rehabilitation of HM equipments of Kopili Power House(Gates) :			
	Description	Unit	Quantity
1	Intake Trash Rack		
1.1	Supply, fabrication and installation of 6 sets of Guide channel from El. 577.86 to El. 597.5 m made up of Stainless steel complete	LS	-
1.2	Repair and painting of 30 nos. of Trash Rack Panels of size 3.623 m x 3.908 m complete	LS	-
2	Intake Bulkhead Gate		
2.1	Supply, fabrication and installation of side guide, sill beam and track assembly for Intake Bulkhead gate of size 3.613 m x 4.6 m made up of Stainless steel complete	LS	-
2.1	Refurbishment of Gate Leaf of size 3.613 m x 4.6 m including, replacement of wheel bearing, Rubber Seals alongwith SS hardwares complete	LS	-
2.2	Sand/Grit Blasting and Painting of Gate assembly of size 3.613 m x 4.6 m.	LS	-
2.3	Modification of 43 t capacity Rope drum hoist including replacement of wire rope, motor, brake, bearings, LCPs, Pulleys etc. complete with approach ladder handrails etc.	LS	-
2.4	Painting of 43 t capacity Rope drum hoist and hoist bridge	LS	-
2.5	Installation of Radar Type Water level sensors	LS	-
3	Draft Tube Gate and Pressure Release Valve		
3.1	Supply, fabrication and installation of 4 sets of side guide, sill beam and track assembly for draft tube gate of size 6.74 m x 1.75 m made up of Stainless steel complete	LS	-
3.2	Refurbishment of Gate Leaf including, replacement of wheel bearing, Rubber Seals alongwith SS hardwares complete	LS	-
3.3	Sand/Grit Blasting and Painting of 4 set of Gate assembly of size 6.74 m x 1.75 m.	LS	-
3.4	Supply fabrication and installation of 4 sets of 20t capacity electrically operated Rope Drum Hoist for Draft Bube Gate and 4 sets of 10t capacity Electrically operated Rope Drum Hoist of pressure release valve mounted on common hoisting platform complete. Dismantling and storing of the existing Gantry crane shall also be included	LS	-
3.5	Installation of Radar Type Water level sensors	LS	-
4	Tail Race Channel Outlet Gate		
4.1	Supply, fabrication and installation of 2 sets side guide, sill beam and track assembly for gate size of 5.75 m x 3.5 m made up of Stainless steel complete	LS	-
4.2	Refurbishment of 2sets of Gate Leaf of 5.75 m x 3.5 m including, replacement of wheel bearing, Rubber Seals alongwith SS hardwares complete	LS	-
4.3	Sand/Grit Blasting and Painting of 2 nos. of Gates assembly of 5.75 m x 3.5 m.	LS	-
4.4	Supply fabrication and installation of 2 sets of 25 T capacity electrically operated Rope Drum Hoist mounted on steel trestle and hoist platform.	LS	-
5	Design, fabrication, supply, transportation, fabrication and erection of 2 Nos. of Hinge Type Gate of size 2.0 m x 2.0 m to be provided in Adit Plug each at Adit-II & Adit-III complete.	LS	-
6	Civil work	LS	-

(C.E.A-1) - 37/37

J - Works			
SWITCHYARD			
	Items	Unit	Quantity
1	Debris clearance	LS	-
2	Aggregate carpeting	Cum	1000.00
3	Mass conc M 20	LS	-
4	Reinforcement	LS	-
5	Anchor Bars - 25 mm	RM	1260.00
6	Miscelleneous items	LS	-
7	Fencing	LS	-
8	Construction of wall at Switchyard corner (plaster on both sides) & Development of Tower Foundation with concrete (M15)	LS	-
9	Construction of tower Foundation of already dismantled tower (U-1&2)	LS	-

File No.CEA-HY-12-33/2/2020-HPA Division

CEA-2 1/16

भारतसरकार
Govt. of India
विद्युतमंत्रालय
Ministry of Power
केंद्रीयविद्युतप्राधिकरण
Central Electricity Authority
जलविद्युतपरियोजनामूल्यांकनप्रभाग
Hydro Project Appraisal Division

विषय: Examination of Detailed Project Report (DPR) for Renovation &Modernisation of 200 (4x50) MW Kopili Power Station, Umrongso, Assam of NEEPCO – Vetting of Cost estimates of E&M works at Jan'21 PL – reg.

Reference is invited to HER&M Division, CEA letter dated 19.02.2021 forwarding there with revised E&M Cost estimates as Rs. 406.14 Crores at Jan'21 PL submitted by NEEPCO Ltd. vide letter dated 18.02.2021 in respect of the proposed Renovation and Modernization of Kopili Power Station (4x50=200 MW) in Umrongso, Assam for examination and vetting of CEA.

The proposal of cost estimates of E&M works at Jan'2021 Price level submitted by NEEPCO has been examined and is vetted for an amount of **Rs. 391.11 Croresat Jan'2021 PL**. Abstract of vetted E&M cost of the project is given below:

(in Rs Crores)

Sl. No	Item	Cost vetted by CEA at Jan 2021 PL
1	E&M works	380.34
2	Dismantling Charges	10.77
	Total	391.11

Details of E&M Cost abstract and dismantling cost vetted by CEA are enclosed at **Annexure-I & II** respectively.

Also, it is worth mentioning that NEEPCO vide letter dated 18.12.2020 (copy enclosed) submitted that the process of valuation and disposal of damaged & dismantled EM items has not been completed and upon completion of same, the arrived amount shall be adjusted from the final value for determination of tariff. Therefore, NEEPCO is advised to deduct/adjust the amount accordingly from vetted E&M cost.

This issues with approval of Competent Authority.

संलग्न: उपरोक्त

Validity unknown
Digitally signed by ASHISH KUMAR LOHIYA
Date: 2021.03.22 11:11:36 IST

(आशीष कुमार लोहिया)
उप निदेशक (एचपीए)

मुख्य अभियंता (HER&M), के.वि.प्रा.

प्रतिलिपि:-: श्री एच के डेका , निदेशक (तकनीकी), नीपको, बुकलैंड कम्पाउंड, लोअर न्यू कॉलोनी, शिलांग-793003

सेवाभवन, आर. के. पुरम-I, नईदिल्ली-110066 टेलीफोन: 011-26190731 ईमेल: hpaone-cea@gov.in वेबसाइट: www.cea.nic.in
SewaBhawan, R.K Puram-I, New Delhi-110066 Telephone: 011-26190731 Email: hpaone-cea@gov.inWebsite: www.cea.nic.in

Reconstruction, Renovation & Modernization of Kopili Power Station (4X50 MW)
(Abstract of Cost Estimates of Electro Mechanical Works)

Price Level: January'2021

Sl. No	Item	Cost vetted by CEA (in Rs Lakhs)
1	**Preliminary - Annex-S(1)**	282.23
	GST as applicable on 1	50.80
	Sub-Total (Preliminary)	333.03
2	**Generating Plant and Auxiliaries**	
	a) Generating Units and Associated Accessories - **Annex - S(2)**	20,318.41
	b) Auxiliary electrical equipment for power station -**Annex-S(3)**	3,791.67
	c) Auxiliary Mechanical equipment and services for power station - **Annex-S(4)**	1,600.81
	GST as applicable on 2(a), 2(b) & 2(c)	4,628.97
	d) Transportation, handling and Insurance charges	808.21
	GST as applicable on 2(d)	145.48
	e) Erection and commissioning charges (excluding spares)	1,997.26
	GST as applicable on 2(e)	359.51
	Sub-Total (Generating Plant and Auxiliaries)	33,650.31
3	**Switchyard and Pothead Yard Equipment & Services**	
	a) Substation equipment, auxiliary equipment and service of Switchyard - **Annex-S(5)**	1,012.07
	GST as applicable on 3(a)	182.17
	b) Transportation, handling and insurance charges	60.72
	GST as applicable on 3(b)	10.93
	c) Erection & Commissioning Charges (excluding spares)	61.70
	GST as applicable on 3(c)	11.11
	Sub-Total (Switchyard and Pothead Yard Equipment & Services)	1,338.71
4	Contingencies @ 1% of items 2 & 3	349.89
5	Tools & Plants @ 0.5% of items 2 &3	174.95
6	**Sub-Total (Item 1 to 5)**	35,846.89
7	Establishment (as per CEA Guidelines)	2,099.34
8	**Sub Total (Item 6 & 7)**	37,946.24
9	Audit and account Charges (as per CEA Guidelines)	88.31
10	**Subtotal (8+9)**	38034.55
11	**Dismantling**	
	Dismantling Charges	912.41
	GST as applicable on Dismantling charges	164.23
	Sub-total (Dismantling charges)	1,076.65
12	**GRAND TOTAL (10+11)**	39,111.19

(CEA-2) -3/

Annex-S(1)

Reconstruction, Renovation & Modernization of Kopili Power Station (4X50 MW)
Cost Estimates of Electro Mechanical Works
(Preliminary)

Price Level: January'2021

Sl. No	Item Particulars	Quantity	Cost vetted by CEA (in Rs Lakhs)
1	2	3	4
1	Design & Consultancy Charges	-	267.23
2	Model Testing for Turbine	-	-
3	Transient Analysis Report	LS	15.00
	Total		**282.23**

File No.CEA-HY-12-33/2/2020-HPA Division

Annex-S(2)

Reconstruction, Renovation & Modernization of Kopili Power Station (4X50 MW)
Cost Estimates of Electro Mechanical Works
(Generating Units and Associated Accessories)

Price Level:
January'2021

Sl. No	Item Particulars	Quantity	Rate (Rs.)	Cost vetted by CEA (in Rs Lakhs)
1	2	3	4	5
1	a) Turbine Generator Units 50 MW, 600 RPM, 326.5 M head, 0.9 pf, 11 kV complete with allied equipment such as MIV, Governor, AVR, Excitation System etc.			
	a.1) 56.6 MW (Max. at design head), 600 RPM Turbine Assembly			
	a.1.01) SS Pressure Relief valve (Nos.)	4	79.58	318.32
	a.1.02) Turbine Guide Bearing Pads (1 set consists of 6 nos. of pads) (Sets)	4	18.31	73.24
	a.1.03) Shaft Sealing Arrangement (SS) (Sets)	4	16.48	65.92
	a.1.04) Turbine Shaft (Nos.)	4	86.68	346.72
	a.1.05) SS Cladding Turbine Shaft (Nos.)	4	14.40	57.60
	a.1.06) Ejector (SS) (Nos.)	4	2.44	9.76
	a.1.07) Turbine shaft Blanking Flange (SS) (Nos.)	4	0.23	0.92
	a.1.08) Turbine top cover	4	191.48	765.92
	a.1.09) Upper Labyrinth(Fixed ring) with transport fixture	4	32.84	131.36
	a.1.10) Pivot Ring(Lower ring)	4	101.90	407.60
	a.1.11) Guide vanes along with lever, strap,cover plate , dowels(key set) and joining hardware as applicable	4	70.51	282.04
	a.1.12) Self-lubricated bushes	4	7.25	29.00
	a.1.13) Upper Cone Unit-I & II	2	42.31	84.62
	a.1.14) Upper Cone Unit-III& IV	2	50.99	101.98
	a.1.15) Lower labyrinth(Fixed ring) with transport fixture	4	32.84	131.36
	a.1.16) Lower Cone for Unit-I & II	2	41.28	82.56
	a.1.17) Lower Cone for Unit-III &IV	2	35.74	71.48
	a.1.18) Adjusting Ring for for Unit- I & II	2	18.07	36.14
	a.1.19) Adjusting Ring for for Unit- III & IV	2	16.18	32.36
	a.1.20) Runner Cone	4	10.42	41.68
	a.1.21) Runner	4	473.42	1,893.68
	a.1.22) Labyrinth(Upper and lower moving ring)	8	32.23	257.84
	a.1.23) Cup Rubber Seal, Shear Pin, "O" seal (for Unit#1 & Unit#2)	2	1.54	3.08

	a.1.24) Cup Rubber Seal, Shear Pin, 'O' seal (for Unit#3 & Unit#4)	2	1.54	3.08
	a.1.25) Hermetically Sealed Limit Switch	4	0.55	2.20
	a.2) 50MW, 11KV 600RPM, 0.9p.f. 50Hz, 3 Phase ertical Shaft A.C Generator			
	a.2.01) Generator complete Assemby (Nos.)	4	1,409.33	5,637.32
	a.2.02) Tools and tackles for generator (Sets)	2	66.89	133.78
	a.2.03) Station Auxiliaries for generators Fire Fighting System 2 Sets for 4 units Motorised Power Pack 4 Sets for 4 units	1	126.57	126.57
	a.2.04) Special Instruments for generator			
	Continuous Online Partial Discharge Analyzer, Moisture Detector, Continuous Online Vibration Monitor and Shaft Current Monitor (Sets)	4	103.32	413.28
	a.2.05) Generator Coolers (Sets)	4	188.13	752.52
	a.2.06) Condition monitoring items for generator			
	Continuous Online Air Gap Monitoring System, Online Magnetic Flux Monitoring System, Online End Winding Vibration Monitoring System (Sets)	4	251.84	1,007.36
	a.3) 1400 mm dia Spherical Valve (MIV)			
	a.3.01) New SS Spherical Valve (MIV) (Nos.)	3	339.45	1,018.35
	a.3.01.01) Associated components	3	160.90	482.71
	a.3.01.02) Tools & Tightening Devices	1	11.86	11.86
	a.3.02) Refurbishment of Damaged Spherical Valve (Sets)	1	82.45	82.45
	a.3.03) Optional items in case found defective during refurbishment		26.86	26.86
	a.3.04) Associated components for refurbishment of Spherical Valve (Sets)		160.90	160.90
	a.4) Governing System			
	a.4.01) Governor System (Sets)	4	64.87	259.48
	a.4.02) Oil Pressure System for Governor & MIV (Sets)	4	38.75	155.00
	a.4.03) Instruments for Turbine, CWS, DDS, HP & LP, CAS, HR/TR for four units (Lot)	1	221.88	221.88
	a.4.04) Oil Leakage Unit (Sets)	4	3.23	12.92
	a.4.05) Lubrication Oil Filtration System (Sets)	1	28.41	28.41
	a.5) Static Excitation Sytem			
	a.5.1) 400KVA, 11KV/0.200KV Dry Type Excitation Transformer without enclosure (Nos.)	4	15.89	63.56
	a.5.2) Static Excitation System and Power Cables for Excitation System (Sets)	4	100.00	400.00
	b) Unit Control Boards (Included in SCADA)			
	c) Cooling Water System comprising pump sets, valves, piping etc.			
	c.1) Cooling water pump set for Unit 1 and 2	3	17.75	53.25
	c.2) Cooling water pump set for Unit 3 and 4	3	17.75	53.25
	c.3) Supply of Electrical Starter Cum Control Panel	2	19.77	39.54
	c.4) Supply of all Instruments with Instrument Valves & Boss for Flow, Pressure, Temperature etc for Main Header	2	3.64	7.27

	c.5) Supply of Cables, Junction Boxes, Supports, Gaskets	2	2.94	5.89
	c.6) Supply of Main Header Assembly Material (Pipe, Pipe Fittings, Flanges etc)	2	64.14	128.28
	c.7) Fasteners, Hardwares, Gaskets Etc for main header	2	14.54	29.07
	c.8) Supply of all type of valves for Main Header (Gate, Butter Fly, Niddle, Check etc.) including motorised	2	59.25	118.51
	c.9) Supply of Filters (Y-strainer & Cyclone Seperator)	2	62.76	125.53
	c.10) Supply of Unit Cooling Water Lines Material (Pipe, Pipe Fittings, Flanges, Fasteners etc)	4	29.16	116.63
	c.11) Fasteners, Hardwares, Gaskets Etc for Unit header & Lines	4	9.63	38.53
	c.12) Supply of all type of valves for Unit Cooling Water Lines (Gate, Butter Fly, Niddle, Check etc.) including motorised	4	21.95	87.79
	c.13) Supply of all Instruments with Instrument Valves & Boss for Flow, Pressure, Temperature etc for Unit Header & Lines	4	9.11	36.45
	c.14) Supply of Cables, Junction Boxes, Supports, Gaskets	4	1.47	5.89
	d) Drainage & Dewatering System			
	d.1) Power House Drainage & Dewatering System (Sets)	2	87.70	175.41
	d.2) MIV Hall Dry Pit Pump for flood handling (Sets)	1	95.14	95.14
	d.3) PH Rain Water D&D System (Sets)	1	150.30	150.30
	d.4) Switchyard drainage system including pumps, starter panel,valve,gates, header pipes, gauges etc. (Sets)	1	34.13	34.13
	e) LP Compressed Air System including pipes and valves			
	e.1) LP Compressors skid with seal control panels (Set of 4 nos.)	1	14.66	14.66
	e.2) LP Air Pipe line & Fittings (Sets)	1	11.48	11.48
	f) Spares @5% on item 1(a) to 1(e)			
	Spares for Item 1.a - Turbine @ 5% (Sets)	1	68.96	68.96
	Spares for Item 1.a.2 - Generator (Sets)	1	206.28	206.28
	Spares for item 1.a.2 - Generator Coolers (Sets)	1	23.02	23.02
	Spares for item 1.a.3 - Main Inlet Valve (Sets)	1	26.68	26.68
	Spares for item 1.a.4 - Governing System (Sets)	1	56.02	56.02
	Spares for item 1.a.5 - Static Excitation System (Sets)	1	15.00	15.00
	Spare- for cooling water system	1	56.08	56.08
	Spares for item 1.d.1) - PH Drainage & Dewatering System (sets)	1	29.65	29.65
	Spares for item 1.d.2) - MIV Hall Dry Pit pump (Sets)	1	8.40	8.40
	Spares for item 1.d.3) - Rain Water dewatering system (Front & Back Side of PH) (Sets)	1	7.39	7.39

	Spares for item 1.e - LT Bus System (Sets)	File No.CEA-HY-12-33/2/2020-HPA Division		1.53
2	11 kV 4000 Amps Isolated Phase Bus Duct for Generator - Transformer Connection, including LAVT, NGT and ICT, Surge Protection and Neutral Earthing System (Sets)	4	67.13	268.52
3	Supervisory Control And Data Acquisition System (SCADA)			
	3.1) Valmet DNA based UCBs, LCB for common Auxiliaries Controls, LCB for Electrical Power Supply Services, LCB for Switchyard Controls, RI/O panels for Switchyard controls, RI/O panel at Dam & BFV House, HMI, Furnitures, GPS based time synchronization system, and UPS for HMI for 4 Units (Sets)	1	600.00	600.00
4	Unit Control & Protection Panels			
	a) Unit Auxiliary Board (Sets)	4	13.22	52.88
	b) Generator protection panel (Nos.)	4	45.00	180.00
5	.....kV ..... Amps SF6 Generator Circuit Breaker (If provided) (Not provided)	Not applicable		
6	Lubricating Oil and Governor Oil for first filling			
	First filling of Oil of Governor System (Lots)	4	4.65	18.60
7	Pressure Shaft Valve (2800 mm Dia)			
	Lattice door type SS BF Valve and acessories (Nos.)	2	419.04	838.07
	Oil Pressure System (Sets)	2	59.81	119.62
	Control System & Instruments for BFV (Sets)	2	48.71	97.42
	First Filling oil for Pressure Shaft Valve sytem (Lots)	2	1.29	2.58
8	Spares for Items 2 to 7			-
	8.1) Spares for IPBD incl. LAVT etc. @ 3%		2.01	2.01
	8.2) Mandatory spares for Valmet DNA Control System as indicated in technical offer	1	20.00	20.00
	8.3) Spares for Unit Control & Protection Panels @ 3%		1.75	1.75
	8.4) Spares for Pressure Shaft Valve	1	65.26	65.26
	Total			**20,318.41**

Annex-S(3)

Reconstruction, Renovation & Modernization of Kopili Power Station (4X50 MW)
Cost Estimates of Electro Mechanical Works
(Auxiliary Electrical Equipment For Power Station)

Price Level:
January'2021

Sl. No	Item Particulars	Quantity	Rate (Rs.)	Cost vetted by CEA (in Rs Lakhs)
1	2	3	4	5
1	a.1) Generator Step Up Transformer (rating 11/220 kV, 65 MVA, Three Phase, OFAF Type) (nos.)	5	399.16	1,995.80
	a.2) Tests on Generator Transformers	1	18.69	18.69
	b) Generator transformer online DGA monitoring (Nos.)	1	47.75	47.75
2	Unit Auxiliary Transformer (Rating 11/0.433 kV, 0.5 MVA, 3 pahse Cast resin dry Type) (Nos.)	4	11.84	47.34
3	a) Station Service Transformer (Rating 132/33 kV, 5MVA, 3 Phase, ONAN Type) (nos.)	1	81.70	81.70
	b) Station Service Transformer (Rating 33/0.415 kV, 1.6 MVA, 3 Phase Oil fill Type) (Nos.)	2	35.15	70.29
4	HT / LT Switchgear for Power Supply to PH complex, Pothead Yard, BFV and Dam Site		-	-
	a.1) 33 KV Vacuum Circuit Breaker (Sets)	2	4.85	9.70
	a.2) 33 kV 400 amps Triple Pole Double Break Isolator without E/s (Sets)	2	2.57	5.14
	a.3) 33 kV 400 amps Triple Pole Double Break Isolator with 1 E/s (Sets)	1	2.95	2.95
	a.4) 33 kV CT, 100-50/1	6	0.99	5.91
	a.5) 33 kV PT (Sets)	3	0.94	2.82
	a.6) 33 kV Lightning Arrestor (Sets)	3	0.79	2.37
	a.7) ACSR Dog Conductor (km)	1	1.15	1.15
	a.8) Terminal Connectors for 33 kV VCBs, Isolators, CTs, PTs & Las (Lot)	1	2.65	2.65

	a.9) 33 kV Bus Support Structure with Lattice Structure (Sets)	2	0.60	1.19
	b.1) 33 kV CT, 100-50/1	3	0.96	2.87
	b.2) 33 kV Bus Support Insulator along with terminal connector	3	0.56	1.67
	c.1) 33/415 V Transformer Control and protection panel (nos.)	2	8.00	16.00
	c.2) 33 kV Incomer Control and protection panel (Nos.)	1	8.00	8.00
	d.1) Station Service Board for Unit #1 & #2	1	66.11	66.11
	d.2) Station Service Board for Unit #3 & #4	1	62.42	62.42
	e.1) Switchyard AC distribution board (Set)	1	4.26	4.26
	e.2) BF Valve AC Distribution board cum starter panel (Set)	1	5.09	5.09
5	DC Batteries, Battery Charging Equipment, DC Distribution Board with DC Switchgear (Rating ... V, ... AH, & ...V, ... AH)			
	a.1) 10 kVA Inverter	1	4.56	4.56
	a.2) 220 V DC 100 Amps Thyristor Controlled Charger Panel	1	10.18	10.18
	a.3) 220V 550 AH OPzS TBS Lead Acid Battery Bank	1	31.80	31.80
	a.4) 220 V, 425 AH PLANTE consisting of 110 nos. cell along with acid, stand and accessories (Sets)	1	48.25	48.25
	a.5) Automatic Float 120 Amps and Float cum Boost 120 Amp battery charger equipment (Sets)	1	12.11	12.11
	a.6) 220 V DC distribution board (Sets)	1	8.85	8.85
	b) 48 V/300 AH battery and Charger	0	-	-
	b.1) Automatic Dual Float cum Boost (50 Amps) Battery Charging Equipment suitable for 48 Volts 300AH VRLA battery (Sets)	2	4.17	8.33
	b.2) Valve regulated SMF lead acid 48 Volts (24 cells) 300AH battery complete with inter cell, inter row connectors, standard accessories and MS rack (Sets)	2	1.96	3.92
	c) 24 V/200 AH Battery and Charger	0	-	-
	c.1) Automatic Dual Float cum Boost (100 Amps) Battery Charging Equipment suitable for 24 Volts 200AH PLANTE battery (Sets)	2	5.19	10.39
	c.2) Lead acid 24 Volts 200AH battery (consisting of 12 cells for each battery) (Sets)	2	3.09	6.17

6	Diesel Generating Set (DG) 0.440 kV, 750 kVA) (In addition to Construction Power) (Nos.)	2	46.07	92.14
7	Control & Power Cables			
	a) Power Cables (Lot)	1	223.07	223.07
	b) Control Cables (Lot)	1	364.25	364.25
8	Refurbishment of Cable Racks, Trays, Supporting Structure and Accessories (Lot) Cost included in PES Erection Offer	1	-	-
9	CCTV, Surveillance System & Telecommunication System at KHEP &UmrongNallah with OFC conectivity and P2P connectivity as back up (Set)	1	24.64	24.64
10	a) Ground Mat &Earthing for Switchyard (MT)	10	1.06	10.56
	b) Earthing Flats (km)	2	10.34	20.68
	c) Earth wire for SY (km)	1	1.08	1.08
11	Illumination of PH Complex and Switchyard (Lot)	1	203.34	203.34
12	Electrical Workshop (included in S-4)		-	-
13	Electrical Test Lab & Testing Equipments (Lot)	1	135.06	135.06
14	Sub-Total (Items 1 to 13)			3,681.24
15	Spares @ 3% on item 14			110.44
	Total			**3,791.67**

Annex-S(4)

Reconstruction, Renovation & Modernization of Kopili Power Station (4X50 MW)

Cost Estimates of Electro Mechanical Works

(Auxiliary Mechanical Equipment and Services For Power Station)

Price Level:
January'2021

Sl. No	Item Particulars	Quantity	Rate (Rs.)	Cost vetted by CEA (in Rs Lakhs)
1	2	3	4	5
1	Overhauling of Electrical Overhead Travelling Crane for PH (Capacity 150 T) (Lot)	1	42.02	42.02
2	Electrical Overhead Travelling Crane for GIS (Capacity ..... T) (Lot)	Not required		
3	Overhauling of Electrical Overhead Travelling Crane for BFV House (Capacity 40 T) (Lot)	1	11.20	11.20
4	Electric Lifts/ Elevators	1	44.80	44.80
5	Fire protection, fire detection & alarm system and gas suppression system			
	Fire Water Pumping System (Lot)	1	357.12	357.12
	Fire Hydrant System (Lot)	1	290.69	290.69
	MVW Spray System (Lot)	1	76.65	76.65
	HVW Spray System (Lot)	1	150.52	150.52
	IG 541 Fire Suppression System (Lot)	1	72.83	72.83
	Aspirating Type Smoke Detection System (Lot)	1	60.00	60.00
	Passive Fire Protection System (Lot)	1	36.00	36.00
	Nitrogen Injection System for Generator Transformers (Lot)	1	102.79	102.79
	Fire Detection and Alarm System (Lot)	1	30.38	30.38

	Fire Extinguishers (Set)	1	2.98	2.98
6	Heating, Ventilation and Air-conditioning (Set)			
	Fresh Air, Ventilation exhaust ventilation system	1	49.01	49.01
	Variable Refrigerant AC system	1	63.18	63.18
7	Potable Water Supply for PH Complex and Pothead Yard (Set)	Not required		
8	Oil Handling Equipment with Pipes, valves, tanks, purifiers (Set)			
	a) 6000 LPH Transformer oil filter machine (Set)	1	18.00	18.00
	b) Industrial oil purification system (1000 LPH) along with spares and tool kit	2	16.73	33.46
9	Workshop Machines and equipment (Set)	1	112.55	112.55
10	**Sub-Total (Items 1 to 9)**			1,554.18
11	Spares @ 3% on item 10			46.63
	Total			**1,600.81**

Annex-S(5)

Reconstruction, Renovation & Modernization of Kopili Power Station (4X50 MW)
Cost Estimates of Electro Mechanical Works
(Substation equipment, auxiliary equipment and service of Switchyard)

Price Level: January'2021

Sl. No	Item Particulars	Quantity	Rate (Rs.)	Cost vetted by CEA (In Rs Lakhs)
1	2	3	4	5
1	220 kV Switchyard Equipments including Coupling Capacitors, wave traps, LAs etc.			
a)	220 kV, 3150 A SF6 Circuit Breaker (Nos.)	8	16.81	134.48
b)	Isolator / Pantograph with / without earthing blade (Rating ... kV)			
	b1) 3-Phase, 245 KV/1250A Centre Break Isolator complete with insulator, base frame and without mechanism box (Mechanically Ganged but without Earth Switch) (Sets)	2	5.23	10.45
	b.2) 3-Phase, 245 KV/1250A Centre Break Isolator complete with insulator, base frame and mechanism box (Mechanically Ganged but without Earth Switch) (Sets)	2	6.36	12.71
	b.3) Mechanism Box Motor operated (MOM Box) for Main 220KV make existing Centre Break Isolator (suitable for both channel & tubular design), type: RC 300 (Sets)	17	1.18	20.11
	b.4) Other Items such as contactor, OLR, Aux switches, motor required for repairing of damaged isolator MOM boxes (Lot)	1	2.64	2.64

	b.5) Repairing of 216 kV Isolators (Lot)	1	34.01	34.01
c)	Current Transformers (Rating 220 kV) (Nos.)			
	c1) Current Transformers without Support Structure	6	4.63	27.80
	c2) Current Transformers with Support Structure	18	4.87	87.62
d)	Potential Transformers / CVT (Rating 220 kV) (Nos.)			
	d1) 220 kV Potential Transformer with Juncion Box	6	7.06	42.46
	d2) 220 kV CVT with Junction Box	9	4.22	37.95
e)	Lightning Arrestors (Rating 216 kV) (Nos.)	21	0.80	16.80
f)	f1) Post Insulator	12	0.20	2.38
	f2) Post insulator structure and terminal connectors	6	0.51	3.03
g)	220 kV Wave Traps	6	6.40	38.38
2	..... kV GIS Bays (Not provided)			-
3	XLPE Cables (Included in S3)			-
4	Shunt Reactor (Not envisaged)			-
5	Bus Conductors, Hardwares and Insulators			-
	a) Zebra Conductor for Bus and for GT to SY (km)	12	8.06	96.70
	b) Hardware Fittings and Insulators (Set)	24	4.22	101.20
6	Protection Panels for Bus, Line & Reactor			
	a) Control, Protection & Relay Panels (Lot)	1	169.60	169.60
7	DC Battery, Charger and associated equipment (included in S3)			-
8	Fire Protection System (included in S4)			-
9	PLCC Panels	3	39.60	118.80
10	Gantry, Foundation for Structures & miscellaneous civil works for other equipment like shield wire, insulators, lightning masts			-

	a) 220 kV Tower between GT Yard and SY (nos.)	1	25.47	25.47
11	Fencing & Security (included in Civil works Estimate)			-
12	**Sub-Total (1 to 11)**			**982.60**
13	Spares @ 3% on Item 12			29.48
14	**Total**			**1,012.07**

Reconstruction, Renovation & Modernization of Kopili Power Station (4X50 MW)

DISMANTLING OF ELECTRO-MECHANICAL COMPONENTS

Sl. No	Item Description	Cost vetted by CEA (in Rs Lakhs)
1	Dismantling of Miscellaneous Equipments including cleaning, and shifting and running and maintenance of pumps, cranes etc.	208.35
2	Dismantling of Electro-Mechanical Equipment's of Kopili Power House, including Transportation and Stacking in designated area	398.94
3	Dismantling of Turbines & Auxiliaries, MIVs, Penstock BF Valves and Switchyard Equipments, including Transportation and Stacking in designated area	185.12
4	Support Services in carrying out day to day miscellaneous works related to restoration works	120.00
	Total Dismantling	**912.41**

CEA-3)-1/

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केंद्रीय विद्युत प्राधिकरण
Central Electricity Authority
आर्थिक एवं वाणिज्यिक मूल्यांकन एवं प्रबंधन प्रभाग

No. 13/2/NEEPCO-Kopili/2021/HEARM/CEA/ Date: 1.6.06.2022

Director (Technical)
North Eastern Electric Power Corporation Ltd.,
Headland Compound,
Lower New Colony,
Shillong-793 003, Meghalaya, India.

विषय/ Sub.: **Detail Project Report for Reconstruction, Renovation & Modernization of 200 MW (4x50 MW) Kopili Power Station, Umrongso, Assam - Tariff and IDC Calculation - Regarding**

संदर्भ/ Ref: F&CA letter CEA-EC-11-13(11)/2/2020-PCA Division dated 17.09.2022

महोदय/ Sir,

Reference is invited to our earlier letter no. 13/2/NEEPCO Kopili/2021/HE&RM/CEA/261 dated 21.06.2021 vide which DPR for Reconstruction, Renovation & Modernization of 200 MW (4x50 MW) Kopili Power Station, Umrongso, Assam was concurred with capital cost amounting to Rs. 821.12 Crore (excluding IDC).

In continuation to our above letter, F&CA Division, CEA has examined the IDC and Tariff calculation submitted by NEEPCO vide their letter CA/56(E)/393 dated 13.10.2021 and conveyed vide its letter under reference above a copy of the letter enclosed herewith that the Capital Cost of Reconstruction, Renovation & Modernization (RR&M) of the project is Rs. 878.09 Crore (including IDC of Rs. 53.97 Crore). In this regard, it may be noted that no Financing Charge has been considered and that the rate of interest of 8.50% on loan has been considered for IDC. Also, the Debt/Equity ratio of 70:30 has been envisaged for financing the RR&M proposal. Further, based on CERC Tariff Regulations 2019, the 1st year and levelised tariff is estimated at Rs. 2.37/ unit and Rs. 2.39/unit respectively.

