



North Eastern Electric Power Corporation Ltd.
(A Government of India Enterprise)
An ISO 9001, 14001 & OHSAS 18001 Corporation

CONTRACT & PROCUREMENT CELL

KOPILI H.E. PLANT::DIMA HASAO DISTRICT::UMRONGSO – 788931

Website-www.neepco.gov.in

Phone: 03670-288241, Fax: 03670-288240/288254

Notice Inviting Tender no. : KHEP/ C&P (E)/ 2017/ 272 Dated 02-06-2017

Online Sealed Single Stage Single Envelop bidding system (e_tender) through domestic competitive bidding with minimum 120 (One hundred & twenty) days validity are invited from manufacturers / manufacturer's authorized dealer by the under mentioned on behalf of North Eastern Electric Power Corporation Ltd. for Supply, Delivery including Installation, Testing & Commissioning at site of one set of 400 KVA Silent Generator set to Khandong Power Station of Kopili Hydro Electric Plant , NEEPCO Ltd. Umrongso , Dima Hasao , Assam as per Scope of Work and Terms & Conditions stated below.

Last date and time for submission of bids	: 15:00 hrs. of 29.06.2017
Date and time for opening of bids	: 15:30 hrs. of 29.06.2017
Earnest Money Deposit	: Rs 90,000/- (Rupees ninety thousand) only
Tender Fees	: Rs. 5000/- (Rupees fiveThousand) only

Scope: The Scope of work to be executed as per this tender shall be as follows:

Sl. No	Scope of Work	Unit	Qty
1.	Supply, Delivery including Installation, Testing & Commissioning at site of 400kVA (CPCB-II) Silent Generator set comprising of .Cummins or equivalent reputed make engine, 1500 RPM speed duly coupled with Stamford / Kirloskar/Crompton / Kirloskar Green/ NGEF or equivalent of any other reputed make 400 kVA/415V, 3 phase, 50Hz alternator mounted on a common MS Channel base frame including fuel tank, Fuel pipelines, Battery with leads, acoustic enclosure, control panel, remote start / stop accessories etc. Detail specification is enclosed at ANNEXURE A.	Set	1 (one)

General information:

Khandong Power Station under Kopili H.E. Plant is located in the Dima Hasao District of Assam State, about 240 Kms from Guwahati via Nagaon. The nearest rail head is Lanka on Bongaigaon-Guwahati-Lumding section. The distance from Lanka to Khandong Power Station is about 80 Kms. The rail head and power station is connected by road. Alternatively, road transport from Guwahati via Shillong is at a distance of 230 Kms. Contact no of Power Station **0361-288245/ 09476765095**

1. Qualifying requirement of the Bidder :

- a. The intending bidders must have experience in undertaking similar nature of work to any PSU/ Government organisations/ IPP (Independent Power Producer) during last 7 years as follows:
 - i) At least one similar order of having contract value not less than Rs 40,00,000.00 (forty lakhs)
OR
 - ii) At least two similar order of having contract value not less than Rs 30,00,000.00 (thirty lakhs).
OR
 - iii) At least three similar order of having contract value not less than Rs 20,00,000.00 (twenty lakhs).
 - iv) Order copies in support of execution of similar work must be submitted along with the bid.
- b. Average annual financial turnover during last 3(three) years, with year ending March 2017, should not be less than 50 lakhs. Complete Audited Annual Reports with balance sheets should be furnished along with the bid
- c. Letter of adequacy / solvency and commitment from their Bankers / Financial Institutions should be furnished along with the bid.
- d. Documentary evidence in support of the above must be submitted along with the bid.
- e. The bidder shall also submit the following documents in their bid in order to ensure qualification
 - i) Copy of PAN card.
 - ii) VAT / CST registration
 - iii) Valid Contract licence.
 - iv) Copy of Audited annual accounts for the last three years or extracts of the Bank Accounts of bidder containing transactions during last three years.
 - v) Latest Solvency and Credit facility certificates from their bankers.
 - vi) Latest Service Tax Registration Certificate
- f. The above stated requirement are minimum and the Corporation reserves the right to request for any additional information and also reserves the right to reject the proposal of any Bidder, if in the opinion of Corporation the qualification data is incomplete or the bidder is found not qualified to satisfactorily perform the works.
- g. Notwithstanding anything stated above, the Corporation reserves the right to assess the bidder's capability and capacity to perform the work, should the circumstances warrant such an assessment in the overall interest of the Corporation.

