



NORTH EASTERN ELECTRIC POWER CORPORATION LTD
(A GOVT. OF INDIA ENTERPRISE)
OFFICE OF THE SENIOR MANAGER (E/M),HGC
DHEP: NEEPCO: DOYANG, WOKHA
NAGALAND. PIN: 797111

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NOTICE INVITING BID (NIB)

N.I.B. No. 01/ HGC/2016-17 Dated 25/04/2016

The North Eastern Electric Power Corporation Limited (NEEPCO), a Public Sector Enterprise under the Ministry of Power, Government of India invites Two-Stage Two Envelope Bids from a Reputed Manufacturer / Authorized Distributor or Dealer of Original Equipment Manufacturer of Variable Refrigerant Flow (VRF) based Air Conditioning System for Supply, Transportation to site, Insurance from the source of supply till commissioning, Delivery, Installation, Testing and Commissioning of Variable Refrigerant Flow (VRF) based Air Conditioning System for Doyang Hydro Electric Power Station, NEEPCO, Doyang, Wokha, Nagaland.

Particulars	Cost of Bid Document (Bid Fee)	Value of Earnest Money Deposit (EMD)	Bid validity	Estimated value.	Completion Period.
Supply, Transportation to site, Insurance from the source of supply till commissioning, Delivery, Installation, Testing and Commissioning of Variable Refrigerant Flow (VRF) based Air Conditioning System for Doyang Hydro Electric Power Station, NEEPCO, Doyang, Wokha, Nagaland and other required accessories conforming to the technical specifications in Annexure-I.	Rs. 2,000.00 (Rupees two thousand) only.	Rs. 1, 00,000.00 (Rupees one lakh) only.	180 (one hundred and eighty) days	Rs 46, 00,000.00 (Rupees forty six lakhs)	90(ninety) days.

1. QUALIFYING REQUIREMENTS

1.1 Technical

- Bidder must be a reputed Manufacturer/Authorized Distributor or Dealer of Original Equipment Manufacturer (OEM) of Variable Refrigerant Flow (VRF) based Air Conditioning System and must have experience in Supply, Installation and Commissioning of Variable Refrigerant Flow (VRF) based Air Conditioning System to any Government Department/Public Sector Undertaking. The bidder should have executed/completed supply,

installation and commissioning of VRF based Air Conditioning System during last 7 (seven) years, ending last day of the month previous to the date of NIT having minimum order values as indicated below:

- a. Three executed/completed Orders, as above, of value not less than Rs.18.4 Lakhs each.

OR

- b. Two executed/completed Orders, as above, of value not less than Rs. 23 Lakhs each.

OR

- c. One executed/completed Order, as above, of value not less than Rs.37 Lakhs.

Documentary evidence in support of the above technical criteria will have to be submitted in the form of:

(A) Purchase Order/Work Order copies duly certified by the Client/Owner along with copies of Invoice(s)/Bill(s).

and

(B) Performance Certificate /Completion Certificate/Execution Certificate/Evidence issued by respective authority i.e the Client /Owners mentioning order reference, details, order value, date of completion etc. that can substantiate the satisfactory execution of supply, installation and commissioning of Variable Refrigerant Flow (VRF) based Air Conditioning System as per the Purchase Orders/Work Orders cited above.

- (ii) The bidder should not have been blacklisted by any Government/Government agency in India. Self declaration to that effect should be submitted along with the bid.
- (iii) The bidder must submit valid manufacturer's license or valid distributorship/ dealership certificate of the OEM supporting the claim.

1.2 Financial:

- (i) **Minimum Average Annual Turnover (MAAT):** The average annual turnover of the bidder in the best 3(three) financial years out of the last 5 (five) financial years should not be less than INR 69, 00,000.00 (Rupees sixty nine lakhs) only. Other income will not be considered for arriving at annual turnover.
- (ii) **Liquid Assets:** The bidder should have liquid assets or / and evidence to availability of unutilized credit facilities of not less than **INR. 38, 00,000.00** (Rupees thirty eight lakhs) only. The Certificate of Banker regarding the availability of unutilized credit facilities shall not be dated earlier than **30 (thirty)** days prior to the date of opening of the bid.