धन्यवाद/Yours faithfully,

संलग्न/ Encl.: as above

(के. एस. धाबल/ K. S. Dhabal)
निदेशक/ Director

Forwarded to:
GM(E(M), O/o D(T).
20/6/2022
(Submitted)

सेवा भवन, आर.के. पुरम-1, नई दिल्ली-110066 दूरभाष-26100487 ई-मेल: cearkpuram@nic.in वेबसाइट www.cea.nic.in
Sewa Bhawan, R.K. Puram-1, New Delhi-110066 Telefax(O)-26100487 Email: cearkpuram@nic.in Website www.cea.nic.in

E Rybot

File No.CEA-EC-11-15(11)/2/2020-FCA Division

CEA-3)-2

भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केन्द्रीय विद्युत प्राधिकरण

Central Electricity Authority

आर्थिक एवं वाणिज्यिक मूल्यांकन प्रभाग

Financial & Commercial Appraisal Division

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विषय: कोपिली पावर स्टेशन (4x50 मेगावाट) उमरोंगसो, आसाम के पुनर्निर्माण, नवीनीकरण और आधुनिकीकरण के लिए विस्तृत परियोजना रिपोर्ट: टैरिफ और आईडीसी गणना - के संदर्भ में ।

(Detailed Project Report for Reconstruction, Renovation and Modernization (RR&M) of Kopili Power Station (4x50 MW) Umrongso, Assam: Tariff and IDC Calculation – reg.)

संदर्भ: एच.ई.आर.एम. प्रभाग ईमेल दिनांक 13.10.2021

उपरोक्त विषय पर इस प्रभाग से संबधित पत्र सामग्री संलग्न है ।

यह सदस्य (आ.एवं वा.) द्वारा अनुमोदित है।

अनुलग्नक: यथोपरि

सुभ्रो पॉल
निदेशक

मुख्य अभियन्ता (HERM प्रभाग), के.वि.प्रा.

Annex

विषय: कोपिली पावर स्टेशन (4x50 मेगावाट) उमरोंगसो, आसाम के पुनर्निर्माण, नवीनीकरण और आधुनिकीकरण के लिए विस्तृत परियोजना रिपोर्ट: टैरिफ और आईडीसी गणना - के संदर्भ में ।

(Detailed Project Report for Reconstruction, Renovation and Modernization (RR&M) of Kopili Power Station (4x50 MW) Umrongso, Assam: Tariff and IDC Calculation – reg.)

Reference is invited to M/s NEEPCO letter dated 13.10.2021 on the subject cited above.

2. F&CA Division had examined the proposal and observations were sent to HER&M Division vide letter dated 27.10.2021. One of the key observations of this Division was that M/s NEEPCO's phasing of expenditure was based on actual expenditure till Dec 2020, however, TCD and HPA division had approved the Hard cost by considering the actual expenditure till October 2020 only.

3. HERM Division has provided point-wise reply to the observations vide letter no CEA-HY-16-38/6/2020-HERM Division dated 30.11.2021 along with NEEPCO's letter No: CA/56(B)/466 dated 29.11.2021. In its reply, the revised phasing of expenditure for Civil and E&M cost as vetted by TCD Division and HPA division at Jan 2021 PL has been provided.

4. M/s NEEPCO has furnished Capital Cost of RR&M as Rs 878.09 Cr including IDC of Rs 53.97 Cr. The rate of interest of 7.50% on loan has been considered for IDC. No financing charge has been considered. The debt/equity ratio of 70:30 has been envisaged for financing the RR&M proposal.

5. In respect of tariff computation, the RoE and Depreciation on old plant & Equipment has been considered, since its useful life has not been completed. M/s NEEPCO has submitted gross residual value of old assets (U # 1, 2, 3 & 4) and Equity on old assets as Rs 167.68 Cr and Rs 83.84 Cr respectively. However, CEA has calculated equity on old assets in line with Regulation 27(4) of CERC tariff regulations, 2019 as Rs 32.43 Cr.

6. Based on CERC Tariff regulations, 2019 the first year tariff and levelised tariff estimated by us is 2.37 Rs/kWh and 2.39 Rs/kWh respectively.

Since after RR&M works, generating unit would have normative life of 40 years therefore, the levelised tariff of 2.39 Rs/kWh appears reasonable. However, tariff mentioned above is only indicative tariff and actual tariff would be determined by CERC after completion of RR&M works.

7. In view of the above, RR&M proposal for Kopili HEP may be recommended.

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ANNEXURE - XVI

BACKGROUND NOTE ON TIME & COST OVERRUN OF RECONSTRUCTION, RENOVATION & MODERNISATION OF 4X50 MW KOPILI POWER STATION, UMRONGSO, ASSAM EXECUTED BY NEEPCO

ISO 9001&14001 45001

1.0 BACKGROUND

1.1 The Kopili Hydro Power Station is located in Dima Hasao district of Assam. It is situated in Karst lime stone zone in the east of Jaintia Hills (Meghalaya) and west of North Cachar Hills (Assam) at a Longitude of 92°4' E and a Latitude of 25°32'. The project impounds a live storage of 156.6 Mcum by means of a 30 m high concrete gravity dam across the river Umrong for power generation. The water conductor system comprises a head race tunnel (HRT) of length 5473 m and diameter 4.6m, 2 nos. of penstocks of length 890 m and 2.7 m diameter each further bifurcating into two leading the waters to a surface power house having an installation of 4 Francis turbines with generating unit of 50 MW each operating under rated head of about 326.5m.

1.2 The project with installation of 4x50 MW has original design energy of 1034 MU. However, the design energy for the plant has been revised to 993.80 MU. All the units were commissioned in between 1988-1997 with the first two Units commissioned in 1988 while the unit #3 and unit #4 were commissioned in 1997.

1.3 However, acidity in the reservoir water had jeopardized the functioning of the Power Stations by damaging the vital under- water parts, cooling water pipes, penstocks & tubes etc. Geological Survey of India has identified that unscientific extraction of coal in the catchment area as the primary reason for acidity of the reservoir water. The complete flooding/mud/debris submergence of the 200 MW Kopili Hydro Power Station due to rupture of penstock-1 and burst opening of one manhole of penstock-2, in the early morning hours of 7th October, 2019 resulted in complete stoppage of power generation from the plant.

1.4 Subsequently, Restoration and Renovation & Modernisation of the plant along with all the common components/equipment viz Dam, HRT, Surge shaft, all gates, BFV, common plant auxiliaries, switch yard and all associated equipment etc were taken up.

1.5 Major scope of works taken up for Reconstruction, Renovation & Modernisation of the project, among others, includes the following;

A. Civil and Hydro-Mechanical works:

- Repairing of Radial Gate, Intake Gate including Stop log gate, Sluice gate
- Replacement of Penstock -1 and Penstock - 2
- Repair and Strengthening of Head Race Tunnel
- Civil works pertaining to Dam, HRT, Penstock, Power House, Tail Race and Switchyard
- Communication and enabling works.

B. Electrical Works:

- Repair/ Replacement (Including redesign) of Turbine - Generator Components, Main Inlet Valves and Auxiliaries
- Reconstruction of Switch Yard and all damaged components including Transmission network within Station
- Replacement of Generator Transformers (GTs),
- Replacement of control system, SCADA

- Replacement of both the BF valves at Valve house
- Reconstruction/Renovation of all Sub-system such as, SSB, UAB, cooling water system, drainage & dewatering system, LP compressed air system, emergency DG chargers, Station service transformer, Battery bank and chargers, Fire detection & protection system, HVAC, illumination etc.
- Miscellaneous Work

1.6 The Detailed Project Report (DPR) for RR&M with estimated project cost of Rs 870.76 Crore (Hard Cost) was submitted to CEA on 06.10.2020. The cost estimates in respect of Electro-Mechanical works was vetted by CEA on 22.03.21 vetted for Rs 391.11 Cr at Jan 2021 PL. Whereas, the cost estimates of Civil & Hydro-Mechanical works was vetted on 04.06.2021 for Rs 433.01 Cr at Jan 2021 PL. Later on, CEA vide letter F.No.CEA-EC-11-15(11)/2/2020-FCA Division conveyed vetting of the Capital Cost of RR&M for Rs. 878.09 Crores including IDC & FC for Rs 53.97 Crore at Jan 2021 PL.

1.7 The main works of Reconstruction, Renovation & Modernisation of the project have been executed through following major Contract packages viz. Civil, Hydro Mechanical and Electro Mechanical as below:

Sl. No.	Name of Work	Agency	Date of agreement/ LOI	Scheduled Completion Date	Work Value (Rs in Cr)
1	Civil works pertaining to Restoration of Kopili Hydro Power Station	M/s APS Hydro Pvt Ltd., Delhi	05.01.21	14(fourteen) months from date of LOI (31.12.2020) i.e. **28.02.2022**	64.76
2	Design, Fabrication, Supply, Erection, Testing & Commissioning of Penstock and Steel in Liners in Umrong System of Kopili Hydro Electric Project (275MW), Assam	M/S PES Engineers Pvt Ltd.	02.11.20	18(eighteen) months from date of LOI (02.11.2020) i.e. **01.05.2022**	254.20
3	Detailed Design & Engineering, Manufacture, Testing at Works, Despatch, Inland Transportation including Freight and Insurance, Delivery to Project Site, ...Erection, Testing and Commissioning at site of all Electro-Mechanical Equipment to be	M/s Andritz Hydro Pvt Ltd	07-04-21	21(twenty one) months from date of LOI (03.04.2021) i.e. **02.01.2023**	135.43

Sl. No.	Name of Work	Agency	Date of agreement/ LOI	Scheduled Completion Date	Work Value (Rs in Cr)
	installed in the Power House of Kopili P.S.				
4	Design, Engineering, Manufacture, shop testing, transportation, Delivery and Supervision of complete erection, testing and commissioning of 5 Nos. (4+1 spare) 63 MVA ONAF/OFAF cooled 11/220 KV, 3-PHASE Generator Step up Transformers.	M/s BHEL	20-01-21	17(seventeen) months from date of LOI (17.12.2020) i.e. **16.05.2022**	30.23
5	MIV	M/s Voith Hydro Pvt Ltd.	02-12-20	01-12-21	18.12
6	BF Valve	M/s BHEL	22-12-20	12(twelve) months from date of LOI (15.12.2020) i.e. **14.12.2021**	13.52
7	Under Water Parts	M/s Andritz Hydro Pvt Ltd	23-12-21	12(twelve) months from date of LOI (23.12.2021) i.e. **22-12-22**	34.14
8	Fire Fighting	M/s Sterling & Wilson	16-12-21	15-04-22	27.85
9	Repair and or Rebuild and or Replacement, Including Design, Supply, Fabrication, Erection, Testing and Commissioning of Hydro-Mechanical components Umrong Water Conductor System Under Re-construction, Renovation & Modernization of KHEP	M/S PES Engineers Pvt Ltd.	30.09.2021	8(Eight) months from date of handing over the site.	17.12

Sl. No.	Name of Work	Agency	Date of agreement/ LOI	Scheduled Completion Date	Work Value (Rs in Cr)
	(4X50 MW), Dist- Dima Hasao, Assam				
10	Storage, Material Handling, Erection & Commissioning of EM Equipment.	M/S PES Engineers Pvt Ltd.	16.09.2021	18 (Eighteen) Months from date of LOI (16.09.2021) i.e. **15.03.2023**	37.43

1.8 The Unit- IV, III, II & I of the project have been commissioned and under commercial operation since 20-08-2023, 03-09-2023, 12-11-2023 and 03-06-2024 respectively.

1.9 The Revised Cost Estimate of Reconstruction, Renovation & Modernisation has been updated at May'2024 PL for a total project cost involvement of Rs 1201.66 Crore Including IDC &FC of Rs.79.40 Cr.

2.0 ANALYSIS OF TIME OVERRUN.

A time overrun of 13.2 months with respect to CEA approval. However, the time overrun has happened with a minimum period of 6.2 months for Unit-3 and with a maximum of 13.2 months for Unit-1.

Zero Date	Original Commissioning Schedule	Sanctioned Construction Period
01.11.2019	30.04.2023	42 months

Original COD	Actual COD	Actual Construction Period	Time Overrun w.r.to COD (in months)
Unit-1: 30.04.2023	03.06.2024	01.11.2019 to 03.06.2024	13.2
Unit-2: 31.03.2023	12.11.2023	01.11.2019 to 12.11.2023	7.5
Unit-3: 28.02.2023	03.09.2023	01.11.2019 to 03.09.2023	6.2

Unit-4: 31.01.2023	20.08.2023	01.11.2019 to 20.08.2023	6.7
Station COD: 03.06.2024		**55.2 months**	**13.2 months**

2.1 Reasons for Time Overrun:

Sl. No.	Reasons of delays	Start Date	End Date	Period of hindrance (in month)	Delay considered in Critical Path	
1	Nationwide lockdown due to Covid-19 pandemic	24-03-20	31-05-20	2.3	2.3	All work fronts were adversely affected by Covid-19 pandemic and its subsequent restrictions imposed on movement of men & machineries, affecting supply chain. As such, net delay of 6 months has been considered in line with the measures announced by the Govt. vide DoE (PP Division), MoF vide OM No F-18/04/2020-PPD dtd 13-05-2020 which include a six-month work extension for projects under Force Majeure Clause to offer some relief to government contractors whose work was hit by Covid-19 lockdown.
2	Night curfew and restrictions imposed by district authorities on account of Covid-19 pandemic (2nd Wave)	01-05-21	30-06-21	2	1	
3	Covid affect: Delay in supply of major Generator equipment.	01-06-21	31-08-21	3	2	
4	Covid affect: Delay in supply of BF valves.	14-12-21	21-11-22	11.3	0.4	
5	Assam Legislative Assembly election, 2021	01-04-21	08-04-21	0.3	0.3	Manpower engaged by package contractors had proceeded to their respective native places to cast their vote in the Assembly election held in Assam on 01-04-2021. Moreover,

						most of the NEEPCO officials were also deployed for election duty.
6	Loose fall in Adit-II due to poor geology	10-09-21	10-10-21	1	1	Due to loose fall encountered during the unplugging of the Adit-II, all activities related to Hydro Mechanical works inside HRT got affected.
7	Disruption in construction power supply due to inundation of Khandong Power station caused by unprecedented flood.	26-03-22	31-03-22	0.2	0.2	Due to cloud burst that had occurred on 26th March 2022, Khandong Power station was inundated leading to disruption in construction power supply all work fronts affecting the progress of works.
8	Modification in refurbishment plan of 3 nos. Bifurcation in HPT of Umrong WCS as per suggestion of Expert Consultant.	18-02-23	14-04-23	1.8	0.3	Additional time was required for execution of the extra work - Repair/Refurbishment of bifurcations at U/S & D/S of Valve House through weld build-up prior to cladding due to highly corroded/pitted & damaged condition in that areas.
9	Surprises encountered in Unit-I resulting delay in erection of turbine & generator components of Unit-I	24-12-22	07-09-23	8.5	5.7	During weld build-up of spiral refurbishment based on RLA report, high level of deterioration (a through hole of 5 mm) was observed in spiral case in two segments W17-W18. Therefore, re-checking thickness in various segments of the spiral case through phase array mapping, and refurbishment was carried out.
Total Delay (Months)					**13.2**	

The above-mentioned hindrances have affected the critical activities of the project during execution. The reasons responsible for delaying activities falling on critical path are explained as under.

2.2 Covid-19 pandemic:

On account of Covid-19 outbreak followed by subsequent national lockdown from 24.03.2020, site works were to be put on hold and could be partially resumed only from 22.04.2020 onwards on obtaining permission from concerned authority. Construction activities continued with contractors following COVID-19 protocol circulated from time to time by the Govt of India as well as by the respective state Govt. on public health guidelines – such as social distancing and self-isolation – but progress was inevitably slower.

On the other hand, some project officials and the workers of the contractor who had moved from the project site on leave or on official duty prior to lockdown have been stranded at different locations and could not report in time in view of the restrictions placed on the movement of manpower, goods & services on account of the lockdown situation. Construction materials supply chains were severely affected by COVID-19 pandemic as the suppliers were unable to keep up with demand for the vast quantities of construction and other materials during construction due to production being suspended, staff shortages and restrictions on movement.

Further, due to Covid-19 pandemic there was sudden rise in the demand of oxygen gas and procurement was restricted by Govt. Authorities. As such, inadequate supply of Industrial Oxygen was affecting site activities and in most of the cases was therefore forced to stop & caused delay in execution of work.

Night curfew and restrictions imposed by district authorities:

The country wide Covid-19 pandemic played havoc with construction activities throughout the Country including our site. Movement of vehicles were totally banned in the night time. All Inter-District transport service and movement of people were suspended during night time. Night time restriction hampered the night shift duty and other logistic related work, Standard operating procedures were enforced & night curfew imposed by Authorities.

Covid affects:

(i) Delay in supply of SS Cladded steel plates:

Main cause of delay in transporting cladded steel plates meant for Penstock from Japan was due to disruption in shipping line to load the cargo in many ports prior to loading of material at the origin port due to covid 19 pandemic.

(ii) Delay in AHPL supplied major turbine & generator equipment (High grade steel from the Europe) - EM Package

Post Covid, there was huge shortage & capacity constraints of electrical grade steel raw materials imported from Europe. Further, additional time was taken due to transit time of vessel sailing from Europe to India. Aforementioned scarcity of material and logistic issue caused and overall delay of 03 month for sourcing the material from Europe. The hindrances due to these had affected the project schedule.

The impact of force majeure due to which Andritz team couldn't travel to site for performing reverse engineering for designing equipment as per contract clause.

All available drawings were lost during complete inundation of Kopili Power House. All four BHEL supplied Machines were presumed to be identical, later during reverse engineering it was found that machines are nonidentical. Additional time required for resolving issues.

ii) Delay in BHEL supplied BF Valve - EM Package

- Items get delayed due to covid & post covid countrywide which affected manufacturing and procurement of raw material.
- Casting activities of BF valve door delayed due to Russia – Ukraine war creating shortage of chromium which is key ingredient of SS casting

2.3 Assembly election in Assam.

Assembly election in Assam was held on 01-04-2021 & the manpower engaged by package contractors had proceeded to their respective native places to cast their vote. Moreover, NEEPCO employees were deployed in the election duty. As such, no work could be undertaken w.e.f. 01-04-2021 to 08-04-2021.

2.4 Loose fall in Adit-II due to poor geology.

Various activities inside the HRT required to be carried out by accessing working sites through the Adit-II, but all activities related to Hydro Mechanical works got affected due to geological surprises like loose fall occurred during the unplugging of the Adit-II.

2.5 Disruption in construction power supply.

Subsequent to Khandong and Khandong stage-II power stations inundation on 26th March 2022 due to unexpected flood the switchyard and 33KV supply system became inoperative resulting in total blackout in the entire NEEPCO colony & work fronts. Arrangement of additional power connection on emergency basis was made from APDCL and power supply could be restored on 01-04-22 resulting loss in time of about one week.

2.6 Modification in refurbishment plan of 3 nos. Bifurcations in HPT of Umrong WCS.

While gouging for welding started, corrosion/pitting & damages were detected in the old steel base plate at the upstream of valve House & Upstream of MIV of Penstock-1 & 2. As per suggestion of the Expert Consultant, suitable NDT was done to ascertain the extent of damage and accordingly weld build-up were taken up to fill up the pitted areas with welding after removing the corroded metal.

2.7 Surprises in Unit One spiral Casing: EM Package

Initially, Spiral refurbishment was done based on RLA report through Ultrasonic Thickness mapping. But during weld build-up, high level deterioration was observed in spiral case in its two segments W17-W18. The deterioration level is such that a through hole of diameter approx. 5mm has formed on the spiral surface as soon as the welding electrode touches it. As such, re-checking the thickness of the whole

spiral through complete phase array thickness mapping was carried out and based on report, subsequent repair was carried out as per suggestion of experts.

3.0 ANALYSIS OF COST OVER RUN:

The cost overrun of the project has been carried out with respect to CEA approved cost at Jan'21 price level as shown below:

(In Rs. Crore)

Item Description	CEA Approved Cost at Jan'21 PL	Revised Cost Estimate at May'24 PL			Variation w.r.t to CEA vetted cost
		Expenditure as on May'24	Committed Liabilities	Total Cost	
Civil and HM Works	401.08	540.29	15.89	556.18	155.10
EM Works	370.12	442.73	27.00	469.73	99.61
Establishment Cost	52.92	114.93	0.00	114.93	62.01
Hard Cost	**824.12**	**1097.95**	**42.89**	**1140.84**	**316.72**
IDC &FC	53.97	79.74	0.00	79.74	25.77
Insurance cost against residual Asset of the plant	0.00	15.47	0.00	15.47	15.47
Total	**878.09**	**1193.16**	**42.89**	**1236.05**	**357.96**
(-) Less Receipt: (a) Earning from Infirm power Rs. 4.60 Crs. (b) Sale of Scrap Rs. 29.79 Crs.				-34.39	-34.39
Net Project Cost				**1201.66**	**323.57**
Escalation included in above	0	82.94		-	(82.94)
Cost Overrun					240.63

The breakup of variance of work portion of Civil & HM work (**Rs. 155.10 Crore.**) and EM work (**Rs. 99.61 Crore.**) excluding Establishment cost under different heads is given as under: -

Sl. No	Description of cost overrun	Civil & HM work	EM work	Total (Rs Crs.)	%age w.r.t total

1	Change in Scope/ Design	0.00	3.40	3.40	1.33%
2	Under / Over provision	26.10	20.62	46.72	18.34%
3	Addition/Deletion	45.37	36.43	81.8	32.11%
	Sub Total	71.47	60.45	131.92	51.79%
4	Price Escalation	59.35	23.59	82.94	32.56%
5	Statutory Levies (Service Tax, VAT, Cess, GST...)	24.28	15.57	39.85	15.65%
	Sub Total	83.62	39.16	122.79	48.21%
	Total	**155.10**	**99.61**	**254.71**	100.00%

The Head wise abstract statement of CEA approved cost, RCE cost and cost variation thereon is given below:

(In Rs. Crore)

Heads	**CEA Cost at Jan'21 PL**	**RCE (May'24 PL)**	**Variation**
I- Works			
A-Preliminary	7.98	5.34	-2.64
B-Land	0	0	0
C-Civil Works	2.85	2.27	-0.58
J-Power Plant Civil Works	344.27	483.72	139.45
K-Building	2.48	1.32	-1.16
M-Plantation	0.80	0	-0.8
O-Miscellaneous	6.0	45.17	39.17
P-Maintenance	3.49	0.84	-2.65
Q- Special T & P	1.00	0.23	-0.77
R- Communication	28.84	17.28	-11.55
X-Environment & Ecology	0.50	0	-0.5
Y-Losses on stock	0.87	0	-0.87
Total of I- Works	399.08	556.17	157.09
II Establishment	31.93	63.45	31.52
Total Direct Charges	**431.01**	**619.62**	**188.61**
INDIRECT CHARGES			
(b) Audit & Accounts Charges	1.99	0	-1.99
Total Indirect Charges	1.99	0	-1.99
A. TOTAL OF CIVIL and HM WORKS	**433.01**	**619.62**	**186.62**
EM Works			

Heads	CEA Cost at Jan'21 PL	RCE (May'24 PL)	Variation
EM Works	370.12	469.74	99.62
Establishment Charges	20.99	51.48	30.49
B. TOTAL OF EM WORKS	**391.11**	**521.22**	**130.11**
C. Insurance cost against Residual Assets of the Plant	-	15.47	15.47
TOTAL (A+B+C)	**824.12**	**1156.31**	**332.19**
IDC &FC	53.97	79.74	25.77
Total Cost of the Plant	**878.09**	**1236.05**	**357.96**
(-) Less, (a) Sale from infirm power Rs. 4.60 Crs. (b) Sale of Scrape Rs. 29.79 Crs.		**-34.39**	**-34.39**
Net Total	**878.09**	**1201.66**	**323.57**
Escalation included in above	0	82.94	(82.94)
Cost overrun			240.63

The above cost of Rs 1201.66 Crore includes price escalation of Rs 82.94 Crore. The Project has experienced a cost overrun of Rs 240.63 Cr. (27.40 %).

The head wise reasons of cost overrun are described in brief as below:

3.1 A - Preliminary: (Variation - Rs.263.87 Lakh)

As per CEA, the total cost approved under preliminary works is Rs. 798.17 lakhs. This cost includes mainly for the rescue operation, expenditure on survey & investigation, topographical survey works, geophysical survey, investigation for concrete, Pre-operative expenses, Consultancy charges etc.

As on date, the project has incurred Rs 534.30 Lakhs under this head. Further an amount of Rs. 725 lakhs have been incurred for Building Information Modelling (BIM) for assessing the healthiness of the Power House Building under EM contract.

3.2 B- Land:

Not applicable.

3.3 C-Works: (HM equipment of Umrong Dam; Variation (-) 57.53 lakhs)

The project components under this includes - Umrong Dam Spillway Radial Gate, Under Sluice Gate and Under Sluice Stoplog Gate. As per CEA approved cost, the total cost of C-works was Rs. 285.0 Lakh. The actual cost incurred as on date under C-works is Rs. 227.47 lakhs and there is a provision of Rs 25.03 Lakhs against committed liabilities/balance works. Hence, total cost under this head stands at Rs 227.47 Lakhs with negative cost variation of Rs. 57.53 Lakhs due to the following reasons:

i) **Addition/Deletion (-Rs.83.30 Lakhs):** Some items such as Supply, fabrication and installation of Adit Gate of Size 2 m X 2.0 m including imbedded parts, under sluice gate, 2nd stage embedded parts of under sluice stoplogs were not required to be executed due to necessity of diverting the river flow through under sluices during the RR&M works of Radial Gates. Further, the Adit gates were to be plugged with concrete instead of its refurbishment whose cost has been considered in J-civil works. The net decrease in cost under this head is Rs. 83.30 Lakhs.

ii) **Inadequate / Over Provision (Rs. 34.54 Lakhs):** The cost had increased mainly due to inadequate provision in quantity against few items such as Sand/Grit Blasting and Painting of Gate assembly & Painting of RDH and hoist bridge.

iii) **Statutory Levies (-Rs.8.78 Lakhs):** The decrease in cost under this head is due to non-execution of Adit Gate, Under-Sluice Gate & 2nd stage embedded parts of Under-sluice stoplogs works as explained above.

3.4 J-Works

The project components under this head are Head Race Tunnel, Adits, High Pressure Tunnel, Tail Race channel, Switchyard and HM works. The approved CEA cost under this head is Rs. 34426.56 lakhs. The actual cost incurred as on date under J-works is Rs.46,980.57 lakhs and there is a provision of Rs 1,391.22 Lakhs against committed liabilities. Hence, the total cost incurred is Rs 48,371.78 lakhs with a cost overrun of Rs 13,945.22 lakhs. The reasons of variations are as below:

i) **Price escalation (Rs 5,934.36 lakhs):** There is an increase of Rs 5,934.36 lakhs due to price escalation. The variation is due to escalation on quoted rates of J-Power Plant Civil Works. The price escalation has been worked out at May'24 price level, taking the provisional values of applicable indices for the month of April'24 & May'24.

ii) **Scope / design change:** Nil.

iii) **Inadequate/ Over Provision (Rs. 687.03 lakhs):** The increase in cost of Rs 687.03 lakhs mainly due to the following reasons:

a) Increase in the quantity of the Radiographic testing (d/s of AB-1 to u/s of AB-8 including reducer beyond D-line) & Ultrasonic testing of the welded joints of the ferrules of Penstock (In HRT and Between u/s of AB-8 to D-Line): Rs.121.88 Lakhs (HM WORKS)

b) Dismantling of Designated Portion of existing Anchor Blocks- Quantity deviated, due to change in methodology for dismantling, as finalised by the appointed Independent Engineer by MoP. The total deviation amount for the item is Rs. 745.03 Lakhs (CIVIL WORKS).

c) Cost of Cement & Steel- The increase in cost is due to the corresponding increase in executed quantity of PCC, RCC & HYSD Reinforcement. The total deviation amount for the item is Rs. 287.01 Lakhs (CIVIL WORKS)

d) PCC Along Penstock Alignment- Excess quantity is necessitated to be executed in backfilling works between Anchor Block 7 to Anchor Block 8 as per site condition. The total deviation amount for the item is Rs. 198.114 Lakhs (CIVIL WORKS)

e) Repairing of Existing Damaged Concrete- Owing to site conditions, the executed quantities of epoxy mortar, epoxy grout etc. are more due to extensive damage of concrete surface in HRT. The total deviation amount for the Items under this head is Rs. 182.52 Lakhs (CIVIL WORKS)

f) Application of Epoxy resin based bonding agent- Excess quantity has to be executed before executing "HRT resurfacing works using cementitious mortar conforming to BS EN 1503-3 R4 with compatible bonding agent" as per requirement of Sika Applicator. The total deviation amount for the Item is Rs. 120.281 Lakhs (CIVIL WORKS) *(Annexure J.iii.f, softcopy available in the folder "Background with annexure"))*

g) Boulder laid in wire crates- Excess quantity executed in bank protection works downstream of Tail Race Channel. The total deviation amount for the Item is Rs. 94.062 Lakhs (CIVIL WORKS)

h) Over provision in the quantity of Reinforced Cement Concrete in Saddle Supports: The total negative deviation amount for the Item is (-) Rs. 108.79 Lakhs (CIVIL WORKS)

iv) **Addition/Deletion (Rs 5187.63 lakhs):** There is an increase of Rs. 5,187.63 lakhs due to necessity of execution of the following Analogous & Extra items as per site requirement-

I. ***Civil Works***

a) Removal of Steel Liners from Anchor Block- Work executed as Analogous item due to absence of specific Item of work in BOQ. Total Financial involvement is Rs. 51.28 Lakhs

b) Cleaning of penstock corridor by manual means- Work executed for manual dental cleaning of penstock alignment surface before taking up PCC works. Total Financial involvement is Rs. 64.24 Lakhs

c) Resurfacing of Invert of Umrong HRT using cementitious mortar- Work executed as Extra Item for repairing of invert of HRT, due to absence of specific item in BOQ. Total Financial involvement is Rs. 670.91 Lakhs

d) Dismantling/cutting of concrete at Adit-II Plug, Saddle Supports, Service bay entrance, GT Yard- Work executed for dismantling of concrete at various location using heavy duty cutter, to avoid damage to adjoining structures & due to site accessibility issues. Total Financial involvement is Rs. 124.20 Lakhs

e) Dismantling of concrete for erection of Thrust Collar- Work executed for dismantling of existing concrete at D-line of Powerhouse for erection of Thrust Collar. Total Financial involvement is Rs. 145.10 Lakhs.

f) Dismantling of concrete using core cutting machine- Work executed for dismantling of concrete at various floors of Powerhouse as per site requirements and drawings issued by D&E wing. Total Financial involvement is Rs. 324.56 Lakhs.

g) Dismantling of concrete at Tail Race Channel- Work executed for dismantling of existing concrete at Tail Race Channel, for erection of new TRC gate hoisting arrangement. Total Financial involvement is Rs. 12.75 Lakhs.

h) Supplying and Application of chemical HILTI-RE 500 V4/500- Work executed for chemical anchoring of Draft Tube and PRV Gate Rope Drum Hoisting Foundation at DT Deck of powerhouse. Total Financial involvement is Rs. 52.26 Lakhs.

i) Additional works- Cable trench cover, interior furniture works, construction of spur, weigh bridge, aluminium & railing works, penal room, cut-outs in pH, roof steel structure in valve house building etc. These works are necessitated to be executed but not in CEA estimate. Total Financial involvement is Rs. 624.85 Lakhs

j) **Addition in S/ Yard: (Rs.10.59 Lakhs):** Positive variation has occurred due to mismatch in summation of items under Switchyard civil works in CEA approved cost. The item no. 8 & 9 were observed to be left out in the final calculation in CEA approved cost.

II. *HM Works*

The increase in amount under the head of "Addition/Deletion" is due to execution of the following main works beyond CEA vetted cost.

Sl. No	Additional work	Amount (Rs in Lakh)
1	Ultrasonic Testing on trash rack panels of Umrong Intake	0.96
2	Dewatering of temporary pool u/s of Umrong Intake to facilitate repair works of HM components of Umrong System	36.82
3	Design, Fabrication, Supply, Installation, testing and commissioning of Stainless-steel liner in 2 No. of Under sluice Stoplog gate groove	17.78
4	Chemical anchoring of foundation bolts of base plate for erection of columns for TRC Rope Drum Hoist using Injectable Epoxy Mortar	13.45
5	Eddy Current Array Testing of all joints	159.70
6	Steel In-liner in the vicinity of Adit-III (Ch. 4035 to 4135 m) including provision of grout holes & plugging	1181.35
7	S.S liner at Adit-I, II & III	767.94
8	Dewatering works in the tunnel for the steel-in-liner in Umrong system of KHPS at Adit-I, II, III & IV	180.22
9	Refurbishment/Weld Build-up of 3(Three) nos of Bifurcation VH, Unit-1,2 & Unit-3&4 of KHPS	304.85

vi) **Statutory Levies (Rs 2,125.62 Lakhs)**: The increase in cost is due to payment towards GST etc.

3.5 **K-Building: (Variation: (-) Rs.115.88 Lakhs.)**: The provisions under this head covers the cost towards dormitory, Rooms Buildings etc. required during the construction phase of RR&M works. The CEA cost for this work was Rs. 248.06 lakhs. Actual cost incurred as on date is Rs.132.18 lakhs. Hence, total cost under this head is Rs 132.18 lakhs with negative cost overrun of Rs. 115.88 Lakhs on following heads.

i. **Inadequate/ Over Provision (-) Rs. 98.20 lakhs)**: The decrease in cost of Rs 98.20 lakhs mainly due to non-construction of Assam type building which was envisaged in approved cost.
ii. **Statutory Levies (-) Rs 17.68 Lakhs)**: The decrease in levies is due to negative variation under K-building head.