2. Price Basis:

- a) The basic Prices for the scope of supply/work under this specification shall remain "FIRM" during the entire contractual period and no price adjustment shall be applicable for these supplies / works of the contract.

- b) Rates shall be quoted on Ex- Works basis, including handling, packing and loading charges. Transportation and Insurance charges upto destination shall be indicated separately.
- c) All applicable taxes and duties taxes & duties including Sale tax, VAT, E.D., local taxes

The bidders shall quote the prices as per the price schedule, as enclosed ANNEXURE-II.

3. Taxes & Duties:

Taxes and duties will be paid at actual prevailing at the time of dispatch against submission of documentary evidence.

4. Earnest Money :

4.1 The Earnest money Rs 90,000.00 (Rupees ninety thousand) only. The Bid Guarantee offered shall be in one of the following alternative forms:

a) Crossed Bank Draft in favour of NEEPCO Ltd., payable at SBI, KHEPA Garampani Branch, Umrongso (SBI Code 4812).

OR

b) An irrevocable bank guarantee issued preferably by any Indian Nationalised Bank in favour of North Eastern Electric Power Corporation Limited in the prescribed format. Proforma of Bank Guarantee (BG) is enclosed of this document.

4.2 The Bid Guarantee shall be valid for a period of 120 days after the date set for opening of bids.

4.3 The Bid Guarantee of the successful bidder to whom the contract is awarded, will be returned after submission and acceptance of the Contract Performance Guarantee furnished by the bidder and placement of detail purchase order.

4.4 Bid Guarantee of the unsuccessful bidders will be returned only after finalization of the bid.

4.5 If the bidder withdraws the bid while it is under consideration, his EMD shall be forfeited.

4.6 If the successful bidder fails to submit the Contract Performance Guarantee as specified in the contract documents within 10 days after the date of issue of the Letter of Intent / Award or any date specified by the Purchaser, then the Bid Guarantee of the successful bidder will be enashed by the Purchaser.

4.7 Any bid not accompanied by a EMD will be rejected. **The tender cost of Rs 5000/-** (Rupees five thousand only) shall be deposited along with EMD.

4.8 No interest will be paid on EMD during returning of the same.

4.9 The tenderer shall not be entitled during the period of validity of their offers, without the consent in writing of the Corporation, to revoke or withdraw their tenders or vary in any respect of their offer or any terms and conditions thereof. In case of a tenderer revoking or withdrawing his tender or varying any terms and conditions in regard thereto without the consent of the Corporation in writing, the Corporation, may at his discretion forfeit the earnest money furnished by the tenderer along with his offer.

4.10 In addition to this the tenderer may, at the discretion of the Corporation, be debarred from tendering for a period as may be considered fit by the Corporation against any tenderer that might be invited by the Corporation in future.

- 4.11 Firms/ contractors which registered as SSI or MSME and hence exempted from submission of EMD / PBG etc. should mention the same enclosing valid/ current authentic documentary evidence in support of such registration to avail the said exemptions.

5. Tender fee:

Non-re-fundable Tender fee of Rs. 5,000.00 in the form of Banker's Cheque / Demand Draft drawn in favour of NEEPCO Ltd. Umrongso, shall have to be submitted along with the bid documents.

6. Submission of Contract Performance Guarantee :

- 6.1 Within 20(twenty) days from the date of issue of the order, the Contractor/ successful bidder shall furnish a Bank Guarantee from a Nationalized Bank for an amount equal to (10) ten percent of the contract value by way of guarantee for the due and faithful performance of the contract. The Bank guarantee shall be submitted in the prescribed format (Annexure- CPG) enclosed in this order and initially be valid for such period to cover ninety days after the warranty period.
- 6.2 The Performance Guarantee will be returned to the Contractor without any interest at the end of the 90 (ninety) days after the warranty period, subject to fulfilment of the contract in all respects.

7. Payment Terms :

The supplier / contractor may choose any one of the following payment terms.