1.3 Complete Audited Annual Reports along with Audited Balance Sheets, Profit and Loss Account for the last 5(five) financial years ending with the financial year 2015-16 certified by a Chartered Accountant indicating the Annual financial turnover and latest Banker's Certificate in support of solvency shall be furnished for evaluating the financial criteria. In case where the audited results of the preceding financial years are not available, certified financial statements from a practicing Chartered Accountant will also be considered acceptable.

1.4 Interested bidders who fulfill the qualifying requirements as mentioned at 1.1 and 1.2 above, may download the bid document from NEEPCO website: www.neepco.gov.in

2. Power of Attorney shall have to be submitted in case the tender is signed by an authorized representative of the bidder, otherwise the bid shall be rejected.
3. The bidder shall submit self-attested photocopies of valid VAT Registration Certificate/valid CST Registration Certificate and the latest and valid Sales Tax Clearance certificate.
4. The bidder shall furnish Permanent Account Number (PAN) for Income Tax. Self-attested photocopy of PAN card shall have to be submitted.
5. The bidder shall submit self-attested photocopy of valid Service Tax Registration Certificate and self-attested photocopy of Registration under EPF from appropriate Authorities.
6. Authenticated documentary evidence in support of qualifying requirements, as mentioned under Clause No. 1.1 (Technical) (i), (ii), (iii) and Clause no. 1.2 (Financial) (i) & (ii) above shall be submitted with the Techno-Commercial bids. For qualifying requirements specified at Clause no.1 above, the documents should be in the form of Certificates of Clients/Owners. Bids submitted without fulfilling the qualifying requirements shall be rejected.
7. Copies of all certificates submitted shall be duly authenticated by the bidder.
8. In addition, bidders shall satisfactorily establish that they fully meet the qualifying requirements specified in the accompanying Technical Specifications. This is essential for consideration of bidders' proposal.
9. Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by any bank.
10. The above requirements are minimum and the Purchaser 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 Purchaser, the qualification data furnished by the bidder is incomplete or the bidder is found to be not qualified to satisfactorily perform the works.
11. Notwithstanding anything stated above, the Purchaser reserves the right to assess bidders' capability and capacity to perform the work, should the circumstances warrant such an assessment, in the overall interest of the Purchaser.
12. Each bidder shall submit only 1 (one) bid. A bidder who submits or participates in more than 1 (one) bid will be disqualified.
13. **Submission and opening of Bids**

Bidders shall prepare and submit their bids to the following address:

Senior Manager (E/M),

Hydro Generation Circle,

DHEP, NEEPCO, Doyang

Wokha-District, Nagaland. PIN: 797111

14. Important Dates:-

(c) Last date & time for receipt of Bids: **25/05/2016 at 12.00 Hrs**

(d) Date & time of opening of bids: **25/05/2016 at 15.00 Hrs**

In the event the last date specified for submission of bids and date of opening of bids is declared as a closed holiday for NEEPCO, the last date of receipt of bid document and opening of bids will be the following working day at the appointed times.

15. Bidders are requested to visit “<http://www.neepco.gov.in>” regularly for any modification/clarification of the bid document.
16. Submission of bids shall not automatically construe qualification for evaluation. The Purchaser 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 Purchaser.
17. The undersigned reserves the right to accept or reject any or all Bids in part or full without assigning any reasons thereof and is not bound to accept the lowest Bid.
18. The undersigned also reserves the right to split the offer to different parties.

The Detailed Bid Documents comprise of:

1. Annexure-I, Technical Specifications.
2. Annexure-II, Bid Form.
3. Annexure-III, Power of Attorney.
4. Annexure-IV, Technical Compliance.
5. Annexure-IV, Undertaking.
6. Annexure-IV, Declaration.
7. Bid Document: Terms and Conditions.
8. Data Sheet-1, Similar Experience.
9. Data Sheet-2, Financial Data.
10. Data Sheet-3, Technical Compliance.
11. Data Sheet-4, Check List.
12. Price Schedule.