3.6 **M-Plantation (Variation: (-) Rs 80.00 Lakhs)**: This head covers plantation program, garden, parks and lawns etc. The total cost provisioned in CEA under this head was Rs. 80 lakhs but no expenditure was incurred against the sub-head as on COD.

3.7 **O-Miscellaneous: (Variation Rs 3916.81 Lakhs)**

The provisions under this head cover the capital cost & maintenance of Water supply Sewage disposal and drainage works, Recreation, Medical, Firefighting equipment, Inspection vehicles, School bus, pay van visit of dignitaries Welfare works etc.

Total cost provision kept under the head O-Miscellaneous in CEA was Rs.600.00 Lakh on lumpsum basis. The expenditure under this head as on date is Rs. 4416.94 Lakh and there is a provision of Rs 99.88 Lakh as committed liabilities against operation of departmental equipment. Therefore, total cost under this head is Rs 4516.81 Lakhs. Hence, there is an increase of Rs. 3916.81 Lakhs from CEA approved cost under this head. The main reasons are under estimation in approved cost estimate against the works - due to security arrangement (Rs.758.57 Lakhs), construction power and its R&M (Rs. 1971.27 Lakhs), R&M of DG Sets (Rs.615.49 Lakhs), hired vehicles charges (Rs.411.26 Lakhs) and other miscellaneous works under this head.

3.8 **P-Maintenance During Construction (Variation (-) Rs. 265.49 Lakh)**: The maintenance of all the works during the execution of the project under C, J & K are accounted under this head and is kept as 1% of C, J&K in CEA approved estimate. But, an amount of Rs 84.11 lakhs was incurred as on COD with a negative variation of Rs. 265.49 Lakh with respect to approve cost under this head.

3.9 **Q-Special Tools & Plant (Variation (-) Rs. 77.39 Lakhs)**: This head deals with the special equipment needed for the project such as Drilling & Grouting equipment, Transport, Compaction, Electrical equipment, Construction Plant & Earth Moving equipment and other miscellaneous equipment. The total expenditure incurred under this head as on COD is Rs. 22.61 Lakhs. Hence, the total negative variation under this head is Rs.77.39 Lakhs. The decrease in cost is mainly due over provision in the CEA which is kept on lumpsum basis.

4.0 **R-Communication: (Variation - Rs.1155.46 Lakhs)**

The cost incurred for construction of main approach roads, quarry roads, temporary or permanent, maintenance of roads, Construction of Protection works along

Powerhouse Approach Road, bridges required for the project are considered under this head. The total cost provisioned for this head in CEA was Rs. 2883.66 Lakhs. The cost incurred as on date is Rs. 1657.60 Lakhs. In addition, there is a provision of Rs. 70.60 Lakh as committed liabilities like construction of road. Hence, the total cost under this head is Rs. 1728.20 Lakh which is within the cost sanctioned by CEA under this head. The negative variation of Rs. 1155.46 Lakhs has occurred due to the reasons as below:

i) **Addition/Deletion (-) Rs. 447.58 Lakhs):** The scope for construction of bridges (3 nos.) amounting Rs. 462.25 lakhs as envisaged in the CEA approved estimate are no longer required to be constructed for commissioning of the project.

ii) **Inadequate / Over Provision (-) Rs.531.62 Lakhs):** The cost had decreased mainly due to over provision against items such as Repairing of damaged road from RCC bridge at Kopili PH Site to Junction point of 29 km (Ch. 0.00m to Ch. 7060.00m, Length 7.06 km) and Reconstruction work of Kopili PH - 8 kilo Road (Ch: 0.0 km to Ch.12.0 km of Length 12km). The net decrease in cost under this head is Rs. 531.62 Lakhs. Further, there is over provision for protection work along the approach to the power house in CEA approved estimate.

iii) **Statutory Levies (-) Rs.176.26 Lakhs:** Negative variation is due to decrease in the scope of executed work.

5.0 **X- Environment & Ecology (Variation: (-) Rs. 50.00 Lakhs):** This head covers the cost incurred under the items like compensatory afforestation, catchment area treatment, reservoir rim treatment, fisheries development, environment monitoring etc. However, no expenditure was incurred under this head as on COD.

6.0 **Y – Losses on Stock: Variation (-) Rs 87.4 Lakhs**
No losses on stock occurred.

7.0 **Audit and Account charges: Variation (-) Rs. 199.54 Lakhs.)**
The CEA approved amount is Rs.199.54 Lakhs. But, no expenditure has been incurred in this head.

8.0 **Electro-Mechanical (EM) Works: Total variation of Rs 13608.75 Lakhs.**

A. **Annex S (1) – Preliminary:** There is an increase of Rs. 1100.92 Lakhs under this due to the following reasons:

a) The project cost has increased by Rs. 49.16 Lakhs due to price escalation of some items as per the contract agreement for Electro-Mechanical works.

b) An additional cost of Rs. 1051.77 Lakhs has been incurred for carrying out additional new works/items, which are listed below.

After the inundation of the power house, for carrying out the renovation of the Power house additional studies were to be carried out to assess the healthiness of the Power House building and embedded parts prior to proceeding and also during the course of the renovation works. These has also led to increase in the project cost. Few of the studies carried out are as follows:

i. Building Information Modelling (BIM) for assessing the healthiness of the Power House Building (Rs 725 L)

ii. Hydraulic Thrust calculation due to missing information and non-identical old units (Rs 70.3 L)

iii. Additional effort made in Unit-I for interfacing of modified design of runner coupling, turbine shaft design (Rs 210.78L)

iv. Computational Fluid Dynamic (CFD) Study of Water Conductor System (WCS) along with Underwater Parts (Rs 95 L)

v. Health assessment of spiral casing (Rs 26 L)

vi. Residual Life Assessment (RLA) Studies of Underwater Parts (Rs 40.64 L)

vii. Thickness measurement of Spiral casing in Unit IV, III and II (Rs 16.90 L)

viii. Thickness Measurement of Spiral Casing by PAUT of Unit 1 (Rs 11.5 L)

ix. Laser Scanning and development of as built drawing of 4 nos. of DT (Rs 16.44 L)

x. Integrity Testing of the embedded and exposed parts of Spiral Casing (Rs 15.68 L)

Additionally, consultancy services were also availed for the following which also led to increase in the project cost:

xi. Consultancy services for preparation and providing of detailed construction drawing of 220 kV D/C DD Type Tower with pile foundation for Wind Zone-V (Rs 25.96 L)

xii. Turbine design engineering - specialist service for essential input for refurbishment of underwater parts (Rs 34.4 L)

xiii. Project Engineering and Interface Management Service- for Reconstruction, R&M of Kopili Power Plant (Rs 46 L)

xiv. Further, GI portable cabin were procured and erected at site for accommodation of vendor's engineers/ supervisor's so that the travel time from to site could be minimized and works could be expediated (Rs 38.63 L)

B. **Annex – S (2) - Generating Units and Associated Accessories**: There is an overall increase of Rs. 502.08 Lakhs in this head due to the following reasons:

a) The project cost has increased by Rs. 1126.07 Lakhs due to price escalation of some items as per the contract agreement for Electro-Mechanical works.

b) Despite over-provision on a few items, there is an overall under-provision of Rs. 398.41 Lakhs for Main Generator Package (Rs 885.27 L)

c) Despite adding the following main items/works, there is an overall decrease of Rs. 1022.39 Lakhs due to the deletion of certain items listed below.

i. Turbine Pit Covers (Rs 32.28 L)

ii. Cyclone Separator and associated accessories (Rs 29.25L)

iii. Refurbishment of eroded draft tube (Rs 179.99 L)

iv. Refurbishment of drain boxes inside Draft tube (Rs 16.57 L)

v. Modification of Penstock drain line (Rs 80 L)

vi. Weld build up and machining of spiral case inlet flange area of all 4 units of Kopili Power Station (Rs 97 L)

vii. Procurement of SS seamless pipes with accessories for runner balancing (Rs 46.15 L), Cooling water system (Rs 70.35 L), Drainage and dewatering system (Rs 61.14 L)

viii. Procurement of Auxiliary Transformer cubicle and Support Structure for Isolated Phase Bus Duct (Rs 64.34 L)

ix. Media connectivity for remote operation of units (Rs 50 L)

x. There is a decrease of (-) Rs 752.52 L due to the deletion of Generator coolers, as they were part of the Generator Complete Assembly. Additionally, there is a decrease of (-) Rs 1007.36 L due to the deletion of a few monitoring systems.

C. **Annex - S (3) - Auxiliary electrical equipment for Power Station**: There is an overall increase of Rs. 1789.55 Lakhs in this head due to the following reasons:

a) The project cost has increased by Rs. 967.76 Lakhs due to price escalation on certain items as per the contract agreement for Electro-Mechanical works.

b) There is an increase of Rs. 340 Lakhs in the project cost due to upgrading the Generator Transformer rating from 63 MVA to 65 MVA and replacing Oil Impregnated Paper (OIP) Bushings with Resin Impregnated Paper (RIP) bushings.

c) There is an overall increase of Rs. 440.42 Lakhs due to **under-provision** on the main works listed below, despite over-provision on a few items:

i. Unit Auxiliary Transformer (Rs. 2.64 L)

ii. 33 KV Protection panel (Rs 132 L)

iii. Additional one no. 220 V DC distribution board (Rs 10.04 L)

iv. Power and Control Cables (Rs 365.20 L)

v. CCTV, Surveillance System & Telecommunication System (Rs 23.87 L)

vi. Ground Mat & Earthing for 220 kV Switchyard, 33 kV Sub Station and DG (Rs 66.21 L)

d) There has been an increase of Rs. 41.36 Lakhs due to the addition of the following main works:

i) Repairing damaged 5 MVA, 132/33 kV Station transformer (Rs 15.5 L)

ii) Procurement of items for implementation of Remote monitoring system of LT (SSB & UAB PLC parameters by mirroring / duplicating) (Rs 3.92 L)

iii) Procurement of 250 KVA DG for Valve House (Rs 14.63 L)

D. **ANNEX - S (4) - Auxiliary Mechanical equipment and services for power station:** There is an overall increase of Rs. 662.66 Lakhs in this head due to the following reasons:

a) There is an overall increase of Rs. 821.83 Lakhs due to under-provision on the following main works, despite over-provisioning on a few items:

i) Overhauling of Electrical Overhead Travelling Crane at Power House and Valve House (Rs 26.37 L)

ii) Fire protection, fire detection & alarm system and gas suppression system (Rs 1050.79 L)

iii) Fresh Air, Ventilation, exhaust ventilation system (Rs 172.01 L)

b) There is an overall decrease of Rs. (-)159.17 Lakhs in this head due to deletion of workshop machine and equipment.

E. **Annex - S (5) - Substation equipment, auxiliary equipment and service of Switchyard:** There is an overall increase of Rs. 437.42 Lakhs in this head due to the following reasons:

a) There is an overall increase of Rs 435.98 Lakhs due to under-provisioning on the following main works, despite over-provisioning on a few items:

i. 220 kV, 3150 A SF6 Circuit Breaker (Rs 38.26 L), 220 kV Wave Traps (Rs 21.15 L)

ii. Current Transformers with Support Structure (Rs 44.04 L)

iii. Lightning Arrestors (Rs 10.99 L), Post Insulator (Rs 9.15 L)

iv. Bus Conductors, Hard wares and Insulators (Rs 150.79)

v. Protection Panels for Bus & Line (Rs 151.23 L)

vi. 220 kV Tower between GT Yard and SY (Rs 43 L)

F. **Erection and commissioning charges:** There is an overall increase of Rs. 3948.44 Lakhs considering the both heads "generating plant and Auxiliaries" and "Switchyard and pothead Yard Equipment and Charges" due to the following reasons:

a) There is an increase in project cost of Rs. 216.74 Lakhs due to price escalation as per the contract agreement for Electro-Mechanical works.

b) There is an increase of Rs. 80 Lakhs in erection and commissioning charges, including supervision charges, due to under-provisioning in

Annex - S (5): Substation equipment, auxiliary equipment, and service of switchyard (referring to erection charges on S5 sheet).

c) The increase of **Rs. 3651.70 Lakhs** is due to non-inclusion of erection charges of some sub systems as well as non-inclusion of supervision charges from various vendors in the original estimate. Additionally, the main erector had to carry out extra works to complete the renovation and modernization. The brief breakup of the cost incurred is as follows:

i. Supervision of erection and commissioning charges of S2 amounting to **Rs. 2028.46 Lakhs**, which includes supervision charges from AHPL for the Main package and Turbine package, supervision charges from BHEL for BFV, supervision charges of Voith for MIV and erection and commission charges from BCPL for different packages.

ii. Supervision of erection and commissioning charges of S3 amounting to Rs. 109.68 Lakhs, which includes supervision charges from BHEL for Generator Transformer erection, erection charges from Vingiri for the erection of isolators and the 33 kV Substation, and erection and commission charges for the installation of CCTV and associated items by different vendors.

iii. Supervision of erection and commissioning charges of S4 amounting to Rs. 591.79 Lakhs, which mainly includes supervision charges from Sterling and Wilson for the erection and commissioning of the Firefighting System.

iv. Erection and commissioning charges of the main erector amounting to Rs. 3135.77 Lakhs, which also includes charges for additional work such as Bus Duct erection, cutting and adjustment of MIV inlet pipe, extra work for PRV, installation of additional BFV Servomotor, installation of additional DC System, erection of Aeration pipeline, installation of OPU heat exchanger, and testing of CTs and PTs of Bus Duct.

G. **Dismantling Charges**: There is an increase of Rs. 302.72 Lakhs in this head due to under-provisioning in dismantling and support services.

9.0 Establishment cost of Civil and HM + EM Work (Variation Rs. 6200.86 Lakh):

The Basic Establishment Cost (BEC-C) of the civil works has been worked out as given below:

Cost of Civil works = I works – B Land (Rs. 55617.47 –0 (Lakhs))

= Rs. 55617.47 Lakhs

BEC-C = 8.00% of Civil works

= 4449.40 Lakhs

Add for Scattered Works: Additional 1% of BEC-C per km for HRT/tunnels length more than 5 km or total approach road length more than 10 km.

Approach Road Length:

Distance from Kopili colony to Kopili Power Station	19.0
Distance of Power House from Adit-3 junction	4.7
Distance of Power House site from junction of surge shaft	5.4

Distance of Power station from Valve House	3.8
Distance of Switchyard from junction PH road	0.2
Distance of kopili colony to dam site	3.6
Distance of kopili PH to Adit-2	8.4
Distance of ab 8 junction from PH	0.5
Distance PH From Main Road junction	7.0
Total	52.60 km
Total approach road less 10 km	42.60 km

Scattered Works =1% of BEC-C per km
=1% of 4449.40 x 42.6 lakhs
=1895.44 lakhs

Total establishment cost for Civil Works: Rs 6344.84 lakhs

Similarly, the Basic Establishment Cost (BEC-E) of the EM works has been worked out as below.

Basic Establishment Cost-EM = 6% of E-M Woks i.e 43673.29 lakhs
= Rs. 2620.40 lakhs

Total establishment cost for EM Works: Rs 2620.40 lakhs.

Hence, the total establishment cost as per CEA norms, worked out as Rs.8965.24 lakhs.

However, actual cost incurred under Establishment head is Rs 11,492.87 lakhs as on COD. The cost of establishment includes salary and wages, welfare schemes apart from increment and dearness allowances as per Government policy. Further, establishment expenses are incurred during the time overrun of project and therefore the charges of establishment for the time period corresponding to time overrun. As such, actual expenditure of Rs 11,492.87 lakhs have been included in the project cost.

10. V – RECIEPTS AND RECOVERIES:

This head is meant to account for estimated recoveries by way of resale or transfer of temporary buildings and special T&P. Miscellaneous receipts like rent charges of buildings electricity charges etc. should also be accounted for under this head.

For RR&M of Kopili Hydro Power Station Nil amount has been approved by CEA.

11. IDC &FC:

As per the CEA approved cost an amount of Rs. 53.97 Cr was allocated against soft cost that comprise mainly of IDC and FC. As per investment approval, total project cost was financed at a debt-equity ratio of 70:30.

As on May' 24, the actual expenditure incurred under this head is Rs. 79.74 Crore (in which there is time overrun of 13.2 months).

12. Income from sale of infirm power & sale of scraps:

ISO 9001&14001
45001

An amount of Rs 459.64 lakhs has been booked as income from the sale of infirm power before declaration of COD and Rs 2979 lakhs from the proceed of sale of scraps has been booked. The total amount of Rs 3438.64 lakhs has been deducted from total cost of the project.

Conclusion:

Besides above, the Kopili Hydro Power Station being located in remote area faced many challenges during execution such as poor approach roads, non-availability of skilled manpower, various problem faced due to poor condition of Lanka-Umrangso main road since very long time which caused many logistic problems, law & order problems etc. The hindrances encountered were successfully tackled by appropriate engineering with advice of prominent technical experts, consultants etc. The Corporation has strived hard to complete the project successfully by optimizing the cost and time despite facing several adversities. The delays suffered during the course of execution of the project leading to time overrun of 13.2 months accompanied by cost overrun of Rs 240.63 Crore are beyond the control of the Corporation.

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ANNEXURE - XVII(G)

भारतीय स्टेट बैंक
भारतीय स्टेट बैंक
STATE BANK OF INDIA

In Accordance copy /

The Director,
North Eastern Electric Power Corporation Ltd (NEEPCO)
Brookland Compound, Lower New Colony,
Shillong- 793003,
Meghalaya

PFSBU/TEAM-06/2021-22/698 31.08.2021

Dear Sir,

North Eastern Electric Power Corporation Ltd (NEEPCO)
General CAPEX requirements and refinance of high cost bonds.
Sanction of Rupee Term Loan of Rs 1000 Crores

We refer to your mandate letter dated 03.06.2021 and further discussions we had with the company officials for providing a Rupee Term Loan of Rs 1000 Crores for financing general capex requirements and refinance of high cost bonds.

2. In this connection, we hereby convey sanction for the following facility as under:

a. Rupee Term Loan (RTL) of Rs.1000 Crore for general capex requirements and refinancing of high cost bonds with a door to door tenor of 8 years (Moratorium period of 2 years from the date of first disbursement and repayment period of 6 years)

3. The sanction of the facility is subject to detailed terms and conditions furnished under **Annexure-I**. The terms and conditions set out in **Annexure-I** are indicative and bank reserves the right to modify the existing terms and conditions/ stipulate additional terms & conditions till the time of documentation.

4. Please communicate to the Bank within 15 days of this letter, the acceptance of the terms and conditions set out herein by returning to us the duplicate copy hereof duly signed by the authorized representative(s) of the Company in token of having accepted the terms and conditions supported by two certified copies of the resolution duly passed by the Board of Directors. This resolution must provide that the Company is agreeable to enter into the Loan Agreements within the time stipulated by SBI, along with the names of the authorized signatories for the purpose. There is no obligation or commitment on the part of SBI to advance any money till such Agreements are executed.

M/s NEEPCO

मुख्य महाप्रबंधक (वित्त)
Chief General Manager (Finance)
नीपको लि., शिलांग
NEEPCO Ltd., Shillong

bank.sbi
+91 22 6882 3008
+91 22 6882 3072

परियोजना वित्त एवं संरचना व्यवसाय समूह
मफतलाल सेंटर, ४था मजला,
नरिमन पॉईंट,
मुंबई - ४०० ०२१, भारत

परियोजना वित्त एवं संरचना व्यवसाय समूह
मफतलाल सेंटर, ४थी मजला,
नरिमन पॉईंट,
मुंबई - ४०० ०२१, भारत

Project Finance & Structuring SBU
4th Floor, Mafatlal Centre
Nariman Point
Mumbai 400 021, India

5. Please note that this communication should not be construed as giving rise to any binding obligation on the part of the bank. The proposed term loan commitment and the pricing will be valid till 15.09.2021.

Yours faithfully,

(M P Siva)
Deputy General Manager
Project Finance SBU

Accepted for and on behalf of
North Eastern Electric Power Corporation Ltd (as Borrower)
Name: DUIJEN KUMAR
Designation: मुख्य महाप्रबंधक (वित्त) Chief General Manager (Finance) नीपको लि., शिलांग NEEPCO Ltd., Shillong
Date:

Annexure-I

Terms & Conditions for Rupee Term Loan Facility:

1. **Borrower:** North Eastern Electric Power Corporation Ltd (NEEPCO)

2. **Promoter/Sponsor:** NTPC

3. **Purpose:** General capex requirements and refinance of high cost bonds.

4. **Debt:** Term Loan of Rs. 1000 Cr

5. **Upfront Fee:** Nil

6. **Other Fees:** **Annual Review Charges:** Nil.
Modification fee: Nil.
Inspection charges: Actual expenses + Rs. 10,000/- subject to a minimum of Rs. 30,000/- p.a. plus taxes annually.

7. **Availability Period:** Till 31.12.2022

8. **Door to Door Tenor of debt:** Door to Door tenor of 8 years from the date first date of drawdown with moratorium period of 2 years.

9. **Principal Moratorium:** 2 years from the first date of drawdown.

10. **Repayment schedule for Debt Facility:** Repayment schedule from the date of first drawdown:

Rs.25 Cr each at the end of the 9th to the 20th quarter.
Rs.50 Cr each at the end of the 21st to 28th quarter.
Rs.75 Cr each at the end of the 29th to 32nd quarter.

11. **Rate of interest:** SBI 3M MCLR present effective being 6.65% p.a Interest will be payable on last business day of each calendar month. The effective interest rate shall be the rate applicable on the first date of drawdown and will be reset quarterly thereafter. The Borrower shall pay the Lenders interest at the end of every month. The Borrower shall bear all taxes (including interest tax, if any), duties etc. in respect of the Facility.

12. **Interest Tax, Levies & Duties:** Interest tax / other levies / duties, if any, applicable, shall be payable by the Borrower over and above the interest rates, fees mentioned herein above.

13. **Security Stipulations:** Facility shall be secured by way of Pari Passu charge on the assets of the Kameng HEP (600 MW) valued at Rs.7766.92 Cr as per ABS of 31.03.2021 to be created before first disbursement. Security shall be perfected within 6 months from the date of first drawdown along with obtention of letter ceding pari passu charge from existing lenders of Kameng project.

मुख्य महाप्रबंधक (वित्त)
Chief General Manager (Finance)
नीपको लि., शिलांग
NEEPCO Ltd., Shillong

14. **Addl interest upon non creation of security:** The Borrower will have to perfect all security as per the Security Stipulations within 6 months from the date of first disbursement or any extended period as per the sole discretion of the Lenders. In case the security is not perfected within such mentioned period, the Borrower shall pay an additional interest of 1% p.a. on the entire outstanding after such time period till perfection of security. Any further disbursements pending perfection of security shall be at the sole discretion of the Lenders.

15. **Penal Interest:** Penal Interest of 5% per annum on the irregular portion for the period of irregularity to be recovered till the overdues are fully adjusted.

16. **Prepayment charges:** Nil

17. **Drawdown Schedule and Disbursement:** On any date during the availability period but in not more than 10 tranches and for not less than Rs.100 Cr per tranche.

18. **Cancellability clause:** Bank reserves the absolute right to cancel the limits (either fully or partially) unconditionally without prior notice,

a) in case the limits/part of the limits are not utilized by the Borrower even after expiry of the Availability Period, and/or
b) in case of deterioration in loan accounts in any manner whatsoever, and/or
c) in case of non-compliance of terms and conditions of sanction which could lead to Material Adverse Effect on debt service capability of the Borrower.

19. **Insurance:** The Assets charged to the Lenders shall be insured, comprehensively against appropriate risks, including force majeure events, both during & after the construction period, till the Facilities are outstanding, with suitable bank clause incorporated. The Borrower shall not make any compromise, adjustment or settlement in connection with any loss or any other event entitling the Borrower to claim under any Insurance Contract without the prior approval of Bank.

20. **Legal Expenses:** The Borrower shall pay/reimburse all the expenses incurred/to be incurred by the Lenders in respect of appointment of Legal Counsel for creation of security, obtention of legal and / or any other advices, documentation, filing of charges, etc.

21. **Other Charges:** The Company shall pay/reimburse all the expenses incurred / to be incurred by the Lenders in respect of any other consultant (s) services utilized, with mutual consent.

22. **Pre-Commitment Conditions:**

1. Obtain a confirmation from Company Secretary of the Borrower to the effect that none of its directors, is a director or specified near relation of a director of a lending Bank or FI and also confirm that none of the directors name appears in RBI/CIC willful defaulters list or any similar list issued by authorities. In case such person is already on the Board of the Borrower, it would take expeditious and effective steps for removal of that person from its Board. Nominee directors are excluded for this purpose.

M/S NEEPCO

Chief General Manager (Finance)
NEEPCO Ltd., Shillong

2. Furnish a confirmation from its Company Secretary ensuring:
    a) Compliance with provisions of Companies Act, as amended from time to time, with respect to Borrowers borrowing power (regarding the authority/ability to borrow credit facilities from lenders).
    b) Amendment of Memorandum of Association (MoA) and Articles of Association (AoA) for enhancement of Authorized and Paid-up share capital as and when required and to ensure that MoA/AoA allows, inter alia.
    c) Incorporate any other changes if required by the Bank.
    d) Have submitted a declaration to the effect that none of its directors is a director or specified near relation of a director of SBI.
3. Provide a copy of resolution passed by Board of Directors of the Borrower and Promoter approving the terms of financing contemplated by financing agreements & Project agreements authorizing specific persons to execute, sign and/or dispatch all documents to which the Borrower /Promoter shall be a party.
4. Provide self-attested KYC documents of all the directors of the Company as required by regulations.
5. Provide any document as may be requested and mutually agreed for review of Lenders.
6. Agree to maintain adequate books of accounts, as per applicable accounting practices and standards, which should correctly reflect its financial position and scale of operations and should not radically change its accounting system without notice to the Bank.
7. Agree to furnish to the Lenders every year Audited Balance Sheet and Profit and Loss Account Statements of the Borrower immediately on these being published but not later than 6 months from the close of the Financial Year.
8. Agree to submit to the Bank such financial statements as may be required by the Bank from time to time in addition to the set of such statements to be furnished by the borrower to the Bank as on the date of publication of the borrowers annual accounts.
9. Lenders will have the right to examine at all times the borrowers books of accounts and to have the borrowers factories inspected, from time to time, by officer(s) of the Bank and/or qualified auditors and/or technical experts and/or management consultants of the Lenders choice. Cost of such inspection shall be borne by the borrower. The commercial terms of the engagement of such auditors/experts/consultants should be mutually agreed between Lenders and the Borrower.
10. Borrower Undertaking to be provided for the following:
    a. Agree for appointment of Lenders Legal Counsel/s (LLC), as per scope of services to be provided by the Lenders, before first disbursement under Facility and agree to bear all expenses including applicable taxes in relation thereto. Borrower may be given opportunity to negotiate commercial terms with shortlisted counsels before appointment of LLC.
    b. Agree to submit a utilization Certificate from Chartered Accountants/authorized signatories of the company at the time of each disbursement certifying the Cost incurred till date.
    c. Have submitted confirmation from Company Secretary that any of the Borrowers directors is not a wilful defaulter.

मुख्य महाप्रबंधक (वित्त)
Chief General Manager (Finance)
नीपको लि., शिलांग
NEEPCO Ltd., Shillong
~ 810 ~

d. Agree that the Borrower shall obtain adequate insurance cover and assign all insurance policies pertaining to the security in favour of Lenders/Lenders trustee.
e. Agree that management control of the Company shall not change (Except with the approval of Government of India) during the currency of the loan without the consent of the Lender
f. Agree that NOC from Kameng project lenders will be obtained within 6 months from the date of first drawdown for security perfection.

23. Pre- Disbursement:

Prior to first disbursement under the facility the Borrower shall, to the satisfaction of the Lenders, have complied with the following conditions:

1. All documentation formalities should have been completed.
2. Ensure assets offered as security for the facility are fully insured.
3. Ensure that all representations and warranties which are made till date of first drawdown are true in all material respects.
4. Undertake to amend Memorandum and Articles of Association of the Borrower to incorporate any change, if required, by Lenders (Subject to board approval).
5. The Borrower shall have executed the necessary undertakings as envisaged in the Term sheet. These shall be legally enforceable.
6. The Borrower shall confirm that there is no Event of Default which has happened and has not been cured or waived in accordance with the terms of the relevant Agreements/Finance documents, and all representations and warranties made by the Borrower in each of the Project Agreements/Finance documents are true or correct.
7. Disbursement of the term loan shall be as per draw down schedule which contains the purpose as enumerated in this term sheet.
8. Any provision contained in any document by which the Borrower is bound, or any law, rule or regulation directly or indirectly shall not restrict the Borrowers borrowing power or authority or ability to borrow the Loans from the Lender(s).
9. No Event of Default is existing as on date of disbursement.

24. Conditions precedent to each disbursement:

The Borrower shall, to the satisfaction of the Lenders, have complied with the following:

1. All representations and warranties which are made till the date of respective drawdown, are true in all material respects;
2. There has been no material adverse change in the business, operations or financial condition of the Borrower and Promoter;
3. No Event of Default has occurred and is continuing or has not been waived or will occur as a result of the drawdown;
4. Submission of end use certificate from a Chartered Accountant / Authorised signatory of the company acceptable to the Lenders before each drawdown, and in the case of the last drawdown, submission of the certificate from the Statutory Auditor/Authorised signatory of the company within a period of 3 months from the last drawdown. The end use certificate shall certify that the funds drawn down have been used for the purpose mentioned in the Financing Agreements.

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मुख्य महाप्रबंधक (वित्त)
Chief General Manager (Finance)
नीपको लि., शिलांग
NEEPCO Ltd., Shillong

25. Other Conditions:

Borrower has to fulfil the following conditions to the satisfaction of the Lenders:

1. Any additional terms / modification in terms required as per changes in statutory/ regulatory / policy (RBI) guidelines, as may be mutually agreed, would be acceptable to the Borrower.
2. The Borrower shall agree that the Lenders shall have the right to stipulate any additional condition (to be decided mutually), as considered necessary, upon occurrence of any event, which may have any material adverse impact on the functioning of borrower.
3. During the currency of credit facilities, if there is any change in nationality of the Borrower (s)/Guarantor (s)/Director (s) loses the citizenship of Indian or acquire (s) the citizenship of any other country, the same has to be advised in writing to the Bank, immediately upon such knowledge by the Borrower.
4. Ministry of Corporate Affairs has notified companies (Restriction on number of Layers) rules 2017 Vide Gazette Notification No. 793 dated 20.09.2017 and the borrower has to comply with the captioned regulations and should submit an undertaking.
5. **Restricted Payment conditions:** Undertake not to declare any dividend during construction/ moratorium period and that during the currency of the Debt, it shall not, without obtaining prior consent of the lenders, declare any dividend:
   a) if it fails to meet its obligations to pay interest and/or instalments and/or other monies,
   b) If there is no cash available for distribution
   c) if the Borrower is in breach of any material covenants and terms of financing and
   d) In the event of occurrence of any Event of Default.
6. Furnish to the Lenders every year a copy of audited annual accounts of the Borrower immediately on finalisation of the same but in any case, not later than 180 days from the end of each relevant accounting period.
7. Permit the Lenders and their authorized officers or employees to carry out technical, financial and legal inspections of the assets created out of the Facility and to visit any facilities and construction sites and to examine any plants, installations, sites, works, buildings, properties, equipment, records and documents relevant to the performance of the obligations of Borrower under the Facility agreement. Any such representative of the Lenders shall have access to Borrowers properties upon suitable prior notice and shall receive full cooperation and assistance from the employees of Borrower provided no material disturbance will be caused to the business and operations of Borrower.
8. At all times comply with the Environmental, Health, Safety, Social (EHSS) and other requirements as required by relevant body/regulatory authority.
9. The Borrower should submit audited financial statements of company to the Lenders.
10. CIRs of company and its subsidiaries/affiliates etc from existing bankers will be obtained.

26. Events of default:

The Lenders reserve the right to call up the Facility, impose any other terms and conditions upon the happening of, interalia, the following Events of Default (each an Event of Default) subject to cure periods (if any) including but not limited to:

मुख्य महाप्रबंधक (वित्त)
Chief General Manager (Finance)
नीपको लि., शिलांग
NEEPCO Ltd., Shillong

i. Any instalment of principal amount or interest on the Facility remaining unpaid beyond their respective due dates;
ii. Any other amounts payable under financing documents remaining unpaid for 30 days beyond their respective due dates;
iii. Material Noncompliance/Event of default with any provisions/ Material breach/Event of
default of obligations of the Borrower under the financing documents.
iv. Non-payment of Borrower, breach of obligations by the Borrower, under the Finance Agreements;
v. Breach of other obligations or default in performance or observance of financial covenants under Financing Documents;
vi. Misrepresentations
vii. Deterioration in the loan accounts in any manner whatsoever having material adverse impact on the Borrowers capacity to repay the loan.
viii. Termination of any financing documents;
ix. Non-maintenance or avoidance of material insurance;
x. Security furnished to secure the loan cease to be effective;
xi. Occurrence of any event or circumstance which is prejudicial to or imperils or depreciates the security given to the Lenders or impact the viability of the company.
xii. Insolvency events effecting the Borrower(s);
xiii. Breach of Obligations/Undertakings of Representation & Warranties by Borrower, as the case may be.
xiv. Material Adverse Change
xv. Execution or distress being enforced or levied against whole or any part of Borrower's property and any order relating thereto is not discharged or stayed.
xvi. A receiver being appointed in respect of the whole or any part of the property of the Borrower and such appointment is not stayed, quashed or dismissed within a period of 30 days;
xvii. Borrower committing breach of any applicable law of the land which may lead to an event of default. Change in management control on occurrence (and continuance beyond stipulated cure period), of an Event of Default, Lenders are entitled to accelerate the Facilities, demand immediate repayment of outstanding amount of the Facilities subject to such cure periods as agreed, appoint nominee director, and have other customary recourse for recovery of dues. Cure Period for Non-Financial EoD shall be 30 days. Nominee director shall continue till the default persists.