- a) 100% of the contract price along with 100% taxes and duties shall be paid after receipt of materials in full & good condition and successful commissioning at site subject to submission of CPG as per clause no. 5 stated above.
- OR
- b) 90% payment with 100% taxes and duties shall be released on receipt of complete materials at site in full & good condition and successful commissioning at site. Balance 10% payment shall be retained as Contract Performance Guarantee and shall be released after 3(three) months from date of expiry of guarantee period, **in the event of non submission of CPG** as per clause no. 4 above.

8. Delivery Period:

The materials shall be delivered and commissioning at site within 18(eighteen) weeks from the date of awarding the contract / issue of order.

9. Liquidated damage:

LD @ 0.5% on the contract value for per week of delay in delivery and commissioning subject to a maximum of 10% on the contract value shall be applicable.

10. Guarantee / Warranty:

- 10.1 The materials supplied shall be minimum warranted / guaranteed as per manufacturer's norms or for a period of 12 months from the date of supply or 18 months from the date of commissioning, whichever is earliest as per manufacturer's norms or as per manufacturer's norms against manufacturing defect/ defective workmanship.

- 10.2 The successful bidder shall supply the equipment to the satisfaction of the Engineer-in charge. Defective materials shall be replaced/ rectified by the supplier at free of cost immediately on intimation from this end.

11 Submission of Manual:

The contractor shall submit the detailed manual of the DG set along with the offer.

12. Services after sales:

Supplier shall ensure that they shall provide services after sale for minimum period of 15 years and they have the service providing centre within NE Region. Details of the service proving centre shall be mentioned in their offer.

13. Operational Manual & Test Certificate :

The successful bidder shall provide operational manual and test certificate of the Generator set along with equipment supplied.

14. Packing and forwarding:

To avoid damage under normal conditions of transport and handling, the contractor shall be responsible for securely protecting the equipment, taking special care considering the road condition of the locality and ensuring the safety of the materials and also arrival of materials at destination in good and original condition for contemplated use. The contractor shall be responsible for any loss or damage during transportation and handling.

15. E-tendering / E- procurement:

This tender is being processed through e-tendering / e-procurement system. The bidding documents/ detail NIT are to be downloaded , filled in bids are to be submitted / uploaded through e-tendering system of NEEPCO Ltd at website <https://neepco.abcpocure.com>.

16. Vendor Registration for Participation in Bids:

- 16.1 **Portal Registration:** The intending bidders have to register themselves in the portal <https://neepco.abcpocure.com>. Information about the bidder required to be submitted during registration is available in the portal.

- 16.2 **Vendor Registration Fee:** The Fees for vendor registration in the portal is Rs. 3000/- (Rupees Three Thousand) only per year.

The bidder shall furnish the copy of receipt of payment for vendor registration at email id contract@neepco.gov.in & contract_khep@rediffmail.com to advise NEEPCO's service provider for approval of vendor registration.

Bidders who are already registered in the system shall ensure to keep their registration valid till completion of entire bidding process.

- 16.3 **Procedures for payment of registration fee :**

Bidders shall make payment of vendor registration fee of INR 3000.00 (Indian Rupees Three thousand only) at the following Account: Name of account : E Procurement Account, NEEPCO Ltd., Account No : 913020005982636 of Axis bank IFS Code : UTIB0000270.

The bidder shall clearly indicate the head against which payment has been made at the above mentioned account in the following format:

(i)-----/ NIT No. ----- dated -----/ Registration fee

(Name of bidder)

16.4 Procedure for Payment of BID Fees and EMD:

- a) Bidder shall make payment of Bid fees of amount Rs. 5000/- (non refundable) in the form a crossed bank draft in favour of North Eastern Electric Power Corporation Limited, payable at SBI, KHEPA, Garampani Branch Umrongo (SBI code 4812).
- b) The detail for submission of EMD amount of Rs. 90,000/- is described at clause no. 4 (Terms & Conditions) of this tender specification.

Both Bid fees and EMD of the tender needs to be submitted physically (offline) i.e. either personally or by Registered Post in a sealed envelope at the following address so as to reach us before due date and time of opening of the tender. The Sr. Manager (E/M), C&P KHEP , NEEPCO Ltd. , Umrongso Dima Hasao , Assam Pin- 788931 Phone : 03670-288241/ 288254 Fax : 03670 288240

16.5 For any clarification related to e- procurement procedures of NEEPCO against this tender, bidders are requested to make their query as follows-

- a) Contact Sr. Manager (E/M) / Manager (E/M), C&P, KHEP at Phone no. : 03670-288241/288254, Fax no. : 03670-288240, email Id: contract_khep@rediffmail.com.
- b) Bidders may also contact e- Procurement Technologies Ltd. (Service Provider of NEEPCO) having the following contact details :

e- Procurement Technologies Ltd.