Sd/-

**Sr. Manager (E/M)
Hydro Generation Circle**

TECHNICAL SPECIFICATIONS:

SCOPE:

The scope of the Variable Refrigerant Flow (VRF) based Air Conditioning System comprises of the supply, erection testing and commissioning of inverter based Variable Refrigerant Flow System with dual smart inverter Scroll Compressor conforming to these specification and in accordance with the requirements and Schedule of Quantities.

TYPE:

The Units shall be air cooled variable refrigerant flow air conditioner of R410A gas based consisting of modular type outdoor units and multiple indoor units. The indoor units on any circuit can be of different type and also controlled individually. Each of the modular type outdoor unit shall be equipped with dual smart inverter compressors. The system shall be capable of changing the rotating speed of inverter compressor with step less control by inverter controller to follow variations in cooling and heating load. Outdoor unit shall be suitable for mix match connection of all type of indoor units. Both indoor units and outdoor unit shall be factory assembled, tested and filled with first charge of refrigerant before delivering at site.

OUTDOOR UNIT: (Cooling + Heating)- 40HP (2 X 20HP);

The outdoor unit shall be factory assembled, weather proof casing, constructed from mild steel panels and Modular type equipped with highly efficient dual inverter compressors, eco-friendly refrigerant R410a special acryl pre-coated heat exchanger, low noise condenser fan, auto check function for connection error, auto address setting. The Unit should be completely factory wired and tested with all necessary controls and switch gears:

- Each outdoor unit individually shall have 2 Nos. of 20 HP dual smart inverter compressors so that the operation is not disrupted with failure of any compressor.
- It should also be provided with duty cycling for switching starting sequence of multiple outdoor units.
- It should also be suitable for operation within the ambient temperature range of -5 °C to 48° C
- Each the outdoor units should be provided with refrigerant cooled PCB, since , PCB cooled through ambient air is prone to frequent failures
- It should be provided with plate Heat Exchanger (PHE) type Intercooler
- It should be capable of Refrigerant Pump Out & Pump Down
- The outdoor unit shall be modular is design and should be suitable for side by side installation
- The unit shall be provided with its own microprocessor based control panel.
- The outdoor units shall be complete with safety devices.

The outdoor unit should be fitted with low noise aero spiral design fan with multiple speed DC motor and large airflow and should be designed to operate compressor-linking technology. The unit should also be capable to deliver 70 pa external static pressure to meet long exhaust duct connection requirement & to avoid short cycling of hot exhaust air.

COMPRESSOR:

The compressor shall be highly efficient scroll type and capable of inverter control. It shall change the speed in accordance to the variation in cooling or heating load requirement:

- Dual smart inverter compressors shall be provided in each of the modular type outdoor unit
- Compressor shall be capable to operate till a minimum frequency of 14Hz
- Compressor shall be provided with Vapour Injection System
- Should be capable of Auto Oil Balancing, hence, no extra oil balancing pipe is desirable.

HEAT EXCHANGER:

The heat exchanger shall be constructed with copper tubes mechanically bonded to aluminum fins to form a cross fin coil.

- The aluminum fins shall be covered by anti-corrosion resin film.
- The Unit shall be provided with necessary number of direct driven low noise level propeller type fans arranged for vertical discharge. Each fan shall have a safety guard.
- The refrigerant circuit includes liquid and gas shut-off valves.
- All necessary safety devices shall be provided to ensure the safety operation of the system.

INDOOR UNIT: Type: 4-Way Cassette Units with Cordless Remote.

Indoor units shall be ceiling mounted 4- way cassette type of various capacities as per drawings and capacity below:-

1. 4.0TR - 9 Nos.
2. 3.0TR – 2 Nos.
3. 1.5TR – 2 Nos.