27. Consequences of Events of Default

If an Event of Default has occurred and not cured within the cure periods mentioned under Events of Default, the Lender may exercise by giving 30 days notice any one or more of the following actions including but not limited to:

1. Accelerate maturity of the Facility and declare all amounts outstanding in respect of the Facility to be due and payable immediately.
2. Declare the commitments to be cancelled or suspended.
3. Enforce Security.
4. Reset of Spread,
5. Appointment of One (01) Observer or Nominee Director on the Board of the Borrower.
6. Lenders shall have the right to securitize the assets charged and in the event of such securitization, Lenders will suitably inform the Borrower. In addition, Lenders shall have the right to novate/assign the assets charged.

Chief General Manager (Finance)
NEEPCO Ltd., Shillong

7. Rupee Term Lenders and/or RBI and/or CIBIL will have an unqualified right to disclose or publish the name of the Borrower as defaulters in such manner and through such medium as the Rupee Term Lenders or RBI or CIBIL in their absolute discretion may think fit.
8. To convert Debt into Equity.
9. To take any or all such actions available under financing /security documents, and applicable law.

28. Other Covenants

Borrower is required to furnish following declarations.

a) Regarding no specified relative of the Borrower is senior officer of bank, is to be incorporated.
b) Regarding no director in the company, is a director in any bank.
c) Regarding no default in payment of dues to any other lender. All out of pocket expenses as per Banks standard rates and related to the project will also be payable by the company.
d) Borrower is required to submit a declaration at half yearly intervals on the details of accounts opened with other Banks. Further, details of investments in stock markets, mutual funds, NBFCs, ICDs, associate companies, subsidiaries, real estate, etc. made would also be required to be furnished.
e) Two title investigation reports (TIR) will be obtained from two different Banks panel advocates at company's cost and fresh TIRs to be obtained once in every three years at company's cost in case of any mortgage of property.
f) Due Diligence Report Certificate to be submitted half yearly dully certified by practicing Company Secretary.

29. Illegality

In the event, that it becomes illegal for the Lenders to lend or maintain the commitment, the Borrower will repay all amounts outstanding under the Facility to the Lenders and/or the Lenders commitment will be cancelled.

30. Transfer, Assignment & Novation

Lenders shall have a right to sell down/syndicate/novate and /or assign, at its sole discretion, its entire assistance to other banks/financial institutions (in whole or part). Upon a transfer by novation etc., the transferee shall become a lender for all purposes of the Facility and the Facility shall be reduced to the extent of participation by other Lenders.

31. Taxes

All payments to be made by the Borrower under the Facility will be made free and clear of all present and future taxes, levies, imports, duties, withholdings or deductions of any nature. In case of mandatory deductions that can be set off by the Lenders against their income tax liabilities, the Borrower shall deduct such amounts and provide a certificate towards the Same.

32. Expenses

The Borrower shall reimburse the Lender for all costs and expenses, if any, incurred by them in connection with this Facility, including but not limited to processing fees, legal, insurance, other lenders advisors fees, whether or not the Facility proceeds to

मुख्य महाप्रबंधक (वित्त)
Chief General Manager (Finance)
नीपको लि., शिलांग
NEEPCO Ltd., Shillong

signing. The Borrower will also bear its own expenses. Any outstanding fee can be set-off against the proceeds of the first /applicable utilization.

33. Nationality Clause
During the currency of credit facilities, if there is any change in the nationality of the Borrower(s)/Guarantor(s) or any individual Borrower(s)/Director(s)/ Guarantor(s)/ Partner(s) lose(s) the citizenship of India or acquire(s) the citizenship of any other country, the same has to be advised in writing to the Bank, immediately.

34. Indemnity Clause
The Borrower shall indemnify the Bank against all losses, costs, damages expenses whatsoever that the Bank may incur or sustain by reason of any fraud detected in or in respect of any loan or any other financial assistance granted or to be granted to a group company or group establishment of the Borrower or in respect of any security offered or documents executed in respect of such loan or other financial assistance. For the purpose of this clause, group company or group establishment means a subsidiary company or holding company or associate company or a joint venture or any other similar establishment in which the Borrower is having control, influence or substantial interest.

35. Wilful default Clause
The borrower hereby agrees that it shall not induct on its board a person whose name appears in the list of wilful defaulters and in case such person is found to be on its board, it would take expeditious and effective steps for removal of such person from its board. It is further agreed that in the event of failure of the borrower unit to remove a person whose name is found in the list of wilful defaulters from the board, the Bank may at its sole discretion treat the same as an event of default and may call up the advance or the facilities as granted by the Bank.
Opening/Maintaining current account with a Bank outside consortium /MBA without permission will be treated as an act of wilful default.

36. Other conditions

1. Restriction on transactions between related parties/affiliates except when conducted at arms length;
2. All subordinated / unsecured debt infused by sponsors/investors can be repaid after meeting Restricted Payment Conditions
3. Financing Document will contain other conditions as is customary to the transaction of this nature to the satisfaction of Facility Agent;
4. The Borrower shall submit the IT certificate under section 281 on receipt of same from Income Tax Authorities.

37. Security Trustee SBICAPS Trustee Company Ltd will be appointed as Security Trustee.

Mandatory Covenants:

1. The borrower should maintain adequate books of accounts, as per applicable accounting practices and standards, which should correctly reflect its financial position and scale of operations and should not radically change its accounting system without notice to the Bank.
2. The borrower should submit to the Bank such financial statements as may be required by the Bank from time to time in addition to the set of such statements to be furnished by the borrower to the Bank as on the date of publication of the borrower's annual accounts.
3. In case of default in repayment of the loan/advances or in the payment of the interest thereon or any of the agreed instalments of the loan on due date(s) by the borrower, the Bank and/or the RBI will have an unqualified right to disclose or publish the borrower's name or the name of the borrower/unit as defaulters/wilful defaulters in such manner and through such medium as the Bank or RBI in their absolute discretion may think fit.
4. The Bank will have the right to share credit information as deemed appropriate with Credit Information Companies (CICs) or any other institution as approved by RBI from time to time.
5. The borrower should not induct into its Board a person whose name appears in the wilful defaulters list of RBI/ CICs. In case such a person is already on the Board of the borrowing company, it would take expeditious and effective steps for removal of that person from its Board. Nominee directors are excluded for this purpose.
6. In the event of default in repayment to our Bank or if cross default has occurred, the Bank will have the right to appoint its nominee on the Board of Directors of the borrower to look after its interests (for the period of default) Cross default will be defined as:

a. Default by the borrower to any other bank under Consortium/ MBA or
b. Default by the borrower's associate/sister concern/subsidiary to our Bank or
c. Default by the borrower's associate/sister concern/subsidiary to any other Bank

Further, cross default would be deemed to have occurred only in case default to particular lender(s) is not cured within 30 days. **(Exempted for GOI owned entities).**

7. In case of default not corrected within 90 days or restructuring of debt, the regulatory guidelines provide for conversion of debt to equity. The Bank shall have the right to convert loan to equity or other capital in accordance with the regulatory guidelines. Further, in such a scenario, the borrower agrees to facilitate the process of conversion of loan to equity or other capital. In case of listed company approval of shareholders to be obtained.
8. Bank will have the right to examine at all times the borrowers books of accounts and to have the borrowers factories inspected, from time to time, by officer (s) of the Bank and/or qualified auditors and/or technical experts and/or management consultants / appoint Agency for Specialized Monitoring(ASM) of the Banks choice and conduct Stock and Receivable Audits at the prescribed periodicity as per Banks laid down guidelines. Cost of such inspections/ Audits shall be borne by the borrower.
9. After provision for tax and other statutory liabilities, the Bank will have first right along with other secured lenders as per arrangement of security sharing on the profits of the borrower for repayment of amounts due to the secured lenders, in case of payment default to the lenders is not cured within 90 days. (unless expressly permitted otherwise by any law for the time being in force).

Chief General Manager (Finance)
नीपको लि., शिलांग
NEEPCO Ltd., Shillong
~816~

10. The borrower shall keep the Bank informed of the happening of any event likely to have a substantial effect on their profit or business: for instance, if, the monthly production or sales are substantially less than what had been indicated, the borrower shall immediately inform the Bank with explanations and the remedial steps taken and/or proposed to be taken. Further, for listed corporates, the borrower will inform the Bank simultaneously along with Stock Exchange(s) For the purpose of this covenant, substantial effect on their profit or business would mean adverse variance of 5 % or more.
11. Effect any change in the borrowers capital structure where the shareholding of the existing promoter(s) (a) gets diluted below current level or (b) leads to dilution in controlling stake for any reason (whichever is lower), without prior permission of the Bank - for which 60 days prior notice shall be required.
12. The borrower will utilise the funds for the purpose they have been lent. Any deviation will be dealt with as per RBI guidelines and terms of sanction.
13. Promoters shares in the borrowing entity should not be pledged to any Bank/NBFC/Institution outside the consortium/multiple banking arrangement without our prior consent.
14. Penal interest will be charged in case of breach of any two of the four parameters vis-a-vis values as approved by the sanctioning authority in the sanction note. The penal interest will apply from the day after the date of ABS, and shall continue till the breach is cured.

    Parameters for annual testing:
    a) DSCR - 1.20
    b) Interest Coverage Ratio - 1.50
    c) FACR - 1.20
    d) Long Term Debt/EBITDA - 6.1

    Penalty for adverse deviation for benchmark
    a) Up to 10%: Nil
    b) >10%: 0.50% p.a.

15. Each of the following events will attract penal interest/ charges as applicable, at rates circulated from time to time, over and above the normal interest applicable in the account:
    a. For the period of overdue interest/instalment in respect of Term Loans.
    b. Non-submission of Audited Balance Sheet within 6 months of closure of financial year.
    c. Non-submission of review/renewal data at least one month prior to due date.
    d. Non-renewal of insurance policy(ies) in a timely manner or inadequate insurance cover
16. In the event of default, not corrected in 90 days, the Bank shall have the right to securitize the assets charged and in the event of such securitization, the Bank will suitably inform the borrower (s) and guarantor(s). In addition, the Bank shall have the right to novate/assign the assets charged.
17. The borrower shall keep the Bank advised of any circumstance adversely affecting the financial position of subsidiaries/group companies or companies in which it has invested, including any action taken by any creditor against the said companies legally or otherwise.

M/s NEEPCO

Further, for the purpose of this covenant, adversely affecting the financial position of subsidiaries/group companies or companies in which it has invested would mean impact on TNW of the particular entity by 10% or more.

18. Borrowers to submit Certificate on quarterly basis furnishing details of accounts opened with other banks and Details of investments made in Stock Markets, Mutual Funds, NBFCs, ICDs, Associate Companies, Subsidiaries, Real Estate etc., Due Diligence Report etc.
19. Borrowers to obtain ECGC coverage on Foreign Bank Guarantee issued.
20. Security to be created as per the approved schedule. / Banks. Approval for delay in creation and perfection of securities is required.

Mandatory Negative Covenants:

1. Formulate any scheme of amalgamation or reconstruction or merger or demerger
2. Any New project or Scheme of expansion or Acquisition of fixed assets if such investment results in breach of financial covenant(s) or diversion of working capital funds for financing long term assets.
3. Invest by way of share capital in or loan or advance funds to or place deposits with any other concern (including group companies); normal trade credit or security deposits in the ordinary course of business or advances to employees can, however, be extended. Such investment should not result in breach of financial covenants relating to TOL/Adj. TNW and current ratio agreed upon at the time of sanction.
4. Enter into borrowing arrangement either secured or unsecured with any other bank, financial institution, company or otherwise or accept deposits which increases indebtedness beyond permitted limits, stipulated if any at the time of sanction.
5. Issue any guarantee or letter of comfort in the nature of guarantee on behalf of any other company (including group companies).
6. Declare dividends for any year except out of profits relating to that year (Except with the approval of shareholders) after making all due and necessary provisions and provided further that no default is subsisting in any repayment obligations to the Bank.
7. Create further charge, lien or encumbrance over the assets charged to the bank or any part thereof in favour of any financial institution, bank, company, firm or persons, except as permitted by the Lender.
8. Sell, assign, mortgage or otherwise dispose of any of the fixed assets charged to the Bank. However, fixed assets to the extent of 5% of Gross Block may be sold in any financial year provided such sale does not dilute FACR below minimum stipulated level.
9. Enter into any contractual obligation of a long term nature (i.e. 2 years or more) or which, in the reasonable assessment of the Bank, is detrimental to lenders interest.
10. Change the practice with regard to remuneration of directors by means of ordinary remuneration or commission, scale of sitting fees etc. except where mandated by any legal or regulatory provisions. **(Not Applicable to the corporates with ECR of "AA" (includes + and -) and better rated).**
11. Any trading activity other than the sale of products arising out of its own manufacturing operations.
12. Transfer of controlling interest or making any drastic change in the management set-up including resignation of promoter directors (includes key managerial personnel).
13. Repay monies brought in by the promoters/directors/principal shareholders and their friends and relatives by way of deposits/loans /advances. Further, the rate of interest, if any, payable on such deposits/loans/advances should be lower than the rate of

मुख्य महाप्रबंधक (वित्त)
Chief General Manager (Finance)
नीपको लि., शिलांग
NEEPCO Ltd., Shillong

interest charged by the Bank on its term loan and payment of such interest will be subject to regular repayment of instalments to term loans granted/deferred payment guarantees executed by the Bank or other repayment obligations, if any, due from the borrower to the Bank.

14. Opening of Current Account with another bank or a bank which is not a member of Consortium/MBA. For credit facility(ies) under sole banking arrangement, borrower shall confine entire business with financing bank. Further, in respect of credit facilities under consortium/MBA, the borrower agrees to offer to the Bank, on a right of first refusal basis, at least pro rata business relating to remittances, bills/cheque purchase, non-fund based transactions including LCs and BGs, forex transactions and any interest rate or currency hedging business, Merchant Banking, IPO/FPO, capital market transactions, cash management product, vehicle loan etc.
15. Payment of commission to the guarantor(s) for guaranteeing the credit facilities sanctioned by the Bank, except for statutory compliance at arm's length.
16. (a) Change in Machinery/ manufacturer/ cost of machinery
    (b) Modification in repayment period of term loans whose weighted average maturity is not extended.
    (c) Disbursement of term loan by way of reimbursement of expenditure incurred within one year of date of sanction.
17. Issuance of BGs with auto renewal clause. (Except in favor of Govt Departments for business purposes)

मुख्य महाप्रबंधक (वित्त)
Chief General Manager (Finance)
नीपको लि., शिलांग
NEEPCO Ltd., Shillong

M/s NEEPCO

ANNEXURE- XVII(ii)

HDFC BANK
We understand your world

OFFER LETTER

Ref No.: CAM011807220006

Date: 15-09-2022

To,
M/s North Eastern Electric Power Corporation Limited
Brookland Compound Lower New Colony Dist.East
Khasi Hills Shillong Meghalaya 793003 India

Subject: Offer Letter towards Credit Facilities of M/s North Eastern Electric Power Corporation Limited

Kind Attention: Mr. Baidyanath Maharana

With reference to our ongoing discussions, HDFC Bank Limited ("**Bank**", which expression, unless it be repugnant to the context or meaning thereof, shall include its successors and assigns) is pleased to share the Offer letter ("**Offer Letter**") towards Credit Facility/ies to **M/s** North Eastern Electric Power Corporation Limited ("**Borrower**", which expression, unless it be repugnant to the context or meaning thereof, shall include its successors and liquidators) as per the terms and conditions mentioned hereunder:

Please note that this Offer Letter does not constitute a commitment to lend and / or to arrange financing and the purpose of this Offer Letter is to lay down the broad terms of proposed financing arrangement. Availability of credit facilities mentioned in this Offer Letter is subject to the acceptance of the terms and conditions mentioned herein, execution of documents for the Credit Facility/ies, security, guarantee etc., and submission of other required documents, including detailed below ("**Transaction Documents**"), unless specifically waived by the Bank, compliance of conditions mentioned for various facilities, completion of internal due diligence and the Bank intimating to the Borrower the availability of facilities for utilization by the Borrower by way of sanction letter ("**Sanction Letter**").

The Credit Facility/ies mentioned herein, shall not be treated as "sanctioned limit" unless each of the above actions have been completed, and the sanctioned limit may vary / be reduced from the amounts mentioned herein (in the table/annexure/schedule below) in the Bank's absolute discretion depending upon the Bank's due diligence mentioned above. The amount of the Credit Facility/ies that shall be mentioned in the Sanction Letter shall be treated as the 'sanctioned limit' of the credit facilities mentioned below. The utilisation of the sanctioned limits or any part thereof or request therefor by itself shall amount to irrevocable and unconditional acceptance by the Borrower of the Sanction Letter(s), without any further deed act or writing or signatures from the Borrower in this regard, and any acceptance by way of signing etc. shall not be required therefor. Such Sanction Letter shall be deemed to be a part of the Transaction Documents. However, the execution of the Transaction Documents by itself by the Borrower, Guarantors, security providers etc. shall irrevocably bind each of them vis-à-vis the Bank.

1.	Borrower	**M/s North Eastern Electric Power Corporation Limited**
2	Name(s) of Directors	• Mr. Bimal Chand Oswal • Mr. Anil Kumar • Mr. Rajeev Kumar Vishnoi • Mr. Ujjwal Kanti Bhattacharya • Mr. Jithesh John

Chief General Manager (Fin.) C T
NEEPCO Ltd., Shillong-793003

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		• Mr. Baidyanath Maharana • Mr. Viveka Nand Paswan
3.	Guarantors	• Not applicable
4.	Aggregate amount of proposed Credit Facility/ies	**Rs. 5,000,000,000.00/- (Rupees Five Billion only)**
5.	Details of Credit Facility/ies	As per Annexure I
6.	Purpose	To finance redemption of Bonds and general CAPEX requirements
7.	(a) Rate of Interest	As per Annexure I
	(b) Interest Servicing	Monthly
	(c)Additional Interest	As per Annexure I
	(d) Prepayment charges	As per annexure 1
8.	Fees & Charges	
	(a) Processing Fees (non-refundable)	Upfront INR 75.0 Lacs (Rupees Seventy Five Lacs Only) inclusive of taxes
	(b) Annual Renewal Fees	Nil
	(c) Stock Audit Charges	Not applicable
	(d) ROC Filing Charges (in case of Pvt. / Public Ltd company only)	All costs / expenses in this regard shall be borne by the Borrower on actual Basis (If applicable)
	(e) Foreclosure Charges	As mutually Agreed
	(f) Issuance of Solvency Certificate	As mutually Agreed
	(g) Insurance charges	All costs / expenses in this regard shall be borne by the Borrower on actual Basis (If applicable)
	(h)Any other charges (pls specify)	As mutually agreed
9.	Security	
	(a)Primary	As per Annexure I
	(b)Collateral	As per Annexure I
10	a) Other Covenants / Specific Requirements	As per Annexure I
	b) Stock Statement	Not Applicable
	c) Documentation	As per Annexure I
	d) Plant Visit	Annually
	e) Quarterly/ Half Yearly Financial Results	Semi-annually
	f) Annual Financial Results	Annually 270 days from year end
	g) Insurance	Annually
11	Additional Terms / Information	As per Schedule I & II

Other Terms and Conditions:

1. Subject to clause 2 below, the Bank, based on the representations made by the Borrower and the furnishing of financial statements by the Borrower, has agreed to extend the Credit Facility/ies subject to fulfillment of conditions mentioned in clause 2 below. In addition to the conditions mentioned in clause 2 below, the commitment to grant the proposed Credit Facility/ies is contingent upon:.
   - Absence of any material adverse change in the condition of the Borrower.
   - The Borrower or its Wholly Owned Subsidiaries not having defaulted under any financing obligation to any bank or institution in past.
   - Compliance by the Borrower of all laws and regulations applicable to its operations.
   - The Borrower fulfilling all its financial obligations under various taxation, labour and applicable laws prevalent from time to time

Chief General Manager (Fin.) C T
NEEPCO Ltd., Shillong-793003

2. The Credit Facility/ies is on the main terms and conditions (subject to change as per Reserve Bank of India (RBI) directives / bank policies from time to time) set out in Annexure I hereto which is deemed to be a part of this Offer Letter. The Credit Facility/ies is also subject to the acceptance of the terms and conditions mentioned herein, execution of documents for the Credit Facility/ies, security, guarantee etc., and submission of other required documents, including Transaction Documents, unless specifically waived by the Bank, compliance of conditions mentioned for various facilities, completion of internal due diligence and the Bank intimating to the Borrower the availability of facilities for utilization by the Borrower by way of Sanction Letter.

3. The Credit Facility/ies shall not be available for investments in shares, debentures, advances and inter-corporate loans / deposits to other companies except in ordinary course of business in relation to execution of projects through SPVs but excluding for acquisition of land or purposes prohibited by RBI for bank lending).

4. The said Credit Facility/ies shall be extended at the sole discretion of the Bank and the terms and conditions as well as pricing would be to subject to periodic review, amendment or cancellation. Change in pricing shall be subject to mutual consent of both the parties..

5. The Bank shall have unfettered right to securitise, transfer, assign, in full or in part, without requiring any consents from the Borrower and/or the Guarantor/s, the rights/benefits under the Credit Facility/ies to any third party who shall then replace the Bank and that the Borrower and the Guarantor/s shall be obliged to deal with such person as if they were a party to the grant of the Credit Facility/ies (however at no extra cost of whatsoever nature, including withholding tax, to the Borrower).

6. The Bank shall have the right, without notice to or without any consent of the Borrower, to approach, make enquiries, obtain information, from any person including other banks/finance entities/credit bureaus, Borrower's employer/family members/ officers/ directors/ partners/ promoters/ proprietors/ owners, any other person related to the Borrower, to obtain any information for assessing track record, credit risk, or for estabishing contact with the Borrower or for the purpose of recovery of dues from the Borrower or any other legitimate purpose in the opinion of the Bank.

7. Disclosures:

   a. As pre-condition, relating to the grant of the loans / advances / other non-fund based credit facilities to the Borrower, the Bank requires the Borrower's consent for the disclosure by the Bank of information and data relating to the Borrower of the Loan availed / to be availed by the Borrower, obligations assumed / to be assumed by the Borrower, in relation thereto and default, if any, committed by the Borrower, in discharge thereof, as the said Bank may deem appropriate and necessary to disclose and furnish to Credit Information Bureau (India) Limited and any other agency so authorised in this behalf by RBI.

   b. Further, the Bank shall have the right to not return the photographs, information and documents submitted. The Borrower, including the directors, partners, proprietors, owners, promoters, employees, officers (wherever applicable) further acknowledge and confirm that the Bank shall, without notice to or without any consent of the Borrower (and even for consideration) be absolutely entitled and have full right, power and authority to make disclosure of any information relating to the Borrower including personal information, photographs, details in relation to documents, credit facility, defaults, breaches, asset(s), condition thereof, outstanding dues, Security, obligations of the Borrower, and credit information, KYC data , to any governmental/regulatory/statutory or private agency/entity, RBI, the Bank's other branches/ subsidiaries/ Affiliates/ credit bureau, /credit

information company/rating agencies, information utilities or other entities appointed under IBC, service providers, Group members, other banks / financial institutions, any third parties, any assignees/potential assignees or transferees, any Central KYC Registry or any agency or entity authorised in this regard under Applicable Law, who may need the information and may process the information, publish in such manner and through such medium as may be deemed necessary by the publisher/ Bank/ RBI, including publishing the name as part of willful defaulter's list from time to time or also use for 'know your customer' (KYC) information verification, credit risk analysis, or for other related purposes. With regard to the Bank making disclosure of any information relating to the Borrower(s) as mentioned above to information utilities or other entities appointed under IBC, the Borrower(s) hereby specifically agree to promptly authenticate the 'financial information submitted by the Bank, as and when requested by the concerned information utilities or entities appointed under IBC. The Borrower waives the privilege of defamation, privacy and privity of contract in this regard

c. The Bank/Lender shall be authorised and entitled to disclose / submit the 'financial information' as defined in Section 3 (13) of the IBC read with the relevant Regulations/ Rules framed under IBC, as amended and in force from time to time and as specified there under from time to time, in respect of the Credit/ Financial facilities availed from the Bank/ Lender, from time to time, to any 'Information Utility' ('IU') as defined in Section 3 (21) of IBC, in accordance with the relevant Regulations framed under IBC, and directions issued by Reserve Bank of India to the banks from time to time and hereby specifically agree to promptly authenticate the 'financial information submitted by the Bank/Lender, as and when requested by the concerned IU.

d. Without prejudice to the generality of the above, the Bank shall have the right to publish photographs of the Borrower and/or its promoters, directors, etc. in or through any media including newspapers, journals, magazines, websites, etc. as it may deem fit, in case of any defaults of breaches of this Agreement or any part thereof. The Bank and/or RBI and/or any other relevant person will have an unqualified right to disclose or publish the Borrower's name or the name of the Borrower unit and its directors/ partners/ proprietors as defaulters/ willful defaulters in such manner and through such medium as the Bank or RBI or other relevant person in their absolute discretion may think fit.

8. Stam paper charges for the Credit Facility/ies documents shall be borne and paid by the Borrower only and the Bank shall not be responsible or liable for the same.

9. All terms and conditions relating to the Credit Facility/ies and end use of funds would be subject to RBI regulations and directives from RBI from time to time;cas

10. The Borrower at all times shall comply with the environmental, health, safety and social (EHSS) requirements, all environmental laws and clearances issued there under, and maintenance of documents to be able to demonstrate compliance with the same to the Bank.

11. The Borrower has complied with all Applicable Laws, in relation to the conduct of its business including any laws in relation to anti-bribery or corruption or anti-money laundering regulations as prescribed by RBI or any other Governmental Authority

12. The Borrower has duly paid all statutory dues, including without limitation, statutory dues under the Employees' Provident Funds and Miscellaneous Provisions Act, 1952, and other labour laws, to the extent applicable.

13. The continuation of the Credit Facility/ies shall be at sole and absolute discretion of the Bank and the Borrower's outstanding shall be payable to the Bank on demand. The Bank may at any time in its sole

Chief General Manager (Fin.) C T
NEEPCO Ltd., Shillong-793003

discretion and without assigning any reason call upon the Borrower to pay to the Bank the Borrower's outstanding and thereupon the Borrower shall, within 7 days of being so called upon, pay the whole of the Borrower's outstanding to the Bank without any delay or demur

14. The Borrower hereby agree to allow the officers, or auditors (including Borrower's auditors), technical experts or management consultants appointed by the Bank to inspect its books of accounts and certify including but not limited to end use of funds, from time to time as required by the Bank and Borrower agrees to forthwith, upon demand by the Bank, to extend full co-operation
15. The Borrower (where the Borrower is a company) hereby agrees and undertakes not to induct a person, into its Board of Directors, who is a promoter or director on the Board of a company which has been identified as a willful defaulter or a person who has been declared as a willful defaulter by any Bank/Financial Institution. In case such a person is already a member of the Board of Directors, Borrower would take expeditious and effective steps for the removal of that person from the Board of Directors.

16. The Borrower acknowledges that the Bank reserves an unconditional right to cancel/terminate its right to avail of or make drawals from the unavailed portion of the Credit Facility/ies at any time during the currency of the Credit Facility/ies, without any prior notice to the Borrower.

17. Notwithstanding anything to the contrary in this credit arrangement letter or any other document/arrangement: (i) in respect of all and any of Borrower's present and future liabilities to the Bank, affiliates, group entities, associate entities, parent, subsidiaries, any of their branches (collectively "Relevant Entities"), whether under this credit arrangement letter or under any other obligation/loan/facilities/borrowings/document, whether such liabilities are/be crystallised, actual or contingent, primary or collateral or several or jointly with others, whether in same currency or different currencies, whether as principal debtor and/or as guarantor and/or otherwise howsoever (collectively "Liabilities"), each of the Bank and the Relevant Entities shall in addition to any general lien or similar right to which any of them as bankers may be entitled by law, practice, custom or otherwise, have a specific and special lien on all the Borrower's present and future stocks, shares, securities, property, book debts, all moneys in all accounts whether current, savings, overdraft, fixed or other deposits, held with or in custody, legal or constructive, with the Bank and/or any Relevant Entities, now or in future, whether in same or different capacity of the Borrower, and whether severally or jointly with others, whether for any banking relationship, safe custody, collection, or otherwise, whether in same currency or different currencies; and (ii) separately, each of the Bank and the Relevant Entities shall have the specific and express right to, without notice to and without consent of the Borrower, set-off, transfer, sell, realize, adjust, appropriate all such amounts in all accounts (whether prematurely or upon maturity as per the Bank's discretion), securities, amounts and property as aforesaid for the purpose of realizing or against any of dues in respect of any of the Liabilities whether ear-marked for any particular Liability or not, combine or consolidate all or any of accounts of the Borrower and set-off any monies, whether of same type or nature or not and whether held in same capacity or not including upon happening of any of the events of default mentioned in any of the documents pertaining to the respective Liabilities or upon any default in payment of any part of any of the Liabilities. (iii) the Bank and the Relevant Entities shall be deemed to have and hold and continue to have first charge on any assets including any deposit on which security has been/will be created in respect of the Credit Facility/ies, as security also for any of the other Liabilities and all the rights and powers vested in the Bank in terms of any security or charge created for the Credit Facility/ies shall be available to the Bank and/or the Relevant Entities also in respect of such other Liabilities, irrespective of the fact whether the Credit Facility/ies is at any time outstanding, repaid or satisfied or not and even after the Credit Facility/ies has been repaid or prepaid.

18. None of the directors or other members of the governing body of the Borrower is a director or 'relative' (as defined under the Companies Act, 2013) of a director of a banking company.

Chief General Manager (Fin.) C T
NEEPCO Ltd., Shillong-793003

19. No director of the Bank is a director, manager, managing agent, employee or guarantor of the Borrower, or of a subsidiary of the Borrower, or of the holding company of the Borrower, or holds substantial interest, in the Borrower or a subsidiary or the holding company of the Borrower and no directors of any other bank holds substantial interest or is interested as director or as a guarantor of the Borrower;

20. No relative (as specified by Reserve Bank of India ("RBI") of a Chairman/Managing Director or director of banking company (including the said Banks) or a relative of senior officer (as specified by RBI) of the Bank, hold substantial interest or is interested as a director or as guarantor of the Borrower.

21. None of the Borrower, their directors or key managerial personnel appear in the list of defaulters issued by the RBI or the CIBIL or any other Credit Information Bureau.

22. The Borrower is a resident in India/constituted/incorporated in India. In addition the Borrower hereby agrees and acknowledges that the Bank may require the Borrower to provide assistance and co-operation in relation to Foreign Account Tax Compliance Act ("FATCA") compliance (including without limitation the provisions of the Income Tax Act, 1961 and the directions of RBI, from time to time), and in this regard hereby agree and undertake to extend full co-operation to the Bank including, without limitation, by (i) furnishing such information, forms, records, reports, data which the Bank may require in this regard, and (ii) permitting the Bank to conduct such due diligence and/ or inspection exercises as the Bank may deem fit in this connection.

23. The Borrower represents, warrants and confirms that neither he nor any person(s) directly or indirectly related to him feature in the list published by the Office of Foreign Assets Control, U.S. Department of the Treasury, from time to time comprising of (i) individuals or companies owned or controlled by, or acting for or on behalf of, targeted countries or groups including, without limitation individuals identified as terrorists or narcotics traffickers, or (ii) individuals and companies that are categorized as 'Specially Designated Nationals' (SDNs) by the Office of Foreign Assets Control, U.S. Department of the Treasury. The Borrower agrees and acknowledges that upon being included the abovementioned lists, the Bank shall be entitled to cancel/ terminate the Facility with immediate effect, and in such event all the amounts due in respect of the Facility shall become immediately due and payable to the Bank

24. The Borrower its directors, promoters, guarantors associate concerns are not on ECGC caution list / specific approval list, RBI's defaulters or caution list, COFEPOSA defaulters list.

25. The Borrower shall :

    a. promptly supply or procure such documents and other evidence as is requested by the Bank in order to carry out necessary due diligence and be satisfied that the Borrower has complied with all necessary "know your customer" or other similar checks under all Applicable Laws pursuant to the transactions contemplated in the documents executed by and between the Borrower and the Bank from time to time for the said Loan (Finance Documents).
    b. not apply for a voluntary winding up or file an application against itself, before any forum under the Insolvency and Bankruptcy Code, 2016 (IBC), or pass any resolution of directors or of members or declaration of partners, for the purposes of/ towards/recommending filing of any proceedings or application for initiation of insolvency resolution process or fast track resolution process or fresh start process or bankruptcy or any kind of insolvency/resolution/liquidation/bankruptcy process by whatever name called in relation to itself.
    c. not undertake any guarantee or issue a letter of comfort in the nature of guarantee, on behalf of any other company (including group companies), or endorse, or in any manner become directly or contingently liable for, or in connection with the obligation(s) of any Person without prior written consent of the Bank.

Chief General Manager (Fin.) C T
NEEPCO Ltd., Shillong-793003

26. The Borrower is required to maintain adequate insurance on all stock, property and other assets which shall be assigned in favour of the Bank within 30 days from the date of disbursement and the Bank shall be marked as the loss payee. The Bank shall keep the insurance current during the term of the Credit Facility/ies. In the event of noncompliance of the same, the Bank reserves the right to obtain insurance in its own name and has the right to debit the Loan Account for the insurance premium.