A-201-208, Wall Street –II/ Opp. Orient Club
Nr. Gujarat College/ Ellisbridgge
Ahmedabad- 80015
Gujjarat , India
Tel: +91-79-40016802-77
Cell : +91-9374519754/ 93779881191

17. Preparation and Submission of bids:

- 17.1 Bidder shall prepare and submit their bids in the electronic form at **<https://neepco.abcprocure.com>** . Online bidding forms shall be available in the above website. Submission of online bids is mandatory for consideration of the bids. The tender specification/ detail NIT can be downloaded from this website after vendor registration and payment of bid fee.
- 17.2 Bidders are also requested to visit the websites <https://neepco.abcprocure.com> and <http://neepco.gov.in> for any updated information / clarification regarding the tender.
- 17.3 Bidders may view the tender opening results of techno commercial and price bids at <https://neepco.abcprocure.com> by making their presence for online tendering opening.
- 17.4 **In the online bid submission , bidders will submit their Techno – Commercial bids and Price bids in the online bidding forms using their digital signatures.**

Techno commercial bids shall be submitted / uploaded as per techno commercial checklist form and price to the quoted online in the price bid form readily furnished in the e-tendering portal.

- 17.5 Scan copy of EMD submitted in the form of DD or in the form of BG in the prescribed format in this tender specification to be uploaded.
- 17.6 Authentic documentary evidence in support of qualifying requirements as mentioned under sl. No. 1 above in the terms & conditions shall be uploaded along with the bid. For qualifying requirements, the documents should be submitted in the form of certificate of clients/ owners. Bids submitted without qualifying requirements shall be rejected.
- 17.7 A signed copy of the detail NIT/ tender specification must be uploaded along with the bid submission in acceptance of NIT conditions.
- 17.8 Besides the online submission , bidders shall compulsorily submit the following documents in offline mode / physically by registered post or in person in sealed envelop addressed to “ The Manager(E) , C&P, KHEP , NEEPCO Ltd. , Umrongso, Pin - 788931, Assam”.
a) Earnest Money & tender fee Deposit in the form of DD. The document must be submitted in a envelop super scribing “Bid Guarantee / EMD against NIT no. KHEP / C&P(E)/2016/250”.
- 17.9 The documents submitted in offline/ physically must be sent by registered post with acknowledgement/ transmitted receipt / courier sufficiently in advance so as to reach the office of the under mentioned within the schedule dated and time of bid opening The bidders are requested to ensure in their own interest the delivery of the documents on time.
- 17.10 Submission of bids not construe qualification for evaluation. The Corporation reserves the right to reject any or all bids or to annul the bidding process and reject all the bids, without thereby incurring any liability to the affected bidders , nor does it have any obligation to inform the bidders of the ground for such action on the part of the owner.
- 17.11 In the event the date of opening of bids is declared as a closed holiday for NEEPCO, the date of opening of bids will be the following working day at the appointed times.
- 17.12 If the bidder is eligible for any concessional duties and taxes he should invariably mention this in the bid. On or before the date of opening the price bid the bidder should also confirm any change in this regard. The price bid shall be evaluated on the basis of the information supplied by the bidder and hence the actual payments of taxes and duties shall be limited to the extent mentioned in the bid or in subsequent confirmation before opening of the price bids.
- 17.13 The bid will be opened at the time and date set for opening of bids, in presence of representatives of bidders. Bidders’ authorized representative shall be permitted to attend the bid opening only on production of authorized letter. In the event that the day for opening of bids is holiday, the bids shall be opened on the next working day. No electronic recording device will be permitted during bid opening.
- 17.14 All texts and amounts of the bid shall be legibly written. The language and currency applicable are English and Indian currency respectively. In case of any discrepancy between figures and words, the amount indicated in words will be considered. In case of any discrepancy between unit rate and total amount, the total amount evolved by multiplying unit rate and quantity shall be considered. In case of discrepancy between lump sum amount and breakup, the lump sum amount shall prevail. In such case the bidder shall adjust the breakup as and when requested for billing purpose.