The indoor units shall have electronic control valve to control refrigerant flow rate respond to load variation of the room. The address of the indoor unit shall be set automatically in case of individual and group control. The fan shall be aerodynamically designed turbo, multi blade type, statically & dynamically balanced to ensure low noise and vibration free operation of the system. The fan shall be direct driven type.

The cooling coil shall be made out of seamless internally corrugated copper tubes and have continuous aluminum fins. The fins shall be spaced by collars forming an integral part. The tubes shall be staggered in the direction of air flow. The tubes shall be hydraulically/mechanically expanded for minimum thermal contact resistance with fins.

Unit shall have cleanable type filter fixed to an integrally molded plastic frame. Each unit shall be with wireless remote controller. The controller shall have self-diagnostic features for easy and quick maintenance and service. The controller shall be able to change fan speed and angle of swing.

The Unit shall include pre-filter, fan section and Coil Section. The housing of the unit shall be powder coated galvanized steel. The body shall be light in weight and shall be able to suspend from four corners. Unit shall have an external attractive panel for supply and return air. Each unit shall have drain pump, fresh air intake provision. All the indoor units regardless of their capacity should have same decorative panel size for harmonious aesthetic point of view. It should have provision of connecting branch ducts.

Cassette Panels for the above Indoor Units and other required accessories.

Safety Devices:

All necessary safety devices shall be provided to ensure safe operation of the system. Following safety devices shall be part of the Outdoor unit: high pressure switch, fuse, crankcase heater, fusible plug, overload relay, protection for inverter.

Refrigerant Piping:

All refrigerant piping for the air conditioning system shall be constructed from annealed pipes up to 19.05 mm and hard drawn copper refrigerant pipes for above 19.05 mm with copper fittings. The refrigerant piping arrangement shall be in accordance with good practice within the air

conditioning industry and are to include charging connections, suction line insulation and all other items normally forming part of proper refrigerant circuits. All joints in copper piping shall be sweat joints using low temperature brazing and or silver solder. Before joining any copper pipe or fittings, its interiors shall be thoroughly cleaned by passing a clean cloth via wire or cable through its entire length. The pipe shall be continuously kept clean of dirt etc. while constructing the joints. Subsequently, it shall be thoroughly blown out using nitrogen.

After the refrigerant piping installation has been completed, the refrigerant piping system shall be pressure tested using nitrogen at pressure of 550PSIG. Pressure shall be maintained in the system for 24 hours. The system shall then be evacuated. The air conditioning system supplier shall erect proper interconnections of the complete refrigerant circuit.

The thickness of copper piping shall not be less than mentioned below:

<i>Pipe Size in mm (OD)</i>	<i>Wall Thickness in mm</i>
a) 41.28	1.43
b) 38.1	1.35
c) 34.92	1.21
d) 31.75	1.10
e) 28.58	1.10
f) 25.4	1.0
g) 22.22	0.9
h) 19.05	0.9
i) 15.88	1.0
j) 12.7	0.8
k) 9.52	0.7
l) 6.35	0.7

The suction line pipe size and the liquid line pipe size shall be selected according to the reputed manufacturers specified outside diameter.

All refrigerant pipes shall be properly supported and anchored to the building structure using steel hangers, anchors, brackets and supports which shall be fixed to the building structure by means of inserts or expansion shields of adequate size and number to support the load imposed thereon.

All the Y-joints, header joints etc. required for the installation of the piping should be manufactured and supplied by the VRF-Air Conditioning System equipment manufacturer.

PIPE INSULATION;

a) Refrigerant Pipe Insulation:

The whole of the liquid and suction refrigerant lines including all fittings, valves and strainer bodies, etc. shall be insulated with 19mm/13 mm thick elastomeric nitrile rubber as specified in BOQ.

b) Drain Pipe Insulation:

Drain pipes carrying condensate water shall be insulated with 6mm thick elastomeric nitrile rubber insulation. For proper drainages of condensate U Trap shall be provided in the drain piping (wherever required). All pipe supports shall be of pre fabricated & painted slotted angle supports, properly installed with clamps etc.

Block Diagram of VRF Air Conditioning System for Doyang Power Station