27. The Bank shall also be entitled to appoint from time to time, directors ("Nominee Directors") on the Board of Directors of the Borrower to look after the Bank's interests. The terms and conditions for appointment and the rights of the Nominee Director and the Bank shall be as more particularly mentioned in the loan documents. The appointment of Nominee Director would be subject to approval of Govt. of India

28. The Borrower shall deliver to the Bank and where applicable, cause the security provider(s) to deliver to the Bank the following, in a form and content acceptable to the Bank:

    a. Certified true copy of the constitutional document and the proof of incorporation of the Borrower/security provider;
    b. In the event the Borrower/security provider is a company incorporated under the provisions of the Companies Act, 1956 or the Companies Act, 2013, a certified true copy of the resolution passed by the board of directors authorising the negotiation and availing of the Credit Facility/ies on the terms of the Credit Facility/ies documents and the execution of the Credit Facility/ies documents and the execution of all other documents as may be required by the Bank in connection with the Credit Facility/ies;
    c. In the event the Borrower is a company incorporated under the provisions of the Companies Act, 1956 or the Companies Act, 2013, a certificate from the statutory auditor that the availing of the Credit Facility/ies is within the limits set out under Section 180(1)(a) and 180(1)(c) of the Companies Act, 2013. The Borrower shall provide a certified true copy of a shareholders resolution approving the availing of the Credit Facility/ies by the Borrower;
    d. Certificate and declaration from Statutory Auditors of the Borrower/ security provider/ guarantor company that they are not in violation of section 185 of the Companies Act 2013
    e. Where the Borrower is:
        (i) an individual and;
        (ii) a partnership firm and any of the partners is a director or;
        (iii) a joint stock company and any of its directors is a director or

a specified near relation of a director of a banking company/ financial institution, or at any time during the currency of this Credit Facility/ies, becomes a specified near relation of a director of a banking company/ financial institution, details of the relationship of the Borrower with the director of the banking company/ financial institution;

Provided that, in the event Clauses (e) is not applicable and unless otherwise declared to the Bank in writing, the Borrower hereby declares that he is not a director or specified near relation of a director of a banking company/ financial institution.

29. The Bank will have the right to review its Credit Facility/ies in case of any change in the ownership, management or control of the Borrower. The Borrower shall immediately inform the Bank of any such changes or proposed changes, if any.

30. Nothing contained in this Offer Letter should be deemed to create any right or obligation or interest whatsoever in favour of or against any party and the Borrower shall execute appropriate Credit Facility/ies documents as mutually agreed between the Borrower and by the Bank and fulfil all those conditions which have been enumerated to convert it into a formal sanction.

Chief General Manager (Fin.) C T
NEEPCO Ltd., Shillong-793003

31. The Bank shall be entitled to report all guarantees (including performance guarantees and Bank Guarantees / SBLC) to the Reserve Bank of India (RBI) in Form ODI-Part I. Guarantees issued by the Bank in favour of Wholly Owned Subsidiaries / Joint Ventures outside India would be subject to prudential norms issued by the Reserve Bank of India (Department of Banking Regulation) from time to time.

32. The Bank shall be entitled to report all guarantees (including performance guarantees and Bank Guarantees / SBLC) to the Reserve Bank of India (RBI) in Form ODI-Part I. Guarantees issued by the Bank in favour of Wholly Owned Subsidiaries / Joint Ventures outside India would be subject to prudential norms issued by the Reserve Bank of India (Department of Banking Regulation) from time to time.

33. Notwithstanding anything contained herein/in the loan agreement/security documents or any other document that has been / may be executed by the Borrower/Security Provider/Guarantor, any payment or recoveries when received by the Bank shall be appropriated towards the following heads in the following order of priority viz.: (i) Firstly, towards interest on fees, costs (including costs of enforcement, preservation, maintenance and protection of secured assets), charges, expenses, and other monies, and on taxes incurred by the Bank (ii) then, towards applicable taxes, fees, costs, charges, expenses and other monies (including towards enforcement, preservation, maintenance and protection of secured assets) incurred by the Bank and the taxes if any on any reimbursements/deemed reimbursements thereof; (iii) then, towards default interest, additional interest, liquidate damages, if any; (iv) then, towards interest on the Facility(ies) (v) then towards prepayment premium/charges and taxes thereon, if any, (v) then, towards repayment of principal amount of the Credit Facility(ies) including Equated Monthly Instalments if any; (vi) then, towards other indebtedness of the Borrower to the Bank. Provided that, the Bank may however change the aforesaid order in its sole discretion and appropriate any payment in any manner and in any order of priority as it deems fit.

34. Payment by Mistake, Accident or Error

(a) Each of the Borrower, guarantor(s) and security provider(s) hereby agrees and confirms that in the event the Bank transfers or remits any money to any Borrower/guarantor/security provider or in its account by mistake, accident or erroneously, which money is, in the sole opinion of the Bank, not due and/or payable to such Borrower/guarantor/security provider, then such Borrower/guarantor/security provider shall be obligated to and shall, without any delay, demur or protest, forthwith and in no event later than one business day of such transfer/remission or on first demand by the Bank (whichever is earlier), return and repay the said money to the Bank in a manner satisfactory to the Bank. Till such return and repayment of the said money by the concerned Borrower/guarantor/security provider to the Bank, the Borrower/guarantor/security provider (as the case may be) shall hold the same in trust for the benefit of the Bank, keep such money segregated from all other moneys of the Borrower/guarantor/security provider and keep it free from any attachment.

(b) Each Borrower, guarantor and security provider hereby acknowledges and agrees and confirms that (i) any non-compliance of the aforesaid obligations shall be a breach of trust and fiduciary duties on the part of the Borrower, guarantor and security provider, respectively; (ii) in case the said Borrower/guarantor/security provider fails to return the money within the timelines as mentioned above, such Borrower/guarantor/security provider shall be liable to pay interest on such money to the Bank at the same rate as applicable to the Credit Facility(ies) granted in terms of this offer letter; (iii) without prejudice to the foregoing, the Bank shall have the right to, at its sole and absolute discretion (a) debit any account or accounts of the Borrower/guarantor/security provider maintained with the Bank and recover such money, under intimation to concerned Borrower/guarantor/security provider, and/or (b) recover such money from the future disbursements (if any) of the Credit Facility(ies) and/or any other monies by the Bank to the Borrower/ guarantor/security provider;

(c) Each Borrower, guarantor and security provider further agrees that such money which has been transferred or remitted by the Bank to any of the Borrower/guarantor/security provider or in its account by mistake, accident or erroneously, shall be deemed to be a part of the total outstanding said dues payable by the concerned Borrower/guarantor/security provider to the Bank in terms of this offer letter, the loan agreement/security documents or any other document that has been/may be executed by the Borrower/guarantor/security provider (respectively) in relation to the Credit Facility(ies), in case and till such time that the said money has not been returned and repaid to the Bank in the manner as stated above.

35. Acceptance, Signing, Delivery, Execution of this Document/Agreement

This document may be accepted by the Borrower physically or electronically, as under:

A. Physical acceptance (wet signature) by the Borrower:

In case the document is accepted physically by the Borrower, the physical signature clauses at the end of this document shall apply. However, in case the document is electronically accepted by the Borrower as mentioned in (B) below, then the physical signature of the Borrower shall not be required and the physical signature fields at the end of the document, though appearing there, shall be treated as non applicable.

B. Electronic acceptance by the Borrower:

In case of electronic acceptance of this document by the Borrower, the following shall apply:

The Borrower hereby expressly acknowledges and confirms that it/its authorized signatory(ies) on its behalf, has/ve read, verified, understood this Document and the Borrower has irrevocably agreed to and accepted, signed and delivered this document including all the terms and conditions contained in this document/terms and conditions/agreement, the Schedules thereto (collectively, "**Document**"), by way of electronic signature (e-sign) or digital signature (of the Borrower in case of an individual, or of the authorized signatories of the Borrower in case of the non-individual) or any electronic authentication technique, and no other further act, deed or writing or any physical or wet signature or acceptance on part of the Borrower shall be required for signing, acceptance and delivery by the Borrower.

The acceptance, signing and delivery by/for and on behalf of the Borrower is complete and absolute as above.

The Borrower also acknowledges that the execution of the offer letter would be complete only once the same is accepted by the Bank and all the conditions specified are complied. The Bank also does not require to sign the Documents in any physical form. Subsequent to signing of the Borrower as above, the Bank shall be deemed to have accepted this document: (i) either, online by way of the Bank sending an email communicating such completion, from its relevant office/ branch to the Borrower and attaching therewith the copy of this document, or (ii) by way of counter-signing or initialing at the hands of its officer the Relevant Extract of this document or (iii) by way of by way of electronic signature (e-sign) or digital signature by its officer.

Upon signing of this Document by the Borrower this document and any electronic copy made by/on behalf of the Bank thereof shall be deemed and treated as an original Document. The Bank may print paper copies of the electronic record or produce in any such form at its discretion, of this Document and/or of logs/records of signing by the Borrower as aforesaid, and the same shall be fully binding on the Borrower. The Borrower has

no objection to such print-outs or any such other form (in the discretion of Bank) being produced by the Bank including in evidence in any court, tribunal or otherwise, to prove the signing, acceptance, execution as above, as well as the contents of the contract

SCHEUDLE 1
ADDITICNAL TERMS/INFORMATION

ADDITIONAL SCHEDULE-CUM-KEY FACT STATEMENT

This additional Schedule / Key fact statement shall be in addition to and not in derogation of the commercials covered in the existing Schedule/Key fact statement of the loan agreement and that the details incorporated in this additional Schedule/Key fact statement shall be deemed to be part of the loan agreement executed / to be executed and are deemed to be replicated in the said loan agreement.

SMA (Special Mention Account)	
SMA Sub-categories	Basis for classification – Outstanding balance remains continuously in excess of the sanctioned limit or drawing power, whichever is lower, for a period of:
SMA-1	More than 30 days and up to 60 days
SMA-2	More than 60 days and up to 90 days

Examples of SMA (Special Mention Account)
If Outstanding Balance of Account as on March 31, 2021 day end process is Rs.1,00,000 and the Sanctioned Limit/Drawing Power is Rs.90,000 and if it continues to remain overdue, then this account shall get tagged as SMA-1 upon running day-end process on April 30, 2021 i.e. upon completion of 30 days of being continuously overdue. Accordingly, the date of SMA-1 classification for that account shall be April 30, 2021. Similarly, if the account continues to remain overdue, it shall get tagged as SMA-2 upon running day-end process on May 30, 2021 and if continues to remain overdue further, it shall get classified as NPA upon running day-end process on June 29, 2021.
Definition of Account as 'out of order'
i. the outstanding balance in the CC/OD account remains continuously in excess of the sanctioned limit/drawing power for 90 days, or ii. the outstanding balance in the CC/OD account is less than the sanctioned limit/drawing power but there are no credits continuously for 90 days, or the outstanding balance in the CC/OD account is less than the sanctioned limit/drawing power but credits are not enough to cover the interest debited during the previous 90 days period the account will be classified as NPA
Examples of ' Out of Order '
a) If Outstanding Balance of Account as on March 31, 2021, day end process is Rs.1,00,000 and the Sanctioned Limit/Drawing Power is Rs.90,000 and if it continues to remain overdue, it shall get classified as out of order upon running day-end process on June 29, 2021 and account will be classified as NPA b) If Outstanding Balance of Account as on June 28, 2021, day end process is Rs.70,000 and the Sanctioned Limit/Drawing Power is Rs.1,00,000 & interest debited from March 31, 2021 till June 29 2021 is Rs. 30000. If the credits in the account during the period from March 31, 2021 to June 28, 2021 are less than Rs 30,000, it shall

Chief General Manager (Fin.) C T
NEEPCO Ltd., Shillong-793003

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get classified as out of order upon running day-end process on June 29, 2021 and account will be classified as NPA.
M/s North Eastern Electric Power Corporation Limited Authorized Signatories Signed and delivered by / for and on behalf of the Borrower and Co-Borrower(s)

Additional Schedule cum Key Fact Statement for Term Loan Facilities

This additional Schedule / Key fact statement shall be in addition to and not in derogation of the commercials covered in the existing Schedule / Key fact statement of the loan agreement and that the details incorporated in this additional Schedule / Key fact statement shall be deemed to be part of the loan agreement executed / to be executed and are deemed to be replicated in the said loan agreement.

Principal & Interest Break Up		
*Total Amount to be Paid	*Principal Loan Amount	*Interest
Shall be communicated by the bank to the Borrower vide a letter	As per Facility amount referred in Term Loan Annexure of this letter.	Shall be communicated by the bank to the Borrower vide a letter.
*** Amount will be subject to change depending on change in interest rate due to external benchmark on date of disbursement. Bank will send repayment schedule to customer within 7 days from date of disbursement.**		

EMI Due Dates			
EMI Start Date	EMI shall commence on the date of booking of the loan, and the same shall be communicated by the bank to the Borrower vide a letter.	EMI End Date	Shall be communicated by the bank to the Borrower vide a letter.

EMI start date post completion of Principal and/or Interest Moratorium, where applicable.	
EMI Start Date	EMI shall commence on the date of booking of the loan, and the same shall be communicated by the bank to the Borrower vide a letter.

SMA
If due date of a loan account is March 31, 2021, and full dues are not received before the lending institution runs the day-end process for this date, the date of \ overdue shall be March 31, 2021. If it continues to remain overdue, then this account shall get tagged as SMA-1 upon running day-end process on April 30, 2021 i.e. upon completion of 30 days of being continuously overdue. Accordingly, the date of SMA-1 classification for that account shall be April 30, 2021.

NPA
If the account continues to remain overdue, it shall get tagged as SMA-2 upon running day-end process on May 30, 2021, and if continues to remain overdue further, it shall get classified as NPA upon running day-end process on June 29, 2021.

Chief General Manager (Fin.) C T
NEEPCO Ltd., Shillong-793003

M/s North Eastern Electric Power Corporation Limited

Chief General Manager (Fin.) C T
NEEPCO Ltd., Shillong-793003

Authorized Signatories
Signed and delivered by / for and on behalf of the Borrower and Co-Borrower(s)

SCHEDULE II
ENVIRONMENTAL, SOCIAL AND GOVERNANCE POLICY

1. Definitions

1. In these presents unless there is anything in the subject or context inconsistent therewith, the capitalized terms listed below shall have the following meanings:

"**Applicable Law**" shall mean any act, statute, law, regulation, enactment, ordinance, treaty, rule, judgment, order, award, decree, bye-laws, rule of common law, clearances, directions, directives, guidelines, policy, licenses, requirement, or any governmental restriction or condition including any similar form of decision of, or determination, application or execution by, or any interpretation or pronouncement having the force of law of, any Governmental Authority having jurisdiction over the matter in question, whether in effect as of the Effective Date or thereafter;

"**Environmental Claim**" shall mean any claim, proceeding, formal notice or investigation by any Person in respect of any Environmental Law;

"**Environmental Law**" shall mean any Applicable Law in any jurisdiction in which the Borrower conducts business which relates to the pollution or protection of the environment or harm to or the protection of human health or the health of animals or plants;

"**Environmental Permits**" shall mean any approval, no objection, permit, consent, license, filing of any notification, report or assessment required under any Environmental Law;

"**Governmental Authority**" shall mean the Government of relevant jurisdiction or government of any province or state or any other political subdivision thereof; any entity, authority or body exercising executive, legislative, judicial, quasi-judicial, regulatory or administrative functions of or pertaining to a government, including any government authority, agency, department, board, commission or instrumentality thereof, any court, tribunal and any self-regulatory organization;

"**Labour Law**" shall mean any Applicable Law in any jurisdiction in which the Borrower conducts business which relates to the workmen, labour, employees, wages, compensation, salaries, benefits or their welfare, security, safety, health etc. and shall include laws in relation to bonuses, gratuity, pension, provident fund, work environment, working conditions, timings, etc., as also prohibitions in relation to employment or deployment of child labour, underage labour or forced or bonded labour.

Chief General Manager (Fin.) C T
NEEPCO Ltd., Shillong-793003

2. Capitalized terms used herein and not defined herein shall have the respective meanings assigned to the same in this Agreement.

2. Representations and Warranties

The Borrower makes the following representations and warranties on the day of this Agreement. These representations and warranties shall be repeated, by reference to the facts and circumstances then existing, on each day, until the termination of this Agreement.

1. The Borrower is in compliance with all Environmental Laws, Labour Laws and the Applicable Laws in relation to anti-bribery, corruption, and anti-money laundering, including regulations as prescribed by RBI or any other Governmental Authority, in relation to the conduct of its business.
2. The Borrower is in compliance with the conditions of the Environmental Permits (and shall maintain at all times necessary documents to demonstrate the same) and no Environmental Claim has been made or threatened against it which may have an adverse effect on its business and operations.
3. There are no facts, circumstances or conditions relating to the Borrower which may give rise to any material Environmental Claims or any claims related to violation of any Applicable Laws including anti-bribery or corruption or anti-money laundering laws.
4. The Borrower shall implement and will continue to implement, policies and procedures, and organisational, structural and technical measures and systems, to ensure continuous compliance with all the Environmental Laws, Environmental Permits, Labour Laws, human rights laws/standards, anti-corruption or anti-bribery laws, including to handle any environmental pollution in accordance with the Applicable Law, to ensure that the Borrower or its activities do not constitute its contribution to global warming or climate change beyond the acceptable norms as per the protocols or laws applicable to the particular jurisdictions, as also to ensure employees' safety and welfare.
5. There are no underage persons in the employment of the Borrower in any capacity whatsoever. The Borrower has not employed or deployed or availed services of any child labour or forced or bonded labour.
6. There are no circumstances relating to social, environmental, labour, health and safety laws in connection with the Borrower, which could reasonably be expected to have any material adverse effect on the Borrower's business activities, or have any effect on the Borrower's ability to service the Loan. The Loan amount availed will not be utilized for any activities which would be in violation of any Environmental Laws or Labour Laws.
7. The Borrower is an equal opportunity employer and does not practice any discrimination including basis gender while recruiting persons for any job profile under the business activities of the Borrower.

3. Covenants

The Borrower shall, at all times till the date of termination of this Agreement, comply with the environmental, health, safety and social requirements as per prevailing Environmental Laws and Labour Laws. The Borrower shall:

1. not do any act or indulge in any activities or make any omissions or commissions which may result in the breach of an Environmental Law or which could give rise to a material Environmental Claim;

2. take corrective measures as suggested by the Bank, if any, to rectify the deficiency/shortcomings pointed out by the Bank, if any, in its social, environment, health, labour, safety and environmental compliance and furnish such information as the Bank may from time to time require in relation thereto;

3. ensure timely payment of salary, daily wages and statutory dues to the all the employees, workmen, labour, etc., under all applicable Labour Laws, including without limitation, the statutory dues under the Employees' Provident Funds and Miscellaneous Provisions Act, 1952

4. provide requisite information, relevant reports/policies in relation to the foregoing and provide access to the Bank to carry out periodic environmental or social audit of the business activities of the Borrower, as and when required by the Bank;

5. inform the Bank forthwith upon the occurrence of any social, labour, health and safety, security or environmental incidents, accidents or any other circumstances which could reasonably be expected to have any material adverse effect on the Borrower's business activities, or have any effect on the Borrower's ability to service the Loan

This Offer Letter is valid for a period of thirty (30) days from the date of issuance hereof and should be accepted by the Borrower prior to the expiry of the said period of thirty (30) days.

Kindly sign and return the duplicate of the Offer Letter as a token of your acceptance of the terms and conditions thereof. Kindly also call on our Relationship Manager **Mr Gaurav Ladha** for execution of necessary Credit Facility/ies documents and for further steps.

We look forward to partner you in your business.

Yours Sincerely,

Mr Gaurav Ladha Relationship Manager Corporate Banking Group	**Mr. Pravin Jain** Regional Head Corporate Banking Group HDFC BANK LIMITED BY THE HANDS OF AUTHORISED SIGNATORY

Accepted and Confirmed on behalf of:
M/s North Eastern Electric Power Corporation Limited

Authorized Signatories
(Affix rubber stamp here)
Chief General Manager (Finance)
NEEPCO Ltd., Shillong-793003

HDFC BANK
We understand your world

ANNEXURE I
(TERMS OF THE CREDIT FACILITY/IES)

1.	Borrower Name	North Eastern Electric Power Corporation (NEEPCO) Limited
2.	Promoter	NTPC Limited
3.	Facility Name	Rupee Term Loan – Secured
4.	Limit	Rs. 5,000,000,000.00/- (Rupees Five Billion only)
5.	Purpose	To finance redemption of Bonds and general CAPEX requirements. End use certificate is required from CA, same to be provided within 30 working days from the date of each disbursement
6.	Tenor	8 years from date of first drawal with 2 years moratorium
7.	Security	Movable Fixed assets - Hypothecation of the fixed assets of the property at Pare Hydro Power Station - Arunachal Pradesh on First Pari Passu basis. Security to be perfected within 60 days from date of sanction.
8.	Margin	Nil
9.	Rate of Interest / Commission	3 month T-Bill plus margin of 1.79%.
10.	Interest payment frequency	Interest shall be payable at monthly rests. Interest shall be payable on the first day of the subsequent month.
11.	Interest calculation method	Interest will be calculated on days basis in respect of rupee loans / credit facilities. Further the interest rate reset will be on quarterly basis. The benchmark would be from 1st drawal date
12.	Penal Interest	At 2.00 % p.a. in addition to interest rates as mentioned above, for all overdue/ delays of any monies payable (principal as well as interest).
13.	Documentation to be completed before disbursement	• Request Letter cum Undertaking • Certified True Copy of constitutional document of Borrower • Accepted and Acknowledged Sanction Letter • Board Resolution from Borrower • Signature verification of all authorized signatories of Borrower • Undertaking that the term loan proceeds not to be invested in capital market or real estate exposure • Loan Agreement with SEMS • Deed of Hypothecation • CHG 1 to be filed within 30 days. • Annexure I &II • Pari Passu Letter to be exchanged • Undertaking under sec 180 (1)(a) and 180(1)(c) • Certified Insurance copies of the securities provided with bank clause. • Any other document as stipulated by the Bank from time to time.
14.	Availability Period	Up to 31 Dec 2023
15.	Drawdown Schedule	The Borrower shall be allowed to draw the facility on any date during

Chief General Manager (Fin.) C T
NEEPCO Ltd., Shillong-793003

		the availability period in not more than 4 tranches and for not less than Rs.100 crore per tranche
16.	Repayment	The entire facility to be repaid in the following manner: a) There will be a moratorium of 2 years from the date of first drawal which will be reckoned as the "Zero Date". b) Rs.15 crores each will be repaid at the end of the 9th to 20th quarter. c) Rs.25 crores each will be repaid at the end of the 21st to 28thquarter. d) Rs.30 crores each will be repaid at the end of the 29th to 32ndquarter
17.	Pre-payment charges	No pre-payment charges after 3 years irrespective of funding source
18.	Financial Covenants	• Interest Coverage >=1.5x • DSCR >=1.2x, • FACR >=1.2x, • LTD / EBIDTA I<= 6.1x **Interest Coverage Ratio:** (Profit Before Depreciation, Interest & Tax (PBDIT) + Input Tax Credit (if any); less Interest on Working Capital Loan)/ (Interest on Facility and other debts having same seniority as the Facility, for that period). DSCR : (PAT + total interest + depreciation +/- other non cash items)/ (total interest payment + term loan principal repayment) Total debt = sum of all long term debt (including CPLTD), fund based working capital debt including buyers credit, preference shares redeemable within 10 years, but excluding subordinated promoter loans and CCDs **Fixed Asset Coverage Ratio or FACR** shall mean the ratio of (i) to (ii) below: (i) an amount calculated based on the aggregate net book value of the Borrower's fixed tangible assets (including the capital work in progress but excluding the Current Assets, excluding, any revaluation reserve, goodwill and other intangible assets) pertaining to the Project as determined from the audited financial statements of the Borrower, which are charged to the Lenders are part of Security. (ii) the aggregate of the outstanding Facility or other debts having same seniority as the Facility, which are secured by such assets. **Debt/EBITDA ratio:** shall mean the ratio of (i) to (ii) below: (i) An amount equal to the outstanding Facility or other debts having same seniority as the Facility. (ii) The sum of Earnings before Interest, Taxes, Depreciation, and Amortization for the year of the Borrower. For avoidance of doubt, other income, if any, shall also be forming part of the Earnings of the Company.
19.	Other Covenants	• Company to maintain minimum external credit rating of AA during the tenor of the loan.

Chief General Manager (Fin.) C
NEEPCO Ltd., Shillong-793003

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		• Company to remain 100% subsidiary of NTPC Ltd. during the tenor of the loan. Management control of the Company to be with NTPC during tenor of the loan. Any dilution in the shareholding or management control to be with prior written approval of the lenders. • HDFC Bank's terms and conditions should not be inferior to any other term lenders to the Company. • First Pari- Passu charge on assets of Pare hydro project with 1.00x cover • All amended terms communicated from time to time shall continue, as applicable. Any breach of covenant shall be considered as Event of Default • Rating letter covering our facility to be provided within 60 days of disbursement.

Chief General Manager (Fin.) C...
NEEPCO Ltd., Shillong-7...

ANNEXURE - XVIII

UNITED INDIA INSURANCE COMPANY LIMITED

DIVISIONAL OFFICE,LAITUMKHRAH MAIN ROAD NEAR LAITUMKHRAH BEAT HOUSE SHILLONG
KHASI HILLS - EAST - 793003 MEGHALAYA
PHONE: (364) 2226387 FAX: (364) 2222539 EMAIL:

INDUSTRIAL ALL RISK POLICY
POLICY NO.:1308001123P104915823
UIN. IRDAN545CP0001V02200708

PERIOD OF INSURANCE
From 00:00 Hrs of 01/08/2023
To Midnight of 31/07/2024

Insured
- Select - NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED.
KOPILI POWER STATION (200 MW),KPS,UMRONGSO, ASSAM.
CACHAR HILLS - NORTH
788931
ASSAM

Agent Name	:
Agent Code	:
Mobile/Landline Number/Email	:

The genuineness of the policy can be verified through "Verify Your Policy" link at www.uiic.co.in.

For any Information, Service Requests, Claim intimation and Grievances please write to 130000@uiic.co.in

This document is digitally signed

Signer: KALAIVENI SUBBIAH
Date: Wed, Aug 16, 2023 17:20:17 IST
Location: United India Insurance Company Ltd
Reason: Signing Policy for UIIC

POLICY NO.:1308001123P104915823
UIN. IRDAN545CP0001V02200708

INDUSTRIAL ALL RISK POLICY
SCHEDULE

Policy No.	1308001123P104915823		Prev. Pol. No.				
Name Of Insured	- Select - NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED. / 23153604506						
Tel.(O)		Fax		Tel.(R)		Mobile	
Business/Occupation	None			Email			
Period of Insurance	From	00:00 Hrs of 01/08/2023			To	Midnight of 31/07/2024	

CO-INSURANCE DETAILS: UIIC 130800 : 100%
PREMIUM: Three crores seventy-nine lakhs sixty-one thousand nine hundred forty-six rupees only

Sum Insured Details:-

SFSP	₹ 8,754,013,699.82
MBD	₹ 2,279,046,880.91
FLOP	₹ 100,000.00

LOCATION/PREMISES	DESCRIPTION OF RISK	SUM INSURED (₹)
NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED KOPILI POWER STATION (200 MW),,CACHAR HILLS - NORTH,ASSAM-788931	Electric Generation Stations Hydro(2070)	8,754,013,699.82
NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED KOPILI POWER STATION (200 MW),,CACHAR HILLS - NORTH,ASSAM-788931		2,279,046,880.91

S.No	Add-on Cover	Location	Sum Insured(₹)
1	Earthquake	NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED KOPILI POWER STATION (200 MW), CACHAR HILLS - NORTH ASSAM PIN - 788931	8,754,013,699.82
2	STFI Cover		8,754,013,699.82
3	TerrorismCover		8,754,013,699.82

Deductible - As per Terms and conditions.

SECTION II: BUSINESS INTERRUPTION
Annual Gross Profit:- ₹ 100,000.00
Indemnity Period :- > 9 months and <= 12 months

PREMIUM
Section I : ₹ 37,961,543.00
Section II : ₹ 403.00
Total : ₹ 37,961,946.00

21.14

Risks Covered	:	INDUSTRIAL ALL RISK POLICY-COVERS MATERIAL DAMAGE AS WELL AS BUSINESS INTERRUPTION
Special Peril	:	MATERIAL DAMAGE:-FIRE & ALLIED PERILS,BURGLARY AND BREAKDOWN OF MACHINERY,BOILER EXPLOSION & DAMAGE TO ELECTRONIC EQUIPMENTS
Special Excess	:	1)5% of claim amount subject to a minimum of 10 lakhs FOR MATERIAL DAMAGE CLAIM.2)FOR FLOP CLAIMS

Voluntary Deductible Details :
SFSP :

Location Code	AOG Perils Deductible Amount(₹)	Other Perils Deductible Amount(₹)
2318183857	0.00	0.00

Subject to terms, conditions, endorsements, clauses and warranties printed herein
1.Local Authority
2.Following Add-Ons Are Agreed -1. Expediting Expenses Including Airfreight- 5 Crs. 2.Architects Surveyors & Consulting Engineers Fees 1 Cr. 3.Cost Of Demolition And/Or Removal Of Debris Including Foreign Debris / Dewatering Expenses.5 Crs 4.Loss Minimization / Loss Prevention Expenses 1cr.;5.Capital Additions/ Newly Acquired Property/ Interest 5 Crs. 6.Underinsurance-15% For Property/ Material Damage Portion 7.Escalation -5% For Material Damage (Excluding Stock) 8.Omission To Insure Additions Alterations Or Extensions -5 Crs.9. Immediate Repair/ Relief/ Minor Repairs-5 Crs. 10.Temporary Removal Of Stocks -1 Cr; 11.Inland Transit Of Equipment (Within Premises)-1 Cr. (Single Carrying Limit) ;12.Property In The Course Of Construction/ Erection.-5 Crs. ;13. Plans Documents & Computer Records-1 Cr.; 14.Additional Customs Duty-1 Cr.15.Deliberate Damage-1 Cr.;16.Property Not On Insured Premises/Off Premises-1 Cr.17.Shut Down/Start Up Expenses-5 Crs.;18.Professional Accountants -15 Lakhs; 19.Additional Increased Cost Of Working-1 Cr.; 20.Prevention Of Access Actual (Within Treaty Limitations);21.Pair & Set -5 Crs.
3.Following Provisions Shall Be Admitted In The Policy: A) Reinstatement Values . B)Designation Of Property . C)Local Authority . D)Goods Held In Trust . E)Impact Damage Due To Own Vehicles Forklifts Including Overhead And All Type Of Cranes And Construction Equipment. F)72 Hours . G) Waiver Of Subrogation . H)On Account Payment . I) Departmental . J) Alternative Basis . K)Agreed Bank

Net Premium	₹	37,961,946.00
IGST(18%)	₹	6,833,150.00
Stamp Duty	₹	1.00
Total	₹	44,795,096.00
Receipt No.		101130800231057309 28
Receipt Date:		04/08/2023

Agency/Broker Code:	
Dev.Officer Code:	

Financier Details:-

Financier Name	Branch	Agreement Type	Loan Number
SBICAP TRUSTEE COMPANY LIMITED	MUMBAI	Hypothecation	

Customer GST/UIN No.:	18AAACN9991127Q	**Office GST No.:**	17AAACU5552C1ZK
SAC Code:	997137	**Invoice No. & Date:**	112311049 15823 & 04/08/2023
Amount Subject to Reverse Charges-NIL			

We hereby declare that though our aggregate turnover in any preceding financial year from 2017-18 onwards is more than the aggregate turnover notified under sub-rule (4) of rule 48, we are not required to prepare an invoice in terms of the provisions of the said sub-rule.
Anti Money Laundering Clause:-In the event of a claim under the policy exceeding ₹ 1 lakh or a claim for refund of premium exceeding ₹ 1 lakh, the insured will comply with the provisions of AML policy of the company. The AML policy is available in all our operating offices as well as Company's web site.

LET US JOIN THE FIGHT AGAINST CORRUPTION. PLEASE TAKE THE PLEDGE AT https://pledge.cvc.nic.in.

Date of Proposal and Declaration: 01/08/2023
IN WITNESS WHEREOF,the undersigned being duly authorised has hereunto set his/her hand at DO SHILLONG 130800 on this 04th day of August 2023

For United India Insurance Co. Ltd.

Affix Policy Stamp here.

Authorised Signatory
Underwritten By - LUK28289 (DO UNDERWRITER) , Appeoved By - JAI60160(HO UNDERWRITER_FIRE)

Annexure A

INDUSTRIAL ALL RISK POLICY

Name of the Company : UNITED INDIA INSURANCE COMPANY LIMITED

Location of the Risk NORTH EASTERN ELECTRIC POWER CORPORATION LIMITED KOPILI POWER STATION (200 MW), CACHAR HILLS - NORTH ASSAM PIN - 788931

Pincode

7	8	8	9	3	1

S. No.	Block No.	Block Name	Description of Risk	Class of Construction	Sum insured in ₹							
					Building	Plant & Machinery (excluding piping and cabling)	Piping and cabling	Furniture/ Fixtures and fittings, Electrical Installations etc	Stocks	Stocks in process	Others/ Specified Items	Total sum insured
1	1		Electric Generation Stations Hydro(2070)	Non-kutcha	2,599,598,670.10	2,279,046,880.91	0.00	0.00	0.00	0.00	1,875,367,948.81	8,754,013,699.82

INDUSTRIAL ALL RISK INSURANCE POLICY

Section I - Material Damage

In consideration of the insured paying to the United India Insurance Company Limited (hereinafter referred to as the Company), the premium shown in the schedule, the Company agrees (subject to the terms, conditions and exclusions contained herein or endorsed or otherwise expressed hereon which shall so far as the nature of them respectively will permit be deemed to be conditions precedent to the right of the Insured to recover hereunder) that if after payment of the premium any of the property insured be accidentally physically lost or destroyed or damaged other than by an excluded cause during the period of insurance or any subsequent period in respect of which the insured shall have paid and the company shall have accepted the premium required for the renewal of this policy, the company will pay to the insured the actual value of the property at the time of the happening of its accidental physical loss or destruction or damage (being hereinafter termed Damage) or at its option reinstate or replace such property or any part thereof.