17.15 Any action on the part of the bidder to revise the price or to change the structure of the price at his own instance after opening of the bid and within the validity of the offer shall not be possible.

18. The Corporation (NEEPCO) reserves the right to extend the last date and time for submission of bid submission and opening.

19. No separate tender document shall be issued against this NIT.

20. Important Information and dates:

S.N.	Particulars	Information / Dates
1	Tender Fees	Rs. 5000/-
2	Earnest Money Deposit (EMD)/ Bid Security	Rs. 90,000/-
3	Date of commencement of downloading of detail NIT/ tender specification from https://neepco.abcprocure.com	16:00hrs. of 06.06.2017
4	Last Date & time for receipt of online bids	15:00hrs. of 29.06.2017
5	Last Date & time for receipt of offline documents	15:00hrs. of 29.06.2017
6	The last Date & time of online opening of bids	15:30hrs. of 29.06.2017

Encl.: 1. BG Format (Annexure-CPG)
2. Schedule of Technical Specification (Annexure- A)
3. Price Shedule (Annexure- B)

Manager (E/M), C&P (E)
KHEP, NEEPCO Ltd., Umrongso
Dima Hasao, Assam

ANNEXURE -CPG

**Proforma of Bank Guarantee for Contract Performance
(To be stamped in accordance with Stamp Act)**

Ref.....

Bank Guarantee No.....

Date

To,

.....

.....

Dear Sir,

In consideration of the North Eastern Electric Power Corporation Ltd.; (hereinafter referred to as the "Purchaser" which expression shall unless repugnant to the context or meaning thereof include its successors, administrators or and assigns) having awarded to M/s

.....
with its Registered/Head Office at

.....
(hereinafter referred to as the "Contractor" which expression shall unless repugnant to the context or meaning thereof include its successors, administrators or and assigns) a contract by issue of Purchaser's Letter of Intent No dtdand the same having been unequivocally accepted by the Contractor resulting in a "Contract" valued at Rs

.....
(Rupees.....)

only for

(Scope of the Contract)

and the Contractor having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract equivalent to 10 (ten) percent of the said value of the Contract to the Purchaser.

We

(Name and address of the Bank)

having registered Office at (hereinafter referred to as the "Bank" which expression shall unless repugnant to the context or meaning thereof include its successors, administrators, executors or and assigns) do hereby guarantee and undertake to pay the purchaser, on demand any and all money payable by the Contractor to the extent of as aforesaid at any time upto (day/month/year) without any demur, reservation, contest, recourse or protest and/or without any reference to the Contractor. Any such demand made by the Purchaser on the Bank shall be conclusive and binding notwithstanding any difference between the Purchaser and Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority. The Bank undertakes not to revoke this guarantee during its currency without previous consent of the Purchaser and further agree that the guarantee herein contained shall continue to be enforceable till the Purchaser discharges this guarantee.

The Purchaser shall have the fullest liberty without affecting in any way the liability of the Bank under this guarantee from time to time to extend the time for performance of the contract by the Contractor. The Purchaser shall have the fullest liberty without affecting this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Purchaser and the Contractor or any other course or remedy or security available to the Purchaser. The Bank shall not be released of

its obligations under these presents by any exercise by the Purchaser of its liberty with reference to the matters aforesaid or any of them or by reason or any other acts of omission or commission on the part of the Purchaser or any other indulgence shown by the Purchaser or by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving the Bank.

The Bank also agrees that the Purchaser at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor in the first instance without proceeding against the Contractor and not withstanding any security or other guarantee the Purchaser may have in relation to the Contractor's Liabilities.

The liability or obligation of the Bank under this guarantee bond shall not be affected or suspended by any dispute between the purchaser and the supplier and the payment under this guarantee bond need not wait till the disputes are decided by a Competent Court or Tribunal or any other authority and that any payment made by the bank to the purchaser under the guarantee bond shall be deemed to have been rightfully and lawfully made.

Lastly the Bank also assures that the guarantee bond will not be discharged due to the change in the constitution of the bank or the contractor.