Provided that the liability of the Company in respect of any one loss or in the aggregate in anyone period of insurance shall in no case exceed

i) As regards buildings, plants and machinery, furniture, fixture, fittings etc. the cost of replacement or reinstatement on the date of replacement or reinstatement subject to the maximum liability being restricted to the sum insured in respect of that category of the item under the policy.
ii) As regards stocks the market value of the same not exceeding the sum insured in respect of that category of item under the policy.
iii) As regards extension/add-ons stated under the schedule the sum stated under each of the item unless stated otherwise.

EXCLUSIONS

A)EXCLUDED CAUSES

1) This Policy does not cover damage to the property insured caused by:
   - **a)** i) faulty or defective design, defective materials or defective workmanship, inherent Vice, latent defect, gradual deterioration or deformation or distortion or wear and tear
     ii) interruption of the water supply, gas, electricity or fuel systems or failure of the effluent disposal systems to and from the premises.
     unless Damage by a cause not excluded in the policy ensues and then the Company shall be liable only for such ensuing Damage.
   - **b)** i) collapse or cracking of building
     ii) corrosion, rust, extremes or changes in temperature, dampness, dryness, wet or dry, rot fungus, shrinkage, evaporation, loss of weight, pollution, contamination, change in colour or flavour or texture or finish action of light vermin, insects, marring or scratching
     unless such loss is caused directly by Damage to the property insured or to premises containing such property by a cause not excluded in the policy.
   - **c)** i) Larceny
     ii) acts of fraud or dishonesty
     iii) disappearance, unexplained or inventory shortage, misfiling or misplacing of information, shortage in supply or delivery of materials or shortage due to clerical or accounting error.
   - **d)** i) coastal or river erosion
     ii) normal settlement or bedding down of new structures.
2) Damage caused by or arising from: -
   - **a)** any willful act or willful negligence on the part of the Insured or any person acting on his behalf
   - **b)** cessation of work, delay or loss of market or any other consequential or indirect loss of any kind or description whatsoever whether or not following any event that does not fall under any of the exclusions stated under the policy.
3) Damage occasioned directly or indirectly by or through or in consequence of any of the following occurrences, namely: -
   - **a)** war, invasion, act of foreign enemy, hostilities or war like operations (whether war be declared or not), civil war
   - **b)** mutiny, civil commotion assuming the proportions of or amounting to a popular rising, military rising, insurrection, rebellion, revolution, military or usurped power
     In any action, suit or other proceeding where the company alleges that by reason of the provisions of Exclusions A3 (a) and (b) above, any loss or destruction or damage is not covered by this insurance the burden of proving that such loss destruction or damage is covered shall be upon the Insured.
4) **a)** Permanent or temporary dispossession resulting from nationalization, commandeering or requisition by any lawfully constituted authority
   - **b)** Permanent or temporary dispossession of any building resulting from the unlawful occupation of such building by any person
     provided that the company are not relieved of any liability to the Insured in respect of Damage to the property insured occurring before dispossession or during temporary dispossession which is otherwise insured by this Policy
   - **c)** the destruction of property by order of any public authority.
5) Damage directly or indirectly caused by or arising from or in consequence of or contributed confiscation to by: -
   - **a)** nuclear weapons material
   - **b)** Ionizing radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel. Solely for the purpose of this Exclusion Combustion shall include any self-sustaining process of nuclear fission.
6) Loss, damage, cost or expense of whatsoever nature directly or indirectly caused by, resulting from or in connection with any act of terrorism regardless of any other cause or event contributing concurrently or in any other sequence to the loss are excluded. For the purpose of this exclusion an act of terrorism means an act, including but not limited to the use of force or violence and/or the threat thereof, of any person or group(s) of persons whether acting alone or on behalf of or in connection with any organization(s) or Government(s) committed for political, religious, ideological or similar purpose including the intention to influence any Government and/or to put the public, or any section of the public in fear.
   The Policy also excludes loss, damage, cost or expense of whatsoever nature directly or indirectly caused by, resulting from or in connection with any action taken in controlling, preventing suppressing or in anyway relating to action taken in respect of an act of terrorism.
   If the Company alleges that by reason of this exclusion any loss, damage, cost or expenses is not covered by this insurance the burden of proving the contrary shall be upon the Insured.
   In the event any portion of this exclusion is found to be invalid or unenforceable, the reminder shall remain in full force and effect.

B). EXCLUDED PROPERTY

This Policy does not cover:-

1. Money, cheques, stamps, bonds, credit cards, securities of any description, jewellery, precious stones, precious metals, bullion, furs, curiosities, rare books or works of art unless specifically Mentioned as insured by this policy
2. Unless specifically mentioned as insured by this Policy, goods held in trust or on commission, documents, manuscripts, business books, computer systems records, patterns, models, moulds, plans, designs, explosives.
3. **a)** vehicles licensed for road use (including accessories thereon), caravans, trailers, railway locomotives or rolling stock, watercraft, aircraft, spacecraft or the like
   - **b)** property in transit other than within the premises specified in the Schedule
   - **c)** property or structures in course of demolition, construction or erection and materials or supplies in connection therewith
   - **d)** land (including top-soil, back-fill, drainage or culverts), driveways, pavements, roads, runways, railways lines, dams, reservoirs, canals, rigs wells, pipelines, tunnels, bridges, Docks, piers, jetties, excavations, wharves, mining property underground, off-shore property unless specifically covered.
   - **e)** livestock, growing crops or trees
   - **f)** property damaged as a result of its undergoing any process
   - **g)** property undergoing testing. Installation including materials and supplies therefore if directly attributable to the operations of the work being performed thereon unless Damage by a cause not otherwise excluded ensues and then the company will be liable only for such ensuing loss
   - **h)** property more specifically insured
   - **i)** property insured if removed to any buildings or place other than in which it is herein stated to be insured, except machinery and equipments temporarily removed for repairs, cleaning, renovation or other similar purpose for a period not exceeding 60 days.
   - **j)** damage to property which at the time of the happening of such damage is insured by or would for the existence of this policy be insured by any marine policy or policies except in respect of any excess beyond the amount which would have been payable under the marine policy or policies had this insurance not been effected.

DEDUCTIBLES

This policy does not cover the deductibles stated here in in respect of each and every loss as ascertained after the application of all other terms and conditions of the policy including any condition of Average.
Warranted that during the currency of the policy the Insured shall not effect insurance in respect of the amount of the deductibles stated in the schedule.

DEDUCTIBLES

1. Policies having Sum Insured up to INR 100 Crs per location for MD & BI
   Material Damage- 5% of claim amount subject to a minimum of 5 lakhs
   Business Interruption(FLOP)-
   Other than Petro Chemical Risks- 7 days of Standard Gross Profit
   Petro chemical risk- 14 days of Standard Gross Profit
   Business Interruption(MLOP)- 14 days of Standard Gross Profit
2. Policies having Sum Insured up to INR 1500 Crs per location for MD & BI
   Material Damage- 5% of claim amount subject to a minimum of 10 lakhs
   Business Interruption(FLOP)-
   Other than Petro Chemical Risks- 7 days of Standard Gross Profit
   Petro chemical risk- 14 days of Standard Gross Profit
   Business Interruption(MLOP)- 14 days of Standard Gross Profit
3. Policies having Sum Insured above INR 1500 Crs and up to INR 2500 Crs Per location for MD & BI.
   Material Damage- 5% of claim amount subject to a minimum of 25 lakhs
   Business Interruption(FLOP)-
   Other than Petro Chemical Risks- 7 days of Standard Gross Profit
   Petro chemical risk- 14 days of Standard Gross Profit
   Business Interruption(MLOP)- 14 days of Standard Gross Profit
4. Policies having Sum Insured above INR 2500 Crs per location for MD & BI
   Material Damage- 5% of claim amount subject to a minimum of INR 50 lakhs
   Business Interruption-
   FLOP- 14 Days of Standard Gross Profit
   MLOP- 21 Days of Standard Gross Profit
5. Mega Risk Policies- Policies having Sum Insured above INR 2500 Crs per location for MD & BI
   Material Damage- 5% of claim amount subject to a minimum of INR 50 lakhs
   Business Interruption-
   FLOP- 14 Days of Standard Gross Profit
   MLOP- 21 Days of Standard Gross Profit
6. Policies covering Power Plants (excluding Wind and solar) and Steel Plants having per location Sum Insured more than INR 500 Crs for MD &BI
   Material Damage- 5% of claim amount subject to a minimum of INR 1.25 Crs
   Business Interruption-
   FLOP- 30 Days of Standard Gross Profit
   MLOP- 45 Days of Standard Gross Profit
7. Cellular Network Policies
   Material Damage- 5% of claim amount subject to a minimum of INR 5 lakhs
   Business Interruption- 3 Days of Gross Profit
   Note: The limit for sum insured is combined limit for MD + BI per location.

GENERAL CONDITIONS

1. This Policy shall be voidable in the event of mis-representation, mis-description or non-disclosure of any material particular.
2. All insurances under this policy shall cease on expiry of 7 days from the date of fall or displacement of any building or part thereof or of the whole or any part of any range of buildings or of any structure of which such building forms part.
   PROVIDED such a fall or displacement is not caused by a peril not excluded by this policy or such loss or damage would be covered if such building, range of buildings or structure were insured under this policy.
   Notwithstanding the above, the Company subject to an express notice being given as soon as possible but not later than seven days of any such fall or displacement may agree to continue the insurance subject to revised rates, terms and conditions as may be decided by it and confirmed in writing to this effect.
3. Under any of the following circumstances the Insurance ceases to attach as regards the property affected unless the Insured, before the occurrence of any loss or damage, obtains the sanction of the Company signified by endorsement upon the policy by or on behalf of the Company: -
   a) If the trade or manufacture carried on be altered, or if the nature of the occupation of or other circumstances affecting the building insured or containing the insured property be changed in such a way as to increase the risk of loss or damage by Insured Perils.
   b) If the building insured or containing the insured property becomes unoccupied and so remains for a period of more than 30 days.
   c) If the interest in the property passes from the Insured otherwise than by will or operation of law.
4. This Insurance may be terminated at any time at the request of the Insured, in which case the Company will retain the premium at customary short period rate for the time the policy has been in force. This Insurance may also at any time be terminated at the option of the Company, on 15 days' notice to that effect being given to the Insured, only on grounds of mis-representation, fraud, non-disclosure of material facts or non-cooperation of the Insured, in which case the Company shall be liable to repay on demand a rateable proportion of the premium for the unexpired term from the date of the cancellation.
5. a) On the happening of any loss or damage the Insured shall forthwith give notice thereof to the Company and shall within 15 days after the loss or damage, or such further time as the Company may in writing allow in that behalf, deliver to the Company
      i) A claim in writing for the loss or damage containing as particular an account as may be reasonably practicable of all the several articles or items or property damaged or destroyed, and of the amount of the loss or damage thereto respectively, having regard to their value at the time of the loss or damage not including profit of any kind.
      ii) Particulars of all other insurances, if any.
   The Insured shall also at all times at his own expense produce, procure and give to the Company all such further particulars, plans, specification books, vouchers, invoices, duplicates or copies thereof, documents, investigation reports (internal\external), proofs and information with respect to the claim and the origin and cause of the loss and the circumstances under which the loss or damage occurred, and any matter touching the liability or the amount of the liability of the Company as may be reasonably required by or on behalf of the Company together with a declaration on oath or in other legal form of the truth of the claim and of any matters connected therewith.
   No claim under this policy shall be payable unless the terms of this condition have been complied with.
   (b) In no case whatsoever shall the Company be liable for any loss or damage after the expiration of 12 months from the happening of the loss or damage unless the claim is the subject of pending action or arbitration; it being expressly agreed and declared that if the Company shall disclaim liability for any claim hereunder and such claim shall not within 12 months from the date of the disclaimer have been made the subject matter of a suit in a court of law then the claim shall for all purposes be deemed to have been abandoned and shall not thereafter be recoverable hereunder.
6. On the happening of loss or damage to any of the property insured by this policy, the Company may
   a) enter and take and keep possession of the building or premises where the loss or damage has happened.
   b) take possession of or require to be delivered to it any property of the Insured in the building or on the premises at the time of the loss or damage.
   c) keep possession of any such property and examine, sort, arrange, remove or otherwise deal with the same.
   d) sell any such property or dispose of the same for account of whom it may Concern.
   The powers conferred by this condition shall be exercisable by the Company at any time until notice in writing is given by the Insured that he makes no claim under the policy, or if any claim is made, until such claim is finally determined or withdrawn, and the Company shall not by any act done in the exercise or purported exercise of its powers hereunder, incur any liability to the Insured or diminish its rights to rely upon any of the conditions of this policy in answer to any claim.

If the insured or any person on his behalf shall not comply with the requirements of the Company or shall hinder or obstruct the Company, in the exercise of its powers hereunder, all benefits under this policy shall be forfeited.
The Insured shall not in any case be entitled to abandon any property to the Company whether taken possession of by the Company or not.

7. If the claim be in any respect fraudulent, or if any false declaration be made or used in support thereof or if any fraudulent means or devices are used by the Insured or any one acting on his behalf to obtain any benefit under the policy or if the loss or damage be occasioned by the wilful act, or with the connivance of the Insured, all benefits under this policy shall be forfeited.
8. If the Company at its option, reinstate or replace the property damaged or destroyed, or any part thereof, instead of paying the amount of the loss or damage, or join with any other Company or Insurer(s) in so doing, the Company shall not be bound to reinstate exactly or completely but only as circumstances permit and in reasonably sufficient manner, and in no case shall the Company be bound to expend more in reinstatement than it would have cost to reinstate such property as it was at the time of the occurrence of such loss or damage nor more than the sum insured by the Company thereon.
If the Company so elect to reinstate or replace any property the insured shall at his own expense furnish the Company with such plans specifications, measurements, quantities and such other particulars as the Company may require, and no acts done, or caused to be done , by the Company with a view to reinstatement or replacement shall be deemed an election by the Company to reinstate or replace.
If in any case the Company shall be unable to reinstate or repair the property hereby insured, because of any municipal or other regulations in force affecting the alignment of streets or the construction of buildings or otherwise, the Company shall, in every such case, only be liable to pay such sum as would be requisite to reinstate or repair such property if the same could lawfully be reinstated to its former condition.
9. If the property hereby insured shall at the time of reinstatement /replacement repair following a loss or damage indemnifiable under the policy be of greater value than the Sum Insured under the policy then the insured shall be considered as being his own insurer for the difference and shall bear a rateable proportion of loss.
Each item of the policy to which this condition applies shall be seperately subject to the foregoing provision.
Provided however that if the said Sum Insured in respect of such item(s) of the Schedule shall not be less than 85% (Eighty Five percent) of the value of the item(s) thereat,this condition shall be of no purpose and effect.
10. If at the time of any loss or damage happening to any property hereby insured there be any other subsisting insurance or insurances, whether effected by the Insured or by any other person or persons covering the same property, this Company shall not be liable to pay or contribute more than its rateable proportion of such loss or damage.
11. The Insured shall at the expense of the Company do and concur in doing, and permit to be done, all such acts and things as may be necessary or reasonably required by the Company for the purpose of enforcing any rights and remedies or of obtaining relief or indemnity from other parties to which the Company shall be or would become entitled or subrogated, upon its paying for or making good any loss or damage under this policy, whether such acts and things shall be or become necessary or required before or after his indemnification by the Company.
12. If any difference shall arise as to the quantum to be paid under this policy(liability being otherwise admitted) such difference shall independently of all other questions be referred to the decision of an arbitrator to be appointed in writing by the parties in difference, or if they cannot agree upon a single arbitrator, to the decision of two dis-interested persons as arbitrators of whom one shall be appointed in writing by each of the parties within two calendar months after having been required so to do in writing by the other party in accordance with the provision of the Arbitration Act,1940,as amended from time to time and for the time being in force. In case either party shall refuse or fail to appoint arbitrator within two calendar months after receipt of notice in writing requiring an appointment, the other party shall be at liberty to appoint sole arbitrator and in case of disagreement between the arbitrators, the difference shall be referred to the decision of an umpire who shall have been appointed by them in writing before entering on the reference and who shall sit with the arbitrators and preside at their meetings.
It is clearly agreed and understood that no difference or dispute shall be referable to arbitration as hereinbefore provided, if the Company has disputed or not accepted liability under or in respect of this policy.
It is hereby expressly stipulated and declared that it shall be a condition precedent to any right of action or suit upon this policy that the award by such arbitrator, arbitrators or umpire of the amount of the loss or damage shall be first obtained.
13. Every notice and other communication to the Company required by these conditions must be written or printed.
14. At all times during the period of insurance of this policy the insurance cover will be maintained to the full extent of the respective sum insured in consideration of which upon the settlement of any loss under this policy, pro-rata premium for the unexpired period from the date of such loss to the expiry of period of insurance for the amount of such loss shall be payable by the insured to the Company.
The additional Premium referred above shall be deducted from the net claim amount payable under this Policy. This continuous cover to the full extent will be available notwithstanding any previous loss for which The company may have paid hereunder and irrespective of the fact whether the additional premium as mentioned above has been actually paid or not following such loss. The intention of this condition is to ensure continuity of the cover to the insured subject only to the right of the company for deduction from the claim amount when settled of pro-rata premium to be calculated from the date of loss till expiry of the policy.
Notwithstanding what is stated above, the Sum Insured shall stand reduced by the amount of loss in case the insured immediately on occurrence of the loss exercises his option not to reinstate the sum insured as above.

Special Conditions to Section I

1. **Sums Insured :**
   a) For Assets such as Building, Plant & Machinery, FFF, Electrical installations etc.: It is a requirement of this Insurance that the sum insured started in the schedule shall not be less than the cost of reinstatement as if such property (except for stocks) were reinstated on the first day of the Period of Insurance which shall mean the cost of replacement of the Insured items by new items in a condition equal to but not better or more extensive than its condition when new.
   b) For Stocks:
      I. For raw material: Landed Cost as on date of loss at the Insured Premises.
      II. For stock in process: Input Cost of the stock at the time of damage,
      III. For finished stock: The Manufacturing Cost of the finished stock or the Contract Price of goods sold but not delivered and more precisely defined below.
      IV. Contract Price is in respect only of goods sold but not delivered, for which Insured is responsible and with regard to which under the conditions of the sale, the sale contract is cancelled by reason of any damage insured under this Policy either wholly or to the extent of the damage. The Company's liability shall be based on the Contract Price.
   c) Valuable items: Valuable items such as bullion or unset precious stones, any curios or works of art or obsolete machinery and the like are to be covered on Agreed Value basis subject to a valuation certificate being submitted and found acceptable by the company.
2. **Basis of Loss Settlement :** In the event of any loss or destruction or damage the indemnification under this section shall be calculated on the basis of the reinstatement or replacement of the property lost destroyed or damaged, subject to the following provisions:
   a) **Reinstatement or replacement shall mean :**
      i. when property is lost or destroyed, the rebuilding of any buildings or the replacement of any other property by similar property, in either case in a condition equal to but not better or more extensive than its condition when new
      ii. when property is lost or destroyed, the repair of the damage and the restoration of the damaged portion of the property to a condition substantially the same as but not better or more extensive than its condition when new.
   b) **Special Provisions**
      i. The work of reinstatement (which may be carried out upon another site and in any manner suitable to the requirements of the Insured subject to the liability of the Company not being thereby increased) must be commenced and carried out within 12 months after the destruction or damage otherwise no payment beyond the amount which would have been payable under the policy if this special provisions had not been incorporated herein shall be made.
      ii. Where any property is lost destroyed or damaged in part only the liability of the Company shall not exceed the sum representing the cost which the company could have been called upon to pay for reinstatement if such property had been wholly destroyed.
      iii. until the cost of reinstatement or replacement shall have been actually incurred the amount payable under each of the items shall be calculated on the basis of the actual cash value of such items immediately before the loss destruction or damage with due allowance for depreciation for age use and condition (Market value)

   During such settlements, if such market value of the item is greater than the Sum Insured under the policy then the insured shall be considered as being his own insurer for the difference and shall bear a rateable proportion of loss. Each item of the policy to which this condition applies shall be separately subject to the foregoing provision.
   Provided however that if the said Sum Insured in respect of such item(s) of the Schedule shall not be less than 85% (Eighty-Five percent) of the value of the item(s) thereat, this condition shall be of no purpose and effect
3. **Debris Removal:** This policy also covers the necessary expense for the removal of debris of insured property from the described premises as a result of physical loss or destruction or damage insured against under this policy provided the liability is admitted under section I of this policy.

The Company's total liability for debris removal is limited to the amount entered in the Schedule.

Section II - Business Interruption

The company agree that if during the period of insurance the business carried on by the Insured at all the premises specified & listed in the Schedule is interrupted or interfered with in consequence of loss or destruction or damage indemnifiable under Section I, then the company shall indemnify the Insured for the amount of loss as hereinafter defined resulting from such interruption or interference provided that the liability of the company in no case exceeds the total sum insured or such other sum as may hereinafter be substituted therefore by endorsement signed by or on behalf of the company.

Special Exclusions to Section II :

1. This Policy does not cover loss resulting from interruption of or interference with the business directly or indirectly attributable to
   - 1.1 any restrictions on reconstruction or operation imposed by any public authority
   - 1.2 the insured's lack of sufficient capital for timely restoration or replacement of property lost destroyed or damaged
   - 1.3 loss of business due to causes such as suspension, lapse or cancellation of a lease, license or order etc. which occurs after the date when the items lost or destroyed or damaged are again in operation condition and the business could have been resumed, if said lease, license, order etc. had not lapsed or had not been suspended or cancelled.
   - 1.4 damage to boilers economisers turbines or other vessels machinery or apparatus in which pressure is used or their contents resulting from their explosion or rupture.
   - 1.5 electronic installations, computers and data processing equipment.
   - 1.6 Damage resulting from :
     a) deliberate erasure, loss, distortion or corruption of information on computer systems or other records programs or software.
     b) Other erasure, loss, distortion or corruption of information on computer systems or other records programs of software unless resulting from fire, lightning, explosion, aircraft, impact by any road vehicle or animals, earthquake, hurricane, windstorm flood, bursting overflowing discharging or leaking of water tanks apparatus or pipes so far as it is not otherwise excluded
     unless caused by Damage to the machine or apparatus in which the records are mounted.
   - 1.7 mechanical or electrical breakdown or derangement of machinery or equipment.
     However, these exclusions 1.4, 1.5, 1.6 and 1.7 stands automatically deleted if MLOP is opted by the insured and agreed by the company and stated in the schedule or by way of any endorsements.
2. This Policy does not cover the deductible stated in the schedule to be borne by the Insured.
3. "It is hereby declared and agreed that the Insured shall bear the amount of loss as computed hereunder, of each and every admissible claim under the policy:-
   - i. In respect of a policy insuring on reduction in turnover, the amount equivalent to the rate of Gross Profit applied to the Standard Turnover for no of days as specified in the schedule or elsewhere.
   - ii. In respect of a policy insuring reduction in output, the amount equivalent to the rate of Gross Profit applied to the Standard Output for no of days as specified in the schedule or elsewhere."

Basis of Insurance :

The cover provided under this Section shall be limited to loss of Gross Profit due (a) Reduction in Turnover and (b) Increase in Cost of Working and the amount payable as indemnity hereunder shall be

(a) **In respect of Reduction in Turnover :** the sum produced by applying the Rate of Gross Profit to the amount by which the Turnover during the Indemnity Period shall fall short of the Standard Turnover in consequence of the loss destruction or damage

(b) **In respect of Increase in Cost of Working :** the additional expenditure necessarily and reasonably incurred for the sole purpose of avoiding or diminishing the Reduction in Turnover which but for that expenditure would have taken place during the Indemnity Period in consequence of loss destruction or damage, but not exceeding the sum produced by applying the Rate of Gross Profit to the amount of the reduction thereby avoided
less any sum saved during the Indemnity Period in respect of such of the charges and expenses of the business payable out of Gross Profit as may cease or be reduced in consequence of loss destruction or damage
provided that if the sum insured by this Item be less than the sum produced by applying the Rate of Gross Profit to the Annual Turnover (or to a proportionately increased multiple thereof whereof the Maximum Indemnity Period exceeds twelve months) the amount payable shall be proportionately reduced.

DEFINITIONS :

1. **Gross Profit**
   The amount by which
   A. the sum of the amounts of the Turnover and the amount the closing stock and work in progress shall exceed
   B. the sum of the amounts of the opening stock and work in progress and the amount of the uninsured Working Expenses.
   Note: The amounts of the opening and closing stocks and work in progress shall be arrived at in accordance with the Insured's normal accountancy methods, due provision being made for depreciation.
2. **Uninsured Working Expenses:**
   The following variable expenses of the business are not covered by this policy:
   A. Turnover and purchase taxes
   B. Purchases (less discounts received)
   C. Carriage, packing and freight.
3. **Turnover:**
   The money (less discounts allowed) paid or payable to the Insured for goods sold and delivered and for services rendered in the course of the business at the Premises.
4. **Indeminity Period**
   The period beginning with the occurrence of loss destruction or damage and ending not later than the Maximum Indemnity Period thereafter during which the results of the Business shall be affected in consequence thereof. Provided always that the Company is not liable for the amount equivalent to the rate of gross profit applied to the standard turnover during the period of time Exclusion of days stated in the schedule.
5. **Rate of Gross of Profit, Annual Turnover and Standard Turnover**

RATE OF GROSS PROFIT - The rate of Gross Profit earned on the turnover during the financial year immediately before the date of the damage.	To which such adjustments shall be made as may be necessary to provide for the trend of the business and for variations in or special circumstances affecting the business either before or after the damage or which would have affected the business had the damage not occurred so that the figures thus adjusted shall represent as nearly as may be reasonably practicable the results which, but for the damage, would have been obtained during the relative period after the damage.
ANNUAL TURNOVER - The Turnover during the twelve months immediately before the date of the damage.	
STANDARD TURNOVER - The Turnover during that Period in the twelve months immediately before the date of the damage which corresponds with the Indemnity Period.	

Provisions :

Memo 1 - Benefits from Other Premises

If during the indemnity period goods are sold or services are rendered elsewhere than at the premises for the benefit of the Business either by the Insured or by the Insured or by others acting on his behalf, the money paid or payable in respect of such sales, or services shall be taken into account in arriving at the Turnover during the Indemnity Period.

Memo 2 - Return of Permium If the Insured declares at the latest nine months after the expiry of any policy year that the Gross Profit earned during the accounting period of twelve months most nearly concurrent with any period of insurance, was less than the sum insured theron a pro rata return of premium not exceeding one third of the premium paid on such return shall be made in respect only of so much of said difference as is not due to such loss destruction or damage.

Accumulated Stock Clause:

"In adjusting any loss, account shall be taken and an equitable allowance made if any shortage in turnover due to the damage is postponed by reason of the Turnover being temporarily maintained from accumulated stocks of finished goods in the Insured's warehouses."

Alternative Basis Clause

It is agreed and declared that, wherever found necessary, the term 'Output' may be substituted for the term 'Turnover' and for the purpose of this policy 'Output' shall mean the sale value of goods manufactured by the 'Insured' in the course of the business at the premises,

Provided that :

Only one such meaning shall be operative in connection with any one occurrence involving damage (as within defined).

If the meaning set out above be used, memo No.1 shall be altered to read as follows:
Memo 1 : If during the INDEMNITY PERIOD goods shall be manufactured other than at the premises for the benefit of the business either by the Insured or by others on the Insured's behalf, the sale value of the goods as manufactured shall be brought into account in arriving at the OUTPUT during the INDEMNITY PERIOD.

New Business Clause

For the purpose of any claim arising from damage occurring before the completion of the first year's trading of the business at the premises the terms "Rate of Gross Profit", "Annual Output/Turnover" and "Standard Output/Turnover" shall bear the following meaning and not as within stated:-

RATE OF GROSS PROFIT - The rate of Gross Profit earned on the Output/Turnover during the period between the date of the commencement of the business and the date of the damage.	To which such adjustments shall be made as may be necessary to provide for the trend of the business and for variations in or special circumstances affecting the business either before or after the damage or which would have affected the business had the damage not occurred so that the figures thus adjusted shall represent as nearly as may be reasonably practicable, the results which, but for the damage, would have been obtained during the relative period after the damage.
ANNUAL OUTPUT/TURNOVER - The proportional equivalent for a period of twelve months of the Output/Turnover realised during the period between the commencement of the business and the date of the damage.	
STANDARD OUTPUT/TURNOVER - The proportional equivalent for a period equal to the Indemnity Period of the Output/Turnover realised during the period between the commencement of the business and the date of the damage.	

General Exclusion Applicable to all Sections

Notwithstanding any provision to the contrary within this Policy or any endorsement thereto it is agreed that this Policy excludes loss, damage, cost or expense of whatsoever nature directly or indirectly caused by, resulting from or in connection with any of the following regardless of any other cause or event contributing concurrently or in any other sequence to the loss:

1. Cyber Loss Limited Exclusion Clause LMA 5410

1. Notwithstanding any provision to the contrary within this insurance agreement or any endorsement thereto, this insurance agreement excludes all loss, damage, liability, cost or expense of whatsoever nature directly or indirectly caused by, contributed to by, resulting from, arising out of or in connection with:
   1.1 any loss of, alteration of, or damage to or a reduction in the functionality, availability or operation of a Computer System, unless subject to the provisions of paragraph 2;
   1.2 any loss of use, reduction in functionality, repair, replacement, restoration or reproduction of any Data, including any amount pertaining to the value of such Data.
2. Subject to the other terms, conditions and exclusions contained in this insurance agreement, this insurance agreement will cover physical damage to property insured under the original policies and any Time Element Loss directly resulting therefrom where such physical damage is directly occasioned by any of the following perils:
   fire, lightning, explosion, aircraft or vehicle impact, falling objects, windstorm, hail, tornado, cyclone, hurricane, earthquake, volcano, tsunami, flood, freeze or weight of snow

Definitions

3. Computer System means any computer, hardware, software, communications system, electronic device (including, but not limited to, smart phone, laptop, tablet, wearable device), server, cloud or microcontroller including any similar system or any configuration of the aforementioned and including any associated input, output, data storage device, networking equipment or back up facility.
4. Data means information, facts, concepts, code or any other information of any kind that is recorded or transmitted in a form to be used, accessed, processed, transmitted or stored by a Computer System.
5. Time Element Loss means business interruption, contingent business interruption or any other consequential losses.

2. Terrorism Exclusion Clause for Contamination & Explosives

It is agreed that, regardless of any contributory causes, this insurance does not cover any loss, damage, cost or expense directly or indirectly arising out of

1. biological or chemical contamination
2. missiles, bombs, grenades, explosives due to any act of terrorism.

For the purpose of this endorsement an act of terrorism means an act, including but not limited to the use of force or violence and/or threat thereof, of any person or group(s) of persons, whether acting alone or on behalf of or in connection with any organization(s) or government(s), committed for political, religious, ideological, or ethnic purposes or reasons including the intention to influence any government and/or to put the public, or any section of the public, in fear.

For the purpose of (1) "Contamination" means the contamination, poisoning, or prevention and/or limitation of the use of objects due to the effects of chemical and/or biological substances. If the Company alleges that by reason of this exclusion, any loss, damage, cost or expense is not covered by this insurance, the burden of proving the contrary shall be upon the Insured.

3. Infectious/communicable disease exclusion clause

1. Notwithstanding any provision, clause or term of this [Insurance Contract] to the contrary, this [Insurance Contract] excludes any loss, cost, damage, liability, claim, fines, penalty or expense or any other amount of whatsoever nature, whether directly or indirectly and/or in whole or in part, related to, caused by, contributed to by, resulting from, as a result of, as a consequence of, attributable to, arising out of, arising under, in connection with, or in any way involving (this includes all other terms commonly used and/or understood to reflect or describe nexus and/or connection from one thing to another whether direct or indirect):
   1.1 a Communicable Disease and/or the fear or threat (whether actual or perceived) of a Communicable Disease and/or the actual or alleged transmission of a Communicable Disease regardless of any other cause or event contributing and/ or occurring concurrently or in any sequence thereto, and
   1.2 a pandemic or epidemic, as declared by the World Health Organisation or any governmental authority.
2. As used herein, Communicable Disease means: any infectious, contagious or communicable substance or agent and/or any infectious, contagious or communicable disease which can be caused and/or transmitted by means of substance or agent where:
   2.1 the disease includes, but is not limited an illness, sickness, condition or an interruption or disorder of body functions, systems or organs, and
   2.2 the substance or agent includes, but is not limited to, a virus, bacterium, parasite, other organism or other micro- organism (whether asymptomatic or not); including any variation or mutation thereof, whether deemed living or not, and
   2.3 the method of transmission, whether direct or indirect, includes but not limited to, airborne transmission, bodily fluid transmission, transmission through contact with human fluids, waste or the like, transmission from or to any surface or object, solid, liquid or gas or between organisms including between humans, animals, or from any animal to any human or from any human to any animal, and
   2.4 the disease, substance or agent is such:
      2.4.1 that causes or threatens damage or can cause or threaten damage to human health or human welfare, or
      2.4.2 that causes or threatens damage to or can cause or threaten damage to, deterioration to, contamination of, loss of value of, loss of marketability of or loss of use or usefulness of, tangible or intangible property.

   For avoidance of doubt, Communicable Disease includes but is not limited to Coronavirus Disease 2019 (Covid -19) and any variation or mutation thereof.
3. For further avoidance of doubt, any contingent or other business interruption loss, cost, damage, loss of income, loss of use, increased cost of working and/or extra expense arising out of or attributable to:
   3.1 any partial or complete closure of and/or slowdown in, including but not limited to any closure by or under the advisories of public, military, government or civil authorities, or any denial of access to reinsured premises, or customer and or supplier premises (including service / utility providers), or
   3.2 change in consumer behaviour, or
   3.3 an absence of infected employees or employees suspected of being infected shall not be covered by this [Insurance Contract]
4. For still further avoidance of doubt, loss, cost, damage, liability, claim, fines, penalty or expense or any other amount excluded hereby, includes but is not limited to any cost to identify, clean-up, detoxify, disinfect, decontaminate, mitigate, remove, evacuate, repair, replace, monitor, sanitize or test: (1) for a Communicable Disease or (2) any tangible or intangible property covered by this [Insurance Contract] that is affected by such Communicable Disease.
5. It is clarified that (1) no other prior, concurrent or subsequent provision, clause, term or exception of this [Insurance Contract] (including (but not limited to) any prior, concurrent or subsequent endorsement and/or any provision, clause, term, buy back or exception that operates, or is intended to operate, to extend the coverage of, or protections provided by, this [Insurance Contract] by whatever name called like any coverage extension, additional coverage, global extension, exception to any exclusion); (2) no change in the law, clause or similar provision; (3) no follow the fortunes clause or similar provision; and/or (4) no change in the law or any regulation (to the extent permitted by applicable law), shall operate to provide any insurance, coverage or protection under this [Insurance Contract] that would otherwise be excluded through the exclusion set forth in this Clause.
6. If the [Company] alleges that by reason of this Clause any amount is not covered by this [Insurance Contract] the burden of proving the contrary shall rest in the Insured.

4. Cyber Risk Exclusion Clause - NMA 2915

I. Electronic Data Exclusion

Notwithstanding any provision to the contrary within the Policy or any endorsement thereto, it is understood and agreed as follows:

1. This Policy does not insure loss, damage, destruction, distortion, erasure, corruption or alteration of ELECTRONIC DATA from any cause whatsoever (including but not limited to COMPUTER VIRUS) or loss of use, reduction in functionality, cost, expense of whatsoever nature resulting therefrom, regardless of any other cause or event contributing concurrently or in any other sequence to this loss.
   ELECTRONIC DATA means facts, concepts and information converted to a form useable for communications, interpretation or processing by electronic and electromechanical data processing or electronically controlled equipment and includes programmes, software and other coded instructions for the processing and manipulation of data or the direction and manipulation of such equipment.
   COMPUTER VIRUS means a set of corrupting, harmful or otherwise unauthorized instructions or code including a set of maliciously introduced unauthorized instructions or code, programmatic or otherwise, that propagate themselves through a computer system or network of whatsoever nature. COMPUTER VIRUS includes but is not limited to "Trojan Horses", "worms" and "time or logic bombs".
2. However, in the event that a peril listed below results from any of the matters described in paragraph (a) above, this Policy subject to all its terms, conditions and exclusions, will cover physical damage occurring during the Policy Period to property insured by this Policy directly caused by such listed peril
   Listed Perils:
   i. Fire
   ii. Explosion

II. Electronic Data Processing Media Valuation

Notwithstanding any provision to the contrary within the Policy or any endorsement thereto, it is understood and agreed as follows:
Should electronic data processing media insured by this Policy suffer physical loss or damage insured by this Policy, then the basis of valuation shall be the cost of the blank media plus the costs of copying the ELECTRONIC DATA from back-up or from originals of a previous generation. These costs will not include research and engineering nor any costs of recreating, gathering or assembling such ELECTRONIC DATA. If the media is not repaired, replaced or restored, the basis of valuation shall be the cost of blank media. However, this Policy does not insure any amount pertaining to the value of such ELECTRONIC DATA to the Assured or any other party, even if such ELECTRONIC DATA cannot be recreated, gathered or assembled.
ZS/01/02
NMA 2915

5. Radioactive Exclusion

Unless specifically agreed for an insured loss involving nuclear material under determined circumstances, this insurance does not cover loss, damage, cost or expense of whatsoever nature directly or indirectly caused, resulting from or in connection with nuclear energy or radioactivity of any kind including but not limited to any of the following regardless of any other cause or event contributing concurrently or in any other sequence to the loss:

i. Ionizing radiations from or contamination by radioactivity from any nuclear fuel or from any nuclear waste or from the combustion of nuclear fuel
ii. the radioactive, toxic, explosive or other hazardous or contamination properties of any nuclear installation, reactor or other nuclear assembly or nuclear component thereof
iii. any weapon or device employing atomic or nuclear fission and/or fusion or other like reaction or radioactive force or matter.
iv. the radioactive, toxic, explosive or other hazardous or contaminating properties of any radioactive matter.
v. any chemical, biological, bio-chemical or electromagnetic weapon.

6. Computer Loss General Exclusion

General Exclusion applicable to all sections of this Agreement insuring damage to Property or the consequences of damage to property or any liability
Notwithstanding any provision of this Agreement including any special exclusion or extension or other provision not included herein which would otherwise override a general exclusion, this Agreement does not cover:

1. loss or destruction of or damage to any property whatsoever (including a computer) or any loss or expense whatsoever resulting or arising there from;
2. any legal liability of whatsoever nature
3. any consequential loss directly or indirectly caused by or contributed by or consisting of or arising from the incapacity or failure of any computer, correctly or at all,
   i. to treat any date as the correct date or true calendar date, or correctly or appropriately to recognize manipulate interpret process store receive or to respond to any data or information, or to carry out any command or instruction, in regard to or in connection with any such date or
   ii. to capture save retain or to process any information or code as a result of the operation of any command which has been programmed into any computer, being a command which causes the loss of data or the inability to capture save retain or correctly process such data in regard to or in connection with any such date or
   iii. to capture save retain or to process any information or code due to programme errors, incorrect entry or the inadvertent cancellation or corruption of data and or programmes
   iv. to capture save retain or to process any data as a result of the action of any computer virus or other corrupting, harmful or otherwise unauthorized code or instruction including any Trojan horse, time or logic bomb or worm or any other destructive code, media or programme or interference.
   A computer includes any computer, data processing equipment, microchip, integrated circuit or similar device in computer or non-computer equipment or any computer software, tools, operating system or any computer hardware or peripherals and the information or data electronically or otherwise stored in or any of the above, whether the property of the insured or not.

Special Extension to the above General Exclusion

1. Loss or destruction of or damage to the insured property by fire, explosion, lightning, earthquake or by the special perils referred to in B below or indemnified by the Glass, Employer's Liability, Stated Benefits, Group Personal Accident or Motor Section is not excluded by this General Exclusion.
2. The special perils that are not excluded for the purpose of this special extension are damage caused by;
   1. Storm, wind, water, hail or snow excluding damage to property
      i. arising from its undergoing any process necessarily involving the use or application of water
      ii. caused by tidal wave originating from earthquake or volcanic eruptions
      iii. in the underground working of any mine unless so described and
      iv. in the open (other than buildings structures and plant designed to exist or operate in the open) - unless so described and specifically insured as a separate item
      v. any structure not completely roofed
      vi. being retaining walls
   II. Aircraft and other aerial devices or articles dropped there from
   II. Impact by animals, trees, aerials, satellite dishes or vehicles excluding damage to such animals, trees, aerials, satellite dishes or vehicles or property in or on such vehicles
3. This Special Extension will not insure any loss destruction, damage or consequential loss if it would not have been insured in the absence of this Computer Loss General Exclusion and this Special Extension.
4. This Special Extension shall not apply to any Public Liability Indemnity.

7. Electronic Date Recognition Clause EDRC (B)

Section 1

This insurance does not cover any loss, damage, cost, and claim or expense whether preventive, remedial or otherwise, directly or indirectly arising out of or relating to:

1. the calculation, comparison, differentiation, sequencing or processing of data involving the date change to the year 2000, or any other date change, including leap year calculations by any computer system, hardware, programme or software and/or any microchip, integrated circuit or similar device in computer equipment or non- computer equipment, whether the property of the insured or not; or
2. any change, alteration or modification involving the date change to the year 2000 or any other date change, including leap year calculations, to any such computer system, hardware, programme or software or any microchip, integrated circuit or similar device in computer equipment or non-computer equipment, whether the property of the insured or not

This clause applies regardless of any other cause or event that contributes concurrently or in any sequence to the loss, damage, cost, claim or expense however,

this section shall not apply in respect of physical damage occurring at the insured's premises arising out of the perils of fire, lightning, explosion, aircraft or vehicle impact, falling objects, windstorm, hail, tornado, hurricane, cyclone, riot, strike, civil commotion, vandalism, malicious mischief, earthquake, volcano, tsunami, freeze or weight of snow.

Section 2
Notwithstanding Section 1 above, this insurance does not cover any costs and expenses, whether preventive, remedial or otherwise, arising out of or relating to change, alteration or modification of any computer system, hardware, programme or software or any microchip, integrated circuit or similar device in computer or non-computer equipment, whether the property of the insured or not.

Section 3
The date change to the year 2000, or any other date change, including leap year calculations, shall not in itself be regarded as an event for the purposes of this insurance.

8. **Transmission and Distribution Line Exclusion**
This insurance does not cover any loss of, destruction of or damage to any kinds of above or below ground conductors (e.g. transmission and distribution lines) including wires, cables, poles, scaffolding, pylons and masts or any property forming a part thereof or connected therewith and including substations and transformer stations unless such conductors for which the insured carries the risk are located no further than 1,500 feet from an insured plant of the insured.
This exclusion also applies to any consequential losses, time element losses or business interruption losses resulting therefrom including but not limited to increased cost of working.
This exclusion includes but is not limited to conductors for the transmission or distribution of electrical energy, telephone or telegraphic signals, and all communication signals whether audio or visual.
It is, however, understood and agreed that this exclusion shall not apply to:
1) Cellular Network Package policies other than any network with physical connections like optical fiber cables.
2) Captive Power Plants
3) Transmission/ Interconnection lines, running between a power plant and the point of connection to the host energy distribution company, up to a maximum loss limit of INR 1,000 Million (100% basis and PD / BI combined). It is understood that the policy loss limit of INR 1,000 MILLION is any one accident and aggregate during the policy period is applicable only for Power generation plants.
4) MD cover for Substations of power companies involved in distribution of Power is allowed for property located on premises owned and/or controlled and/or managed by the Insured.
5) Transmission and distribution lines of standalone power distribution and/or transmission companies are completely excluded.

9. **Pollution/Contamination Exclusion**
This agreement excludes any loss arising from Pollution or Contamination except (unless otherwise excluded) destruction of or damage to the property insured caused by:
1. pollution or contamination which itself results from a perils insured against
2. any peril insured against which itself results from a pollution or contamination
This agreement also excludes any liability in connection with disposed or dumped waste materials or substances.

10. **Total Asbestos Exclusion Clause**
It is hereby understood and agreed that this contract shall not apply to, and does not cover, any actual or alleged liability whatsoever for any claim or claims in respect of loss or losses directly or indirectly caused by, arising out of, resulting from, in consequence of, in any way involving, or to the extent contributed to by, the hazardous nature of asbestos or any materials containing asbestos in whatever from or quantity.

11. **Sanctions and embargo clause (sanctions limitation and exclusion clause - LMA 3100)**
No insurer shall be deemed to provide cover and no insurer shall be liable to pay any claim or provide any benefit hereunder to the extent that the provision of such cover, payment of such claim or provision of such benefit would expose that insurer to any sanction, prohibition or restriction under United Nations resolutions or the trade or economic sanctions, laws or regulations of the European Union, United Kingdom or United States of America.

12. **Exclusion clause for sanctioned crude oil**
Notwithstanding anything to the contrary contained herein, the cover provided under this policy expressly excludes any loss of and / or damage to crude oil in stocks sourced or purchased from any country or entity which is a target of sanction, prohibition or restriction to which any insurer may be subject pursuant to the Sanctions and Embargo Clause (hereby referred to as Sanctioned Crude Oil).
In the event of a recoverable loss emanating from an area storing Sanctioned Crude Oil, which spreads and/or impacts other areas of the plant/ stock, subject at all times to the Sanctions and Embargo Clause cover shall be provided for all such areas of the plant/stock including the storage tanks where Sanctioned Crude Oil is stored and the non-Sanctioned Crude Oil in stock that may be in the same storage tank(s) and only the Sanctioned Crude Oil in stock will be excluded.
Subject always to the terms, conditions and exclusions of the policy, any processed product that contains Sanctioned Crude Oil shall, to the extent permitted under the Sanctions and Embargo Clause be covered under this policy.
To the extent permitted under the Sanctions and Embargo Clause if any insurer is not able to cover and/or pay claim due the Sanctions and Embargo Clause, only that amount not payable due to the Sanctions and Embargo Clause shall be excluded.

13. **Terrorism Exclusion Endorsement NMA 2921**
Notwithstanding any provision to the contrary within this insurance or any endorsement thereto it is agreed that this insurance excludes loss, damage, cost or expense of whatsoever nature directly or indirectly caused by, resulting from or in connection with any act of terrorism regardless of any other cause or event contributing concurrently or in any other sequence to the loss.
For the purpose of this endorsement cover, an act of terrorism means an act or series of acts, including but not limited to the use of force or violence and/or the threat thereof, of any person or group(s) of persons, whether acting alone or on behalf of or in connection with any organisation(s) or government(s), or unlawful associations, recognized under Unlawful Activities (Prevention) Amendment Act, 2008 or any other related and applicable national or state legislation formulated to combat unlawful and terrorist activities in the nation for the time being in force, committed for political, religious, ideological or similar purposes including the intention to influence any government and/or to put the public or any section of the public in fear for such purposes
This endorsement also excludes loss, damage, cost or expense of whatsoever nature directly or indirectly caused by, resulting from or in connection with any action taken in controlling, preventing, suppressing or in any way relating to any act of terrorism.
If the Company allege that by reason of this exclusion, any loss, damage, cost or expense is not covered by this insurance the burden of proving the contrary shall be upon the Insured.
In the event any portion of this endorsement is found to be invalid or unenforceable, the remainder shall remain in full force and effect.

14. **Political Risks Exclusion Endorsement**
Notwithstanding any provision to the contrary within this insurance or any endorsement thereto it is agreed that this insurance excludes loss, damage, cost or expense of whatsoever nature directly or indirectly caused by, resulting from or in connection with any of the following regardless of any other cause or event contributing concurrently or in any other sequence to the loss:
(1) War, invasion, acts of foreign enemies, hostilities or warlike operations (whether war be declared or not), civil war. Permanent or temporary dispossession resulting from confiscation, commandeering, requisition or destruction of or damage to property by order of the government de jure or de facto or by any public authority. Mutiny, civil commotion assuming the proportions of or amounting to a popular rising, tribal rising, military rising, insurrection, rebellion, revolution, military or usurped power, martial law or state of siege or any of the events or causes which determine the proclamation or maintenance of martial law or state of siege; or
(2) Strike, riot, looting, plundering, locked-out workers, persons taking part in labour disturbances, malicious persons (other than thieves); or
(3) Any act of terrorism.
For the purpose of this endorsement cover, an act of terrorism means an act or series of acts, including but not limited to the use of force or violence and/or the threat thereof, of any person or group(s) of persons, whether acting alone or on behalf of or in connection with any organisation(s) or government(s), or unlawful associations, recognized under Unlawful Activities (Prevention) Amendment Act, 2008 or any other related and applicable national or state legislation formulated to combat unlawful and terrorist activities in the nation for the time being in force, committed for political, religious, ideological or similar purposes including the intention to influence any government and/or to put the public or any section of the public in fear for such purposes
This endorsement also excludes loss, damage, cost or expense of whatsoever nature directly or indirectly caused by, resulting from or in connection with any action taken in controlling, preventing, suppressing or in any way relating to (1) and/or (2) and/or (3) above.
If the Company alleges that by reason of this exclusion, any loss, damage, cost or expense is not covered by this insurance the burden of proving the contrary shall be upon the Insured.

In the event any portion of this endorsement is found to be invalid or unenforceable, the remainder shall remain in full force and effect.

15. **War and Civil War Exclusion Clause**
Notwithstanding anything to the contrary contained herein this Policy does not cover Loss or Damage directly or indirectly occasioned by, happening through or in consequence of war, invasion, acts of foreign enemies, hostilities (whether war be declared or not), civil war, rebellion, revolution, insurrection, military or usurped power or confiscation or nationalisation or requisition or destruction of or damage to property by or under the order of any government or public or local authority.
N.M.A. 464.

16. **Institute radioactive contamination, chemical, biological, biochemical and electromagnetic weapons exclusion clause**
This clause shall be paramount and shall override anything contained in this insurance inconsistent therewith. In no case shall this insurance cover loss damage liability or expense directly or indirectly caused by or contributed by or arising from;
   i. ionising radiations from or contamination by radioactivity from any nuclear fuel or from any nuclear waste or from the combustion of nuclear fuel
   ii. the radioactive, toxic, explosive or other hazardous or contaminating properties of any nuclear installation, reactor or other nuclear assembly or nuclear component thereof
   iii. any weapon or device employing atomic or nuclear fission and/or fusion or other like reaction or radioactive force or matter
   iv. the radioactive, toxic, explosive or other hazardous or contaminating properties of any radioactive matter. The exclusion in this sub-clause does not extend to radioactive isotopes, other than nuclear fuel, when such isotopes are being prepared, carried, stored, or used for commercial, agricultural, medical, scientific or other similar peaceful purposes
   v. any chemical, biological, bio-chemical, or electromagnetic weapon.

17. **Toxic Mould Exclusion Clause** Notwithstanding anything to the contrary contained in the Policy, the Company will not pay for loss, damage, cost or expense caused directly or indirectly by, arising out of, resulting from, contributed to by, or related in any way to "mould". Loss, damage, cost or expense caused directly or indirectly by, arising out of, resulting from, contributed to by, or related in any way to "mould" is excluded regardless of any other cause or event that contributed concurrently, or in any sequence with, the loss, damage, cost or expense.
For the purpose of any exclusion, the following definition is added to this Policy:
"Mould" means by species of fungi including, but not limited, to, mould, yeast, mildew, spores, mould toxins, mycotoxins, mould metabolites, mould antigens, mould allergens, smut, wet or dry rot, mould-produced antibiotics, or dust or fumes containing any of the foregoing, individually, or in any combination therewith or with another substance.

Stock Warranty
At all times during the currency of this policy the insured should have a good internal audit and accounting procedure under which the amount at risk (pertaining to stock) stored at each location can be established at any particular time. The liability for stocks will only be admitted, if the Insured is regularly maintaining and is able to produce, at the time of loss assessment, the stock register (manual and/or Computerized records, in the form of any SAP or ERP platform) No claim for stocks shall be admissible, if this warranty is not complied with. In case the property insured is a Customs Bonded warehouse then it is warranted that no claim will be payable under the policy, if any non-dutiable item other than those admissible under Customs Act, 1962 are stored.

Testing and Commissioning Clause
It is hereby noted and agreed that this insurance does not cover destruction or damage to property in course of construction or erection, dismantling, revamp or undergoing testing or commissioning including mechanical, performance testing and any business interruption resulting therefrom. Acceptance of property hereon is subject to satisfactory completion of the following procedures:
a. Mechanical completion including testing.
b. Testing and commissioning.
c. Official acceptance by the insured following formal hand over certificate procedure. (It being understood that no equipment faults or punch list items affecting operation integrity of the plant are outstanding, unless otherwise agreed by insurers). Testing to 100% of design capacity maintained by each separate unit in a stable and controlled manner for a continuous ongoing period of minimum 72 hours.
d. Fire Suppression and detection system are operational.
In the event that compliance with b,c,d will be differed upon mechanical completion or testing, such alternative procedures which will be adopted prior to the attachment under the policy shall be agreed upon between the Insurer and the Insured on a case to case basis and the attachment of risk under the policy shall be subject to the approval of the insurer. Proviso: This exclusion does not apply to on-going maintenance/schedule turnaround. This exclusion also does not apply to revamp work subject, however, to the maximum contract value as declared within the Property in the course of construction Extension of the individual policies.

Communicable Disease Exclusion Clause:-

1. Notwithstanding any provision, clause or term of the Policy, to the contrary, it is declared and/or clarified that nothing in the Policy shall be construed as covering loss, cost, damage, liability, claim, fines, penalty or expense or any other amount of whatsoever nature, whether directly or indirectly and/or in whole or in part, related to, caused by, contributed to by, resulting from, as a consequence of, attributable to, arising under, out of or in connection with, or in any way involving (this includes all other terms commonly used and/or understood to reflect or describe nexus and/or connection from one thing to another whether direct or indirect):
1.1 a Communicable Disease including fear and/or threat thereof (whether actual or perceived), the actual or alleged transmission thereof, regardless of any other cause or event having occurred or contributed thereto either concurrently or in any sequence
1.2 a pandemic or epidemic, whether declared by the World Health Organisation or any governmental authority.
2. As used herein, Communicable Disease means: any infectious, contagious or communicable substance or agent and/or any infectious, contagious or communicable disease which can be caused and/or transmitted by means of substance or agent where:
2.1 the disease includes, but is not limited to an illness, sickness, condition or an interruption or disorder of body functions, systems or organs, and
2.2 the substance or agent includes, but is not limited to, a virus, bacterium, parasite, other organism or other micro-organism (whether asymptomatic or not); including any variation or mutation thereof, whether deemed living or not, and
2.3 the method of transmission, whether direct or indirect, includes but not limited to, airborne transmission, bodily fluid transmission, transmission through contact with human fluids, waste or the like, transmission from or to any surface or object, solid, liquid or gas or between organisms including between humans, animals, or from any animal to any human or from any human to any animal, and
2.4 the disease, substance or agent is such:
2.4.1 that causes or threatens damage or can cause or threaten damage to human health or human welfare, or
2.4.2 that causes or threatens damage to or can cause or threaten damage to, deterioration to, contamination of, loss of value of, loss of marketability of or loss of use or usefulness of, tangible or intangible property. For avoidance of doubt, Communicable Disease includes but is not limited to Coronavirus Disease 2019 (Covid -19) and any variation or mutation thereof.
3. For further avoidance of doubt, any contingent or other business interruption loss, cost, damage, loss of income, loss of use, increased cost of working and/or extra expense arising out of or attributable to:
3.1 any partial or complete closure of and/or slowdown in, including but not limited to any closure by or under the advisories of public, military, government or civil authorities, or any prevention/denial of access to insured premises, or customer and or supplier premises (including service / utility providers), or
3.2 change in consumer behaviour, or
3.3 an absence of infected employees or employees suspected of being infected shall not be covered by this Insurance Contract.
4.For still further avoidance of doubt, loss, cost, damage, liability, claim, fines, penalty or expense or any other amountexcluded hereby, includes but is not limited to any cost to identify, clean-up, detoxify, disinfect, decontaminate, mitigate, remove, evacuate, repair, replace, monitor, sanitize or test:
(1) for a Communicable Disease or
(2) any tangible or intangible property covered by this Insurance Contract that is affected by such Communicable Disease.
5. It is clarified that
(1) no other prior, concurrent or subsequent provision, clause, term or exception of this Insurance Contract (including (but not limited to) any prior, concurrent or subsequent endorsement and/or any provision, clause, term, buy back or exception that operates, or is intended to operate, to extend the coverage of, or protections

provided by, this Insurance Contract by whatever name called like any coverage extension, additional coverage, global extension, exception to any exclusion);
(2) any change in the law, clause or similar provision;
(3) any follow the fortunes clause or similar provision; and/or
(4) no change in the law or any regulation (to the extent permitted by applicable law), shall operate to provide any Insurance, coverage or protection under this Insurance Contract that would otherwise be excluded through the exclusion set forth in this Endorsement Clause.
6.If the Insurer alleges that by reason of this Endorsement, any amount is not covered by this Insurance Contract,the burden of proving to the contrary shall be upon the Insured.

Clauses:-

AGREED BANK CLAUSE

It is hereby declared and agreed:-

i) That upon any monies becoming payable under this policy the same shall be paid by the Company to the Bank and such part of any monies so paid as may relate to the interests of other parties insured hereunder shall be received by the Bank as Agents for such other parties.

ii) That the receipts of the Bank shall be complete discharge of the Company therefor and shall be binding on all the parties insured hereunder.
N.B: The Bank shall mean the first named Financial Institution/ Bank named in the policy.

iii) That if and whenever any notice shall be required to be given or other communication shall be required to be made by the Company to the insured or any of them in any manner arising under or in connection with this policy such notice or other communication shall be deemed to have been sufficiently given or made if given or made to the Bank.

iv) That any adjustment, settlement, compromise or reference to arbitration in connection with any dispute between the Company and the insured or any of them arising under or in connection with this policy if made by the Bank shall be valid and binding on all parties insured hereunder but not so as to impair rights of the Bank to recover the full amount of any claim it may have on other parties insured hereunder.

v) That this insurance so far only as it relates to the interest of the Bank therein shall not cease to attach to any of the insured property by reason of operation of condition 3 of the Policy except where a breach of the condition has been committed by the Bank or its duly authorised agents or servants and this insurance shall not be invalidated by any act or omission on the part of any other party insured hereunder whereby the risk is increased or by anything being done to upon or any building hereby insured or any building in which the goods insured under the policy are stored without the knowledge of the Bank provided always that the Bank shall notify the Company of any change of ownership or alterations or increase of hazards not permitted by this insurance as soon as the same shall come to its knowledge and shall on demand pay to the Company necessary additional premium from the time when such increase of risks first took place and

vi) It is further agreed that whenever the Company shall pay the Bank any sum in respect of loss or damage under this policy and shall claim that as to the Mortgagor or owner no liability therefore existed, the Company shall become legally subrogated to all the rights of the Bank to the extent of such payments but not so as to impair the right of the Bank to recover the full amount of any claim it may have on such Mortgagor or Owner or any other party or parties insured hereunder or from any securities or funds available.
N.B: In cases where the name of any Central Government or State Government owned and / or sponsored Industrial Financing or Rehabilitation Financing Corporations and /or Unit Trust of India or General Insurance Corporation of India and/or its subsidiaries or LIC of India/ any Financial Institution is included in the title of the Fire Policy as mortgagees, the above Agreed Bank Clause may be incorporated in the Policy substituting the name of such institution in place of the word 'Bank' in the said clause.

LOCAL AUTHORITIES CLAUSE

Reinstatement Value Policy may be extended to cover additional cost of reinstatement solely by reason of the necessity to comply with the regulations of local authority by incorporating the following clause in the policy.

"The insurance by this policy extends to include such additional cost of reinstatement of the destroyed or damaged property hereby insured as may be incurred solely by reason of the necessity to comply with the Building or other Regulations under or framed in pursuance of any act of Parliament or with Bye-laws of any Municipal or Local authority provided that

1. The amount recoverable under this extension shall not include :
   a) the cost incurred in complying with any of the aforesaid Regulations or Bye-laws,
      i) in respect of destruction or damage occurring prior to the granting of this extension,
      ii) in respect of destruction or damage not insured by the policy,
      iii) under which notice has been served upon the insured prior to the happening of the destruction of damage,
      iv)in respect of undamaged property or undamaged portions of property other than foundations (unless foundations are specifically excluded from the insurance by this policy) of that portion of the property destroyed or damaged,
   b) the additional cost that would have been required to make good the property damaged or destroyed to a condition equal to its condition when new had the necessity to comply with any of the aforesaid Regulations of Bye-laws not arisen,
   c) the amount of any rate, tax, duty, development or other charge or assessment arising out of capital appreciation which may be payable in respect of the property or by the owner thereof by reason of compliance with any of the aforesaid Regulations or Bye-laws.

2. The work of reinstatement must be commenced and carried out with reasonable dispatch and in any case must be completed within twelve months after the destruction or damage or within such further time as the Insurers may (during the said twelve months) in writing allow and may be carried out wholly or partially upon another site (if the aforesaid Regulations or Bye-laws so necessitate) subject to the liability of the Insurer under this extension not being thereby increased.

3. If the liability of the insurer under (any item of) the policy apart from this extension shall be reduced by the application of any of the terms and conditions of the policy then the liability of the Insurers under this extension (in respect of any such item) shall be reduced in like proportion.

4. The total amount recoverable under any item of the policy shall not exceed the sum insured thereby.

5. All the conditions of the policy except in so far as they may be hereby expressly varied shall apply as if they had been incorporated herein."

6. No additional premium shall be charged for inclusion of this clause in this policy.

TERRORISM DAMAGE COVER

It is hereby declared and agreed that in consideration of payment of additional premium of ₹1,900,803.00 the 'Terrorism Damage Exclusion Warranty' attached to and forming part of the within mentioned policy , stands deleted. The expression(s) 'terrorism and/or Act of Terrorism shall have the same meaning/s as contained in Terrorism Damage Exclusion Warranty.

This endorsement does not cover loss of or damage to property caused by

A):

1. total or partial cessation of work or the retardation or interruption or cessation of any process or operations or omissions of any kind.
2. Permanent or temporary dispossession resulting from confiscation, commandeering, requisition or destruction by order of the Government or any lawfully constituted Authority.
3. Permanent or temporary dispossession of any building or plant or unit or machinery resulting from the unlawful occupation by any person of such building or plant or unit or machinery or prevention of access to the same.
4. Burglary, housebreaking, theft, larceny or any such attempt or any omission of any kind of any person (whether or not such act is committed in the course of a disturbance of public peace) in any action taken in respect of an act of terrorism.

B)

loss, damage , cost or expenses of whatsoever nature directly or indirectly caused by, resulting from or in connection with any action taken in controlling, preventing suppressing or in any way relating to action taken in respect in act of an terrorism.

If the Company alleges that by reason of this exclusion ,any loss , damage cost or expenses is not covered by his insurance the burden of proving the contrary shall be upon the Assured

The limit of coverage under this endorsement shall not exceeds ₹1,900,803.00(reset the overall liability limit)

In the event of several insurances within the same location with all Indian insurers, the maximum aggregate loss payable per compound/location by all Indian insurers shall be ₹ 500 Crores. If the actual aggregate loss suffered at one location in respect of all Indian insurers is more then ₹500 crores, the amounts payable under individual policies shall be reduced in the same proportion as ₹500 Crores bears to the aggregate of all losses with all Indian insurers in that location

The coverage under this endorsement is subject to an excess of 0.5%of the total sum insured subject to a minimum of ₹One Lakh for each and every claim in respect of both material damage and loss of profit combined.

EARTHQUAKE(Fire and Shock)

Policy may be extended to cover the above subject to following endorsement wordings:
If option to delete STFI peril is exercised

In consideration of the payment by the Insured to the Company of the sum of 4,377,086.85 additional premium, it is hereby agreed and declared that notwithstanding anything stated in the printed exclusions of this policy to the contrary, this Insurance is extended to cover loss or damage (including loss or damage by fire) to any of the property Insured by this policy occasioned by earthquake including Landslide / Rockslide resulting therefrom but excluding flood or overflow of the sea, lakes, reservoirs and rivers caused by Earthquake.

Provided always that all the conditions of this policy shall apply (except in so far as they may be hereby expressly varied) and that any reference therein to loss or damage by fire shall be deemed to apply also to loss or damage directly caused by any of the perils which this insurance extends to include by virtue of this endorsement.

If option to delete STFI peril is not exercised

In consideration of the payment by the Insured to the Company of the sum of 4,377,086.85 additional premium, it is hereby agreed and declared that notwithstanding anything stated in the printed exclusions of this policy to the contrary, this Insurance is extended to cover loss or damage (including loss or damage by fire) to any of the property Insured by this policy occasioned by or through or in consequence of earthquake including flood or overflow of the sea, lakes, reservoirs and rivers and/or Landslide / Rockslide resulting therefrom.

SECTION-VI

DESCRIPTION OF ASSETS

LIST OF ASSETS OF KOPILI POWER STATION (200 MW), KPS, UMRONGSO, ASSAM

Sl. No.	Assets Particulars	Asset Value/ Amount (Rs.)	Plinth & Foundation Amount (Rs.)	Super Structure Amount (Rs.)
1	Main Plant Building	71,07,87,646.30	14,21,57,529.26	56,86,30,117.04
2	Residential Buildings in Township	9,55,87,713.43	1,91,17,542.69	7,64,70,170.74
3	Permanent Non-Residential Buildings	10,81,20,325.58	2,16,24,065.12	8,64,96,260.46
4	Reservoir and Dam	30,19,01,914.47		
5	Tunnel	1,02,68,91,444.35		
6	Dykes	35,63,09,825.97		
7	Steel Liner and Penstock	3,61,47,18,151.11		
8	Solar Panel	25,30,800.99		
9	Substation equipment	99,49,115.42		
10	Transformer having rating 100 KVA and above	34,93,89,446.00		
11	11 KV Transmission line	97,42,967.08		
12	33 KV Transmission line	1,21,37,680.64		
13	Outdoor electrification	1,11,48,212.97		
14	Indoor electrification	63,10,513.16		
15	Satellite Communication System	18,04,290.39		
16	Interior Communication Equipment	69,34,104.57		
17	Plant & Machineries	1,75,24,82,930.74		
18	400/220/132 KV Switch Yard Equipment	12,70,41,392.25		
19	Switch Gear Including Cable Connection	3,74,83,866.50		
20	Fire Fighting Equipment	19,87,75,403.00		
21	Special Tools & Plants	77,70,065.00		
22	Diesel Generator	27,00,000.00		
23	Other Misc Equipment	34,95,750.00		
	TOTAL	**875,40,13,699.82**		
	Sum Insured for Industrial All Risk (IAR) Insurance Policy	**875,40,13,699.82**		
	Sum Insured for Machinery Break Down (MBD)	**227,90,46,880.91**		

xxxxx

Forming Part of Policy no. 130800123PT0491583

Luikang Mathew R.K.
Divisional Manager
United India Insurance Co. Ltd.
Divisional Office, Shillong

ANNEXURE - XIX

R. Pal & Co.
Chartered Accountants
Membership No - 54234
Firm Registration No: 322343E
C.P.I Office Campus, Quintas Road, Shillong, Pin- 793001 Office: (☎) 0364-2224371, E-mail: - ranadhirpal@gmail.com

To,

The Chief General Manager(E/M) /HOP
NEEPCO LTD,
KOPILI HYDRO POWER STATION
Umrangso - 788 931
Dima Hasao,Assam

Independent Practitioners Certificate

We have verified the attached statements in Form No 9E,9F,11 & 16(2019-24) related to Unit-I,Unit-II ,Unit-III & Unit-IV of ' North Eastern Electric Power Corporation Limited ' of Kopili Hydro Electric Power Station with the records produced before us and found the same in agreement thereto .