Not withstanding anything contained herein above our liability under this guarantee is restricted to Rs..... (Rupees.....) only and it will remain in force upto and including.....and shall be extended from time to time for such periods as may be advised by the Purchaser who is the beneficiary under this guarantee and in the event if the Contractor fails to comply such extension within the validity period, this shall be treated as a claim by the purchaser on the Bank.

Dated this day of200 at

Witness

.....	(Signature).....
(Signature)	
.....	(Name)
(Name)	
	Designation with
	Bank Stamp.....
	Authority as per Power
	Of attorney No.....
.....	
(Official Address)	
	Dated

- Note: (1) This sum shall be ten percent (10%) of the "Contract Price".
- (2) The date of validity of this Bank Guarantee will be ninety (90) days after the end of the warranty period or as specified in the Contract.
- (3) The BG shall be submitted preferably from a Nationalized Bank

ANNEXURE A**Detailed Technical specification:**

- 1 This specification covers the supply, installation and testing of power Supply System 400KVA silent DG set.
 - i) 400 KVA (CPCB-II) Silent DG set
 - ii) Acoustic container of suitable size
 - iii) AMF control panel with auto/manual facility, monitoring instruments and required all protective devices for DG set
 - iv) Starting - 1 Nos of maintenance free battery of EXIDE or equivalent make for suitable for 400 kVA DG set with battery charger of 6-12-24V selection & current limiter featured with auto O/C protection shall be provided for Engine cranking and DC controls or SMPS based battery suitable for the DG set.
 - .v) Anti vibrations mounts for DG sets & control panel
 - vi) Documents

2. Brief Description

- 2.1 Genset shall comprise of Diesel engine which will be coupled to self excited and self regulated type Generator (400 KVA, 415V, 3 phase, 50 Hz at 1500 rev/min) through a closed coupling. The genset shall also include fuel tank, toolbox, control panel, spare box and batteries for engine cranking.

3. Safety

- 3.1 All exposed parts, which are energized electrically and all reciprocating or rotating parts, which are of such nature or so located as to become a hazardous shall be insulated, fully enclosed or guarded properly.
- 3.2 All metals parts which are not supposed to be electrically live shall be effectively bound together (to ensure good conductivity) to a common Brass earthing terminal which shall be easily accessible. Necessary earthing spike with copper braided cable shall be provided for effective earthing of the **Genset 400kVA** to avoid electric shock.
- 3.3 To ensure firm electric connection, terminal strips, lugs, plug-sockets etc shall be used. Electrically live cable ends shall be covered with tight sleeve.

4 Accessibility

Construction and layout of components shall be simple for operation and maintenance.

Easy accessibility of the following parts shall be ensured:

- i) Diesel tank out let tap and cap with robust chain duly secured to body of set and having oil indicator.
- ii) Oil sump dipstick, cap and drain plug with an extension pipe.

- iii) Earthing terminals
- iv) Tool box
- v) ON/OFF switch
- vi) Plug/ Sockets
- vii) Mandatory spares

5. Diesel Engine

- 5.1 The Diesel engine conforming to relevant ISO standard is to be used as prime mover for the genset.
- a) Make - Cummins or any equivalent and reputed make.
 - b) Governing - Speed variation under any load will be minimum
 - c) Aspiration - Turbo charged intercooled
 - d) Noise level – As recommended by Govt. of India
 - e) Cooling system- Water cooled.
 - f) Standard integral set-mounted radiator system, designed and tested for 50° C ambient temperature.

6. A .C. Generator

- 6.1 The A.C. brushless generator shall capable of meeting the following performance parameters:
- a) Make for Alternator: Stamford/ Kirloskar/Crompton / Kirloskar Green/ NGEF or equivalent of any other reputed make.
 - b) Type - Self excited and regulated brushless
 - c) Continuous output - 400 kVA at 50 Hz, 0.8 pf. lag at NTP
 - d) Speed - 1500 rev/min
 - e) Class of insulation - 'H'
 - f) Voltage - 415 volt (generated voltage) 3 phase, 4 wire (neutral)
 - g) Voltage regulation - Variation within +/- 1%
 - h) Frequency - 50 Hz
 - i) No. of phases - Three phase four wire system with neutral
 - j) Neutral earthing - Neutral should be earthed separately with breaker
 - l) Compact design with sealed bearings for longer life and lesser maintenance.