Restriction on use : This Report is addressed to and provided to the Company solely for the purpose of filing Tariff Petition and should not be used by any other person or for any other purpose.

For R.Pal & Co.
Chartered Accountants
FRN : 322343E

Ranadhir Pal
Proprietor
M No. 54234

Place : Shillong
Dated :28.08.2024

SHILLONG CHARTERED ACCOUNTANTS

NEEPCO New Delhi

Name of the Petitioner ; NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

PART-II
FORM- 9E

Statement of Capital cost

(To be submitted for relevant dates and year wise)

(Amount in Rs. Lakh)

S. No.	Particulars	From 20.08.2023 to 02.09.2023			From 03.09.2023 to 11.11.2023			From 12.11.2023 to 31.03.2024		
		Accrual Basis	Un-discharged	Cash Basis	Accrual Basis	Un-discharged	Cash Basis	Accrual Basis	Un-discharged	Cash Basis
(1)	(2)									
A	a) Opening Gross Block Amount as per books (as on COD)	54186.53			67406.01			117950.96		
	b) Amount of IDC in A(a) above	1175.62			2488.98			5471.49		
	c) Amount of FC in A(a) above									
	d) Amount of FERV in A(a) above									
	e) Amount of Hedging Cost in A(a) above									
	f) Amount of IEDC in A(a) above	4834.26			9382.93			15470.47		
B	a) Addition in Gross Block Amount during the period (Direct purchases)	37.15			2.255			808.37		
	b) Amount of IDC in B(a) above	0			0					
	c) Amount of FC in B(a) above									
	d) Amount of FERV in B(a) above									
	e) Amount of Hedging Cost in B(a) above									
	f) Amount of IEDC in B(a) above	0			0					
C	a) Addition in Gross Block Amount during the period (Transferred from CWIP)	0.00			0.00			0.00		
	b) Amount of IDC in C(a) above	0.00			0.00			0.00		
	d) Amount of FC in C(a) above									
	e) Amount of FERV in C(a) above									
	f) Amount of Hedging Cost in C(a) above									
	g) Amount of IEDC in C(a) above	0.00			0.00			0.00		
D	a) Deletion in Gross Block Amount during the period									
	c) Amount of IDC in D(a) above									
	d) Amount of FC in D(a) above									
	e) Amount of FERV in D(a) above									
	f) Amount of Hedging Cost in D(a) above									
	g) Amount of IEDC in D(a) above									
E	a) Closing Gross Block Amount as per books	54236.70			67411.27			118779.33		
	c) Amount of IDC in E(a) above	1175.62			2488.98			5471.49		
	d) Amount of FC in E(a) above									
	e) Amount of FERV in E(a) above									
	f) Amount of Hedging Cost in E(a) above									
	g) Amount of IEDC in E(a) above	4834.26			9382.93			15470.47		

(Petitioner)

PART-II
FORM-9F

Statement of Capital works in Progress

(To be given for relevant dates and year wise)

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.

Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Rs. In Lakhs

Sl. No.	Particulars	20.08.2023-02.09.2023	03.09.2023-11.11.2023	12.11.2023-31.03.2024
A	a) Opening CWIP as per books	97106.28	64289.32	57814.46
	b) Amount of IDC in A(a) above	4702.48	3940.08	3,804.06
	c) Amount of FC in A(a) above	0.00	0.00	0.00
	d) Amount of FERV in A(a) above	0.00	0.00	0.00
	e) Amount of Hedging Cost in A(a) above	0.00	0.00	0.00
	f) Amount of IEDC in A(a) above	18537.04	14246.10	9965.10
B	a) Addition in CWIP during the period	4241.91	6,697.45	9654.52
	b) Amount of IDC in B(a) above	413.22	1177.33	1043.07
	c) Amount of FC in B(a) above	0.00	0.00	0.00
	d) Amount of FERV in B(a) above	0.00	0.00	0.00
	e) Amount of Hedging Cost in B(a) above	0.00	0.00	0.00
	f) Amount of IEDC in B(a) above	343.32	467.67	1467.45
C	a) Transferred to Gross Block Amount during the period	37058.88	13,172.31	50,539.69
	b) Amount of IDC in C(a) above	1175.62	1313.36	2982.50
	c) Amount of FC in C(a) above	0.00	0.00	0.00
	d) Amount of FERV in C(a) above	0.00	0.00	0.00
	e) Amount of Hedging Cost in C(a) above	0.00	0.00	0.00
	f) Amount of IEDC in C(a) above	4634.26	4748.67	6087.54

D	a) Deletion in CWIP during the period	0	0	0
	b) Amount of IDC in D(a) above	0.00	0.00	0.00
	c) Amount of FC in D(a) above	0.00	0.00	0.00
	d) Amount of FERV in D(a) above	0.00	0.00	0.00
	e) Amount of Hedging Cost in D(a) above	0.00	0.00	0.00
	f) Amount of IEDC in D(a) above			
E	a) Closing CWIP as per books	64289.32	57814.46	16929.29
	b) Amount of IDC in E(a) above	3940.08	3804.06	1864.62
	c) Amount of FC in E(a) above	0.00	0.00	0.00
	d) Amount of FERV in E(a) above	0.00	0.00	0.00
	e) Amount of Hedging Cost in E(a) above	0.00	0.00	0.00
	f) Amount of IEDC in E(a) above	14246.10	9965.10	5345.01

Note:

1.Relevant date/s means date of COD of unit/s/station and financial year start date and end date

SHILLONG

PART-II
FORM-11

Calculation of Depreciation

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDRO POWER STAT 200MW

(Amount in Rs. Lakh)

Sl. No.	Name of the Assets	RESIDUAL VALUE OF OLD ASSETS AS ON 31.07.2023	Gross Block as on 20.08.2023 (UNIT-IV)	Gross Block as on 03.09.2023 (UNIT-III)	Gross Block as on 12.11.2023 (UNIT-II)	Gross block as on 31.03.2024	Gross Block as on03.06.2024 (UNIT-I) CWIP CAPITALISED	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for each year up to 20.08.2023 (UNIT-IV)	Depreciation Amount for each year up to 03.09.2023 (UNIT-III)	Depreciation Amount for each year up to 12.11.23 (UNIT-II)	Depreciation Amount for each year up to 31.03.2024
	1	2	3	4	5	6	7	8	9=Col.3 X Col.8	10=Col.4 X Col.8	11=Col.5 X Col.8	12=Col.6 X Col.8
1	Leasehold Land	1614.91	1614.91	1614.91	1614.91	1614.91		3.34%	53.94	53.94	53.94	53.94
2	Roads, bridges, culverts & helipads	107.53	107.53	107.53	107.53	107.53		3.34%	3.59	3.59	3.59	3.59
3	Main Plant Buildings	2701.25	3095.98	3095.98	3101.40	3170.20		3.34%	103.44	103.59	103.59	105.88
4	Other Buildings	1112.04	1,281.71	1281.71	1281.71	1281.71		3.34%	42.81	42.81	42.81	42.81
5	Water supply, drainage & sewerage	29.71	29.71	29.71	29.71	29.71		5.28%	1.57	1.57	1.57	1.57
6	Railway siding	6.65	6.65	6.65	6.65	6.65		5.28%	0.35	0.35	0.35	0.35
7	Dam, Dyke, Reservoir & Other Hydraulic W	6841.72	23006.85	23006.85	50485.15	50485.15		5.28%	1214.76	1214.76	3189.39	3189.39
8	Plant and machinery	3217.56	23695.34	37167.65	50304.62	50959.91		5.28%	1266.96	1962.45	2656.08	2690.68
9	Furniture and fixtures	38.79	38.27	38.27	38.27	40.29		6.33%	2.42	2.42	2.42	2.55
10	Other Office Equipments	79.56	91.55	91.55	91.55	91.55		6.33%	5.80	5.80	5.80	5.80
11	EDP, WP machines & SATCOM equipment	175.79	231.09	233.25	233.25	244.62		15.00%	34.99	34.99	34.99	36.69
12	Vehicles including speedboats	177.33	177.33	177.33	177.33	177.33		5.28%	9.36	9.36	9.36	9.36
13	Construction equipment	18.46	179.04	179.04	179.04	179.04		5.28%	9.45	9.45	9.45	9.45
14	Electrical installations	91.29	156.24	156.24	156.24	156.24		5.28%	8.25	8.25	8.25	8.25
15	Communication equipment	35.07	40.83	40.83	40.83	62.62		6.33%	2.58	2.58	2.58	3.96
16	Hospital equipment	9.20	9.20	9.20	9.20	9.29		5.28%	0.49	0.49	0.49	0.49
17	Software	0.71	0.71	0.71	0.71	0.71		15.00%	0.11	0.11	0.11	0.11
18	Other Equipments	115.37	137.30	137.30	137.30	152.34		5.28%	7.25	7.25	7.25	8.04
19	Low Value Assets	34.79	35.50	35.50	35.50	35.55		100.00%	35.50	35.50	35.50	35.53
20	Laboratory and workshop equipment	0.00	0.05	0.05	0.05	54.08		5.28%	0.00	0.00	0.00	2.86
	TOTAL	16494.72	54236.70	67411.27	117950.95	118779.32			2803.28	3499.11	6167.52	6211.31
	Weighted Average Rate of Depreciation (%)		5.17%	5.19%	5.23%	5.23%						

856

28/08/24

R. PAL & CO
SHILLONG
CHARTERED ACCOUNTANTS

PART-II
FORM-16

Statement of Liability Flow:

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPELI HYDROELECTRIC POWER PLANT(4 X 50 MW)

Amount in ₹ Lakh

Party	Asset / Work	Original Liability	Liability as on 20.08.2023	Liability as on 03.09.2023	Liability as on 12.11.2023	Liability as on 31.03.2024	Discharges as on 20.08.2023	Discharges as on 03.09.2023	Discharges as on 12.11.2023	Discharges as on 31.03.2024	Reversal yearwise
1	2	3	4	5	6	7	8	9	10	11	12
a) For assets eligible for normal RoE			-27,141.00	-27,141.00	-27,141.00	0.00				-27,141.00	
ASWAJYOTI HOJAI			-1,55,828.00	0.00	0.00	0.00		-1,55,828.00			
EASTER LAPASAM			-94,549.00	0.00	0.00	-89,419.00		-94,549.00			
HONO BHADRAHASNU			-91,612.00	0.00	0.00	0.00		-91,612.00			
RANJIT TIMUNG			-1,22,305.00	-1,22,305.00	-1,22,305.00	-1,22,305.00					
ROTHANGA NAMPUI			-1,13,286.00	-57,89,443.00	-1,10,286.00	-1,13,286.00			-98,79,157.00		
STERLING & WILSON			-1,65,930.00	-1,65,930.00	-1,65,930.00	-1,65,930.00					
ARADHANA AGENCY			-5,56,800.00	-5,56,800.00	-5,56,800.00	-5,56,800.00					
ASSAM PETROLEUM LTD			-31,49,63,735.00	-15,94,16,536.00	-12,86,55,077.00	-13,15,91,854.00			-2,07,63,459.00	9,70,60,223.00	
ANDRITZ HYDRO PVT LT			-1,01,60,349.00	-1,01,60,349.00	0.00	0.00			-1,01,60,349.00		
JMS HYDRO PVT LTD			-13,96,051.00	-13,96,051.00	-13,96,051.00	-13,96,051.00					
ARGUTAS VERITAS IND			-9,71,439.00	-9,71,439.00	-9,71,439.00	-9,71,439.00					
ASIAN PAINTS PPG PVT			-44,29,589.00	0.00	0.00	0.00		44,29,589.00			
APOEL DEPORT WORKS			-5,63,75,376.20	-1,42,52,271.20	-3,20,44,335.20	-2,70,89,712.20			-22,47,936.00	49,54,623.00	
BHEL-KOLKATA			-76,81,520.00	-76,81,520.00	-76,81,520.00	-76,81,520.00					
BHEL-GUWAHATI			-33,312.00	0.00	0.00	0.00		33,312.00			
BRINSING ENGTI			-49,576.00	-49,576.00	-49,576.00	-49,576.00					
BUDHA BODO			-82,125.00	0.00	0.00	0.00		82,125.00			
COMPLAIN TANGLIANG			-23,71,010.00	-17,81,906.00	-17,81,906.00	-14,00,729.00		5,89,104.00		3,81,177.00	
DESHO DADLAGALPU			-43,382.00	-43,382.00	-43,382.00	-43,382.00					
DHIMANT LAPASAM			-26,69,194.00	-26,69,194.00	-26,69,194.00	-26,69,194.00					
DAULAT PRASAD AGARWA			-1,00,74,000.00	-1,00,74,000.00	-1,00,74,000.00	-1,00,74,000.00					
ELGOME TECHNOLOGIES			-27,905.00	-27,905.00	-27,905.00	-27,905.00					
GUWAHATI MOTORS			-2,30,681.00	0.00	0.00	-2,30,681.00					
HIMA TYWOMAN			-17,52,300.00	-17,52,300.00	-17,52,300.00	-17,52,300.00					
HYDRO MAGUS PVT LTD			-1,19,546.00	-1,19,546.00	-1,19,546.00	-1,19,546.00					
HOOLUNGLIEN KHELMA			-6,16,796.00	-6,16,796.00	-6,16,796.00	0.00				6,16,796.00	
JOYSING TIMUNG			-2,29,831.00	-2,29,831.00	-2,29,831.00	-1.00				2,29,830.00	
JOYTHON LONGMAILAI			394.00	394.00	394.00	0.00					
KRISHNA PRASAD JOSHI			-8,15,749.00	-8,15,749.00	-8,90,157.00	-8,90,157.00			28,921.20		
KHAGENDRA HOJAI			-79,690.00	-79,690.00	-79,690.00	-14,45,243.00					
KONECRANES FORMAG PV			-40,75,804.00	-40,75,804.00	-40,75,804.00	-40,75,804.00					
KRISHNA GENERATORS			-2,21,903.00	-2,21,903.00	-2,21,903.00	0.00				2,21,903.00	
KARISHMA BEYPI			0.00	0.00	0.00	0.00					
LIR DATA SYSTEMS LT			0.00	0.00	0.00	0.00					
Laxmi ELECTRICALS			-1,46,961.00	-1,46,961.00	-1,46,961.00	-1,46,961.00					
M/S A-SUD CIRCULAR T			-48,949.00	-48,949.00	-48,949.00	-48,949.00					
MITHIKA DEVI JOSHI			-1,82,326.00	0.00	0.00	0.00		1,82,326.00			
MAN ENPASLEIN			-1,36,954.00	-1,36,954.00	-1,36,954.00	-1,36,954.00					
NARAYAN BAHADUR CHET			-9,981.00	0.00	0.00	0.00		9,981.00			
NARAYAN UPADHAYA			-33,30,540.00	-33,30,540.00	-33,30,540.00	-33,30,540.00					
OM METALS INFRAPROJE				0.00	0.00	0.00					
PRAMAR KUMAR DHIMDI			-9,16,06,554.00	-9,40,00,574.00	-1,15,93,197.00	-1,73,39,445.00			8,24,09,377.00		
PES ENGINEERS PVT L			-28,03,680.00	-28,03,680.00	-28,03,680.00	-28,03,680.00					
POWER GRID CORPORATI			-49,923.00	-49,923.00	-49,923.00	-49,923.00					
PRAPTI DEBRADDE			0.00	0.00	0.00	0.00					
ROBINSON TERON			-2,22,482.00	-2,22,482.00	-2,22,482.00	-2,22,482.00					
RONA BHADRA HASNU											

~ 857 ~

SUBAM JOSHI			-4,81,746.00	-4,81,746.00	-4,81,746.00	-4,81,746.00					
SUPDT. OF POLICE HAF			-1,32,21,600.00	-92,86,600.00	-92,86,600.00	-92,86,600.00		39,35,000.00			
SUPER SERVICE STATIO				-55,615.00	0.00	0.00			55,615.00		
SUSHRISHNA COOLING CE			-17,26,144.00	-17,26,144.00	-17,26,144.00	-17,26,144.00					
SWAMI CHETN			-47,336.00	-47,336.00	-47,336.00	-47,336.00					
SUNIT SHARMA			-86,347.00	0.00	0.00	0.00		86,347.00			
STERLITE POWER			-8,568.00	-8,568.00	-8,568.00	-8,568.00					
SUGRIVA PRASAD VARMA			-2,16,000.00	-2,16,000.00	-2,16,000.00	-2,16,000.00					
TESLA TRANSFORMER			-7,17,600.00	-7,17,600.00	-7,17,600.00	-7,17,600.00					
TECHNO ELECTRICA&EQ			-41,59,853.00	-41,59,853.00	-41,59,853.00	-48,65,299.00					
VOITH HYDRO PVT LTD			-1,08,26,376.00	-1,08,26,376.00	-1,08,26,376.00	-1,08,26,376.00					
MUHAR MAR			0.00	0.00	0.00	0.00					
HAMJINDRA HIJAN			-85,941.00	-85,941.00	-85,941.00	-85,941.00					
SJE SeaterWin Ltd			-10,952.00	-10,952.00	-10,952.00	-10,952.00					
RAMSING RONGH				0.00	0.00	0.00					
SANJIV CHANDA			-62,458.00	0.00	0.00	0.00		62,458.00			
Cenia Power Resrce			-3,13,200.00	0.00	0.00	0.00		3,13,200.00			
VOITHHYDRO (I) LTD						-56,15,186.00					
SUPER ENGINEERING (KC			-6,494.00	-6,494.00	-6,494.00	-6,494.00					
SUCHIRA CONTROLS PVT			-75,93,852.00	-75,93,852.00	-75,93,852.00	-4,15,852.00				71,78,000.00	
RAMSING RONGHE			-27,79,476.00	-26,35,197.00	-26,35,197.00	-26,35,197.00		1,44,279.00			
R R ENGINEERING & CO			-3,49,249.00	-3,49,249.00	-3,49,249.00	-3,49,249.00					
Rajhabh Enterprises			0	0.00	0.00	0.00					
Loknath & Company			-46,76,647.00	-46,76,647.00	-12,45,894.00	-12,45,894.00			34,30,753.00		
POWERGEAR LIMITED			-62,65,741.00	-71,94,135.00	0.00	0.00			71,94,135.00		
JMC Engineering Serv			-18,74,160.00	-18,74,160.00	0.00	0.00			18,74,160.00		
IT ONLINE						-6,27,956.00					
MAZE CLEANTECH						-1,78,200.00					
			-35,25,93,103.20	-39,66,35,958.20	-24,20,64,738.30	-15,57,94,378.20	0.00	1,01,84,689.00	14,48,41,735.00	11,06,72,893.00	

2858

R. PAL & CO
SHILLONG
CHARTERED ACCOUNTS

28/08/24

28/08/24

By By(F)

Page

ANNEXURE – XX

R. Pal & Co.
Chartered Accountants
Membership No – 54234
Firm Registration No: 322343E
C.P.I Office Campus, Quinton Road, Shillong, Pin- 793001 Office: (☎) 0364-2224371, E-mail: - ranadhirpal@gmail.com

To,

The Chief General Manager(E/M) /HOP
NEEPCO LTD,
KOPILI HYDRO POWER STATION
Umrangso - 788 931
Dima Hasao,Assam

Independent Practitioners Certificate

We have verified the attached statements in Form No 9E,9F,11 & 16 (2024-29) related to Unit-I,Unit-II ,Unit-III & Unit-IV of ' North Eastern Electric Power Corporation Limited ' of Kopili Hydro Electric Power Station with the records produced before us and found the same in agreement thereto .

Restriction on use : This Report is addressed to and provided to the Company solely for the purpose of filing Tariff Petition and should not be used by any other person or for any other purpose.

For R.Pal & Co.
Chartered Accountants
FRN : 322343E

Ranadhir Pal
Proprietor
M No. 54234

Place : Shillong

Dated :28.08.2024

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 MW)

FORM-9E

Statement of Capital cost

(To be submitted for relevant dates and year wise)

S. No.	Particulars	01.04.2024-02.06.2024			From 03.06.2024 to 31.03.2025			2025-26			2026-27			2027-28			2028-29		
		Accrual Basis	De-shuchargod	Cash Basis	Accrual Basis	De-shuchargod Liabilities	Cash Basis	Accrual Basis	De-shuchargod Liabilities	Cash Basis	Accrual Basis	De-shuchargod Liabilities	Cash Basis	Accrual Basis	De-shuchargod Liabilities	Cash Basis	Accrual Basis	De-shuchargod Liabilities	Cash Basis
(1)	(2)																		
A	a) Opening Gross Block Amount as per books	118779.02			133060.09			137727.74			137727.74			137727.74			137727.74		
	b) Amount of IDC in A(a) above	3757.58			7973.66			7973.66			7973.66			7973.66			7973.66		
	c) Amount of FC in A(a) above																		
	d) Amount of FERV in A(a) above																		
	e) Amount of Hedging Cost in A(a) above																		
	f) Amount of IEDC in A(a) above	11171.26			11514.30			20334.30			20334.30			20334.30			20334.30		
B	a) Additions in Gross Block Amount during the period (Direct Additions)				762.80														
	b) Amount of IDC in B(a) above	0			0			0			0			0			0		
	c) Amount of FC in B(a) above																		
	d) Amount of FERV in B(a) above																		
	e) Amount of Hedging Cost in B(a) above				0			0			0			0			0		
	f) Amount of IEDC in B(a) above	0																	
C	a) Additions in Gross Block Amount during the period (Transferred from CWIP)	0			0.00														
	b) Amount of IDC in C(a) above	0			0.00														
	c) Amount of FC in C(a) above	0			0.00														
	d) Amount of FERV in C(a) above	0			0.00														
	e) Amount of Hedging Cost in C(a) above	0			0.00														
	f) Amount of IEDC in C(a) above																		
D	a) Deletion in Gross Block Amount during the period	0																	
	b) Amount of IDC in D(a) above																		
	c) Amount of FC in D(a) above																		
	d) Amount of FERV in D(a) above																		
	e) Amount of Hedging Cost in D(a) above																		
	f) Amount of IEDC in D(a) above																		
E	a) Closing Gross Block Amount as per books	118779.02			137727.74			137727.74			137727.74			137727.74			137727.74		
	b) Amount of IDC in E(a) above	3757.58			7973.66			7973.66			7973.66			7973.66			7973.66		
	c) Amount of FC in E(a) above																		
	d) Amount of FERV in E(a) above																		
	e) Amount of Hedging Cost in E(a) above																		
	f) Amount of IEDC in E(a) above	11171.26			11514.30			20334.30			20334.30			20334.30			20334.30		

~ 860 ~

SHILLONG

07/08/25

PART-II
FORM-9F

Statement of Capital works in Progress

(To be given for relevant dates and year wise)

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELE

Rs. In Lakhs

Sl. No.	Particulars	01.04.2024-02.06.2024	03.06.2024-31.03.2025	2025-26	2026-27	2027-28	2028-29
A	a) Opening CWIP as per books	16829.29	18207.30	19.76	19.76	19.76	19.76
	b) Amount of IDC in A(a) above	1864.62	2,216.08	0.00	0.00	0.00	0.00
	c) Amount of FC in A(a) above	0.00					
	d) Amount of FERV in A(a) above	0.00					
	e) Amount of Hedging Cost in A(a) above	5345.01	5345.01	0.00	0.00	0.00	0.00
	f) Amount of IEDC in A(a) above						
B	a) Addition in CWIP during the period	1278.01					
	b) Amount of IDC in B(a) above	351.46					
	c) Amount of FC in B(a) above	0.00					
	d) Amount of FERV in B(a) above	0.00					
	e) Amount of Hedging Cost in B(e) above	0.00					
	f) Amount of IEDC in B(a) above						
C	a) Transferred to Gross Block Amount during the period		18,167.33				
	b) Amount of IDC in C(a) above		2216.08				
	c) Amount of FC in C(a) above		0.00				
	d) Amount of FERV in C(a) above		0.00				
	e) Amount of Hedging Cost in C(a) above		0.00				
	f) Amount of IEDC in C(a) above		5345.01				
D	a) Deletion in CWIP during the period	0					
	b) Amount of IDC in D(a) above	0.00					
	c) Amount of FC in D(a) above	0.00					
	d) Amount of FERV in D(a) above	0.00					
	e) Amount of Hedging Cost in D(a) above	0.00					
	f) Amount of IEDC in D(a) above						
E	a) Closing CWIP as per books	18207.30	19.76	19.76	19.76	19.76	19.76
	b) Amount of IDC in E(a) above	2216.08	0.00	0.00	0.00	0.00	0.00
	c) Amount of FC in E(a) above	0.00	0.00	0.00	0.00	0.00	0.00
	d) Amount of FERV in E(a) above	0.00	0.00	0.00	0.00	0.00	0.00
	e) Amount of Hedging Cost in E(a) above	5345.01	0.00	0.00	0.00	0.00	0.00
	f) Amount of IEDC in E(a) above						

Note:
1.Relevant date/s means date of COD of unit/station and financial year start date and end date

Petitioner

PART-II
FORM-11

Calculation of Depreciation

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD
Name of the Generating Station : KOPILI HYDRO POWER STATION

(Amount in Rs. Lakh)

Sl. No	Name of the Assets	Gross block as on 31.03.2024	Gross Block as on 03.06.2024 (UNIT-I)	Gross Block as on 31.03.2025	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for each year up to 03.06.2024	Depreciation Amount for eact year up to 31.05.2025
	1	2	3	4	5	6=Col.3 X Col.5	7=Col.4 X Col.5
1	Leasehold Land	1614.91	1614.91	1614.91	3.34%	40.37	40.37
2	Roads, bridges, culverts & helipads	107.53	107.53	107.53	3.34%	3.59	3.59
3	Main Plant Buildings	3170.20	3170.20	3170.20	3.34%	105.86	105.86
4	Other Buildings	1281.71	1281.71	1281.71	3.34%	42.81	42.81
5	Water supply, drainage & sewerage	29.71	29.71	29.71	4.22%	1.25	1.25
6	Railway siding	6.65	6.65	6.65	4.22%	0.28	0.28
7	Dam, Dyke, Reservoir & Other Hydraulic W	60405.15	62477.15	62477.15	4.22%	2636.54	2636.54
8	Plant and machinery	50659.91	57671.46	67671.46	4.22%	2855.74	2855.74
9	Furniture and fixtures	40.29	104.17	104.17	6.33%	6.59	6.59
10	Other Office Equipments	93.81	93.81	93.81	6.33%	5.94	5.94
11	EDP, WP machines & SATCOM equipment	242.36	264.54	264.54	15.00%	39.68	39.68
12	Vehicles including speedboats	177.33	177.33	177.33	4.22%	7.48	7.48
13	Construction equipment	179.04	179.04	179.04	4.22%	7.55	7.55
14	Electrical installations	158.24	161.25	161.25	4.22%	6.80	6.80
15	Communication equipment	82.62	121.34	121.34	6.33%	7.68	7.68
16	Hospital equipment	9.20	9.20	9.20	4.22%	0.39	0.39
17	Software	0.71	0.71	0.71	15.00%	0.11	0.11
18	Other Equipments	152.34	167.38	167.38	4.22%	7.06	7.06
19	Low Value Assets	35.53	35.56	35.56	100.00%	35.56	35.56
20	Laboratory and workshop equipment	54.08	54.08	54.08	4.22%	2.28	2.28
	TOTAL	118719.30	137727.74	137727.74		5813.80	5813.80
	Weighted Average Rate of Depreciation (%)		4.22%	4.22%			

24/04/24

24/04/24

PART-II
FORM-16

Statement of Liability Flow

Name of the Petitioner : NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
Name of the Generating Station : KOPILI HYDROELECTRIC POWER PLANT(4 X 50 M

Amount in ₹ lakh

Party	Asset / Work	Original Liability	Liability as on 03.06.2024	Discharges as on 03.06.2024	Reversal yearwise
1	2	3			8
a) For assets eligible for normal RoE					
BISWAJYOTI HOJAI					
EASTER LAPASAM					
RONO BHADRA HASNU				99,419.00	
RANJIT TIMUNG			-94341.00		
ROTHIANGA NAMPUI			-122305.00	0.00	
STERLING & WILSON				1,13,288.00	
ARADHANA AGENCY			-165930.00	0.00	
ASSAM PETROLEUM LTD.			-556800.00	0.00	
ANDRITZ HYDRO PVT LT			-31591854.00	0.00	
APS HYDRO PVT LTD				0.00	
AEQUITAS VERITAS IND			-1396051.00	0.00	
ASIAN PAINTS PPG PVT			-871439.00	0.00	
APDCL DEPOSIT WORKS				0.00	
BHEL-KOLKATA			-26986167.20	1,03,545.00	
BHEL-GUWAHATI			-7681520.00	0.00	
BIRENSING ENGTI				0.00	
BIJONA BODO			-49576.00	0.00	
COMPLAIN TANGLIANG				0.00	
DESHO DAOLAGUPU			-1400729.00	0.00	
DABIANG LAPASAM			-43362.00	0.00	
DAULAT PRASAD AGARWA			-2141100.00	5,29,094.00	
ELCOME TECHNOLOGIES			-9787476.00	2,86,524.00	
GUWAHATI MOTORS			-27505.00	0.00	
HEMA TYNGKAN				2,30,681.00	
HYDRO MAGUS PVT LTD			-1752300.00	0.00	

HOICHUNGLIEN KHELMA			-119546.00	0.00	
INFOTECH SOLUTION			-31955.00		
JOYSING TIMUNG				0.00	
JOYTHON LONGMAILAI			-1.00	0.00	
KRISHNA PRASAD JOSHI				0.00	
KHAGENDRA HOJAI			-690157.00	0.00	
KONECRANES &DEMAG PV			-79650.00	13,65,593.00	
KRISHNA GENERATOR SE			-4075804.00	0.00	
KARISHMA BEYPI				0.00	
LIPI DATA SYSTEMS LT			-6494.00		
LAXMI ELECTRICALS				0.00	
M/S A-BUD,CIRCULAR P			-148961.00	0.00	
MENOKA DEVI JOSHI			-68949.00	0.00	
MARLEKI PASLEIN				0.00	
NARAYAN BAHADUR CHET			-136954.00	0.00	
NARAYAN UPADHAYA				0.00	
OM METALS INFRAPROJE			-3330540.00	0.00	
PRANAB KUMAR DIHINGI				0.00	
PES ENGINEERS PVT. L			-49024915.68		
POWER GRID CORPORATI			-2803680.00	0.00	
PRAPTI DIBRAGEDE			-49923.00	0.00	
ROBINSON TERON				0.00	
RONA BHADRA HASNU			-222482.00	0.00	
SUDAM JOSHI			-481746.00	0.00	
SUPTD. OF POLICE HAF			-9283600.00	0.00	
SUPER SERVICE STATIO				0.00	
SUDARSHNA COOLING CE			-1728144.00	0.00	
SANJIB CHETRI			-47336.00	0.00	
SUMIT SHARMA			-90868.00		
STERLITE POWER			-8568.00	0.00	
SUGRIVA PRASAD VARMA			-216000.00	0.00	
TESLA TRANSFORMER			-717500.00	0.00	
TECHNO ELECTRIC&ENGI			-4159853.00	7,05,448.00	
VOITH HYDRO PVT LTD.			-10826376.00	0.00	
MUHAR MANI			0.00	0.00	
PARTHIV KONWAR			-13377.00		
HAMJENDRA HOJAI			-85941.00	0.00	
S.M. Corporation Ltd				10,952.00	
RAMSING RONGHI				0.00	

SANJIV CHANDA				0.00	
Central Power Resear				0.00	
VOITH HYDRO (P) LTD			-10952.00	54,08,154.00	
~~SUPER ENGINEERING WO~~				~~6,494.00~~	
BUCHIYA CONTROLS PVT			-1,06,452.00	3,10,400.00	
RAMSING RONGHI			-26,35,197.00	0.00	
R.R.ENGINEERING & CO			-3,49,249.00	0.00	
Rushabh Enterprises				0.00	
Loknath & Company			-12,45,694.00	0.00	
POWERGEAR LIMITED				0.00	
IRC Engineering Serv				0.00	
IT ONLINE				6,27,956.00	
NACS CLEANTECH				1,78,000.00	
ABRARI GADJET TRADIN			-6,10,474.00		
			-17,92,52,813.86	99,74,544.00	

2865

R. RAJ & CO SHILLONG CHARTERED ACCOUNTANTS

Page