6. Mounting arrangement:

Engine & Alternator are to be floor mounted on a common MS fabricated base frame. Base frame with integral fuel tank is to be provided with drain plug, air vent, inlet and outlet connection, level indicator and provision for cleaning.

8. Relay based AFM Control Panel suitable for 400KVA DG power evacuation comprising of :

- 8.1
- i) 630A, 415V MCCB with O/C & S/C) Thermal Magnetic Release with spreader link.

- ii) 4P Power contactor, 700A capacity with 2NO+2NC aux. contact. Coil voltage 230V AC
 - iii) Digital multifunction meter 1.0 Accuracy Class along with required CT
 - iv) E/F, Aux. and voltage monitoring relay as per requirement
 - v) Indicating lamp and push buttons, selector switches as per requirement
 - vi) MCB, contactors etc. as per requirement
 - vii) For auto start scheme, required timer, contactors etc., whatever required.
 - viii) 6-12-24V selector battery charger with 230V AC I/P or latest SMPS battery bank to run the DG
 - ix) Armoured multistrand copper power cable to carry full load continuous DG Current from DG Set to the panel. Minimum 1.1KV grade, Length: 10 Mtr., make: Havells
 - x) 2.5 sq mm armored multistrand copper cable of 60 Mtrs length suitable core with minimum 4C as spare for remote operation i.e. from control room. Make: Havells/Finolex.
- 8.2 The control panel shall have two modes of operation
- i) Auto mode
 - ii) Manual mode
- 8.3 The controller shall have scrolling facility for monitoring the
- (i) Voltage (ii) Frequency (iii) Current (iv) Power Factor (v) KWH. (vi) RPM Gen set and the common load.
- 8.4 The Control Panel shall be designed to provide Alarm Indications along with Relay Output. All electrical parameters shall be continuously scrolling on the LCD display. Various fault conditions like LOP, Over Speed, Over Load, Low Fuel Level, Fail to Start, Over heat, low coolant/ lubrication, total running hour etc. shall be annunciated with indication on error message.
- 8.5 Control panel shall have Start/ Stop indications for manual operations as under:-
- 8.6 A system comprising of visual indication & auto trip shall be provided to safeguard the Genset against the following fault conditions: -

Overload Short circuit	Overload Short circuit
Low lubricating oil pressure (L.L.O.P)	High cylinder head temperature
V belt failure	Single phasing
Over speed	Over voltage
Under voltage	Over/under frequency

9. Documents

The following literature/ manuals supplied along with the DG sets

- (a) User Hand Book
- (b) Technical Manual

10 . Earthing Spike

GI earthing spikes with copper braided wire of suitable length shall be supplied for earthing of the 40 kVA genset. The GI spikes shall have provision to bolt the earth wire rigidly on it.

11. Non Contact Thermometer

Non-contact thermometer to measure the temperature shall be supplied along with system.

12. Silencer:

Hospital grade silencer suitably optimised to meet stringent noise emission standards laid by MoEF/ CPCB

13. Accessories

Each acoustic container shall contain following accessories in addition to the gensets and control panel

- i) AC & DC lights at genset cabin
- ii) Tool box - 1 No.
- iii) Mandatory spares

Manager (E/M), C&P (E)
KHEP, NEEPCO Ltd., Umrongso
Dima Hasao, Assam

ANNEXURE –B**PRICE SHEDULE:**

Sl. No.	Description of the item	Qty	Rate in Rs	Amount in Rs
1	Price of 400kVA (CPCB-II) Silent Generator set upto destination at Khandong Power Station, KHEP, NEEPCO Ltd., Umrongso, Dist., Dima Hasao, Assam including all accessories.	1 set		
2	Price of mandatory spares (list of spares to be enclosed)	1 set		
3	Freight and insurance charges upto destination	1 lot		
4	Price of Installation, Testing & Commissioning at site including civil works and other related works, if any.	1 job		
5	Applicable Taxes on supply of equipment & accessories	%		
6	Applicable Taxes on Installation, Testing & Commissioning.	%		
7	Any other taxes if applicable	%		

Manager (E/M), C&P (E)
KHEP, NEEPCO Ltd., Umrongso
Dima Hasao, Assam