



प्रसार भारती PRASAR BHARATI  
(भारत का लोकसेवा प्रसारक INDIA'S PUBLIC SERVICE BROADCASTER)  
कार्यालय अपर महानिदेशक (प्रसारण संचालन) (पूर्वोत्तरक्षेत्र)  
OFFICE OF THE ADDITIONAL DIRECTOR GENERAL (A & BO) (NEZ)  
आकाशवाणी एवं दूरदर्शन AKASHVANI AND DOORDARSHAN  
दूरदर्शन परिसर, आर.जी.बरुआ मार्ग, गुवाहाटी- 781 024  
DOORDARSHAN COMPLEX, R.G.B.ROAD, GUWAHATI - 781024



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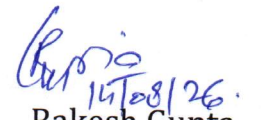
**Subject** – Submission of Budgetary Quotation for SITC of 25 kva, 3-phase, air cooled, 415 volts silent diesel generating set with AMF control panel in an acoustic enclosure for Akashvani Diphu.

Dear Sir/Madam;

Budgetary Quotation is invited for the SITC of 25 kVA, 3-phase, air cooled, 415 volts silent Diesel Generating set with AMF control panel in an acoustic enclosure for Akashvani Diphu.

Bidders are requested to submit the Budgetary Quotation for the subject cited above according to the specification attached along with this letter on or before 21/08/2026(2:00PM) by E-mail to this office at [purchase.nez@gmail.com](mailto:purchase.nez@gmail.com) or at following address –

Rakesh Gupta,  
Senior Engineering Assistant,  
Purchase Section, Room No.-017.  
O/o ADG(BO)(NEZ) Akashvani & Doordarshan,  
Doordarshan Kendra Guwahati,  
RG Baruah Road,  
Near AIDC Bus Stop,  
Guwahati, Assam-781024.

  
Rakesh Gupta

Senior Engineering Assistant (Purchase)  
for O/o ADG(A & BO)(NEZ), Akashvani & Doordarshan,  
Guwahati, Assam-781024.

**TECHNICAL SPECIFICATION FOR 25 kVA, 3-PHASE, AIR COOLED, 415 VOLTS SILENT DIESEL GENERATING SET WITH AMF CONTROL PANEL IN AN ACOUSTIC ENCLOSURE**

**A) Detailed specification for alternator, Diesel Engine and AMF control panel:**

Diesel Generating set complete with Diesel Engine, Alternator and AMF panel conforming to the specification given below. Diesel engine and alternator shall be closely coupled or provided with flexible coupling and mounted on a base plate of robust in construction. DG set shall meet the requirements of environmental protection rules, 1986 as laid down by Ministry of Environmental & **compliant to MOEF rules called Environment (Protection)(Third Amendment) Rules, 2013 effective from 1<sup>st</sup> July 2014**, in respect of “emission norms for the engine and in respect “noise norms” for DG sets.

DG set should have protection against under voltage, over voltage, under frequency, over frequency, low battery, voltage, over current, earth fault, short circuit, phase sequence change etc.

**1) ALTERNATOR:**

The alternator shall be self-excited and self-regulated of specified KVA rating in three phase at 415 volts, 50Hz, 1500 RPM & 0.8 PF and shall conform to IS: 13364 (Part 2)/1992 (reaffirmed 2003). The alternator shall be of brush type or brushless type with VG1/VG-2 Grade of voltage regulation. The alternator shall be screen protected, drip proof with IP-21 or better degree of protection as per IS: 4691/85 (reaffirmed 2004). The alternator should be suitable to take unbalanced load as per IS: 13364 (Part-2)/1992 (reaffirmed 2008). The class of insulation of the alternator would be the F/H. The rated voltage of alternator is 415 V.

**2) DIESEL ENGINE:**

The Diesel Engine shall be air cooled as specified, electric start developing required BHP at 1500 RPM with class A-2 or better governing to deliver specified continuous KVA output as 0.8 Power Factor Lag at NTP conditions (all ratings shall be tested at unity power factor). The Diesel engine should be capable of providing 10% overload for one hour in every 11 hours continuous running at full load. The Diesel engine shall **compliant to MOEF rules called Environment (Protection)(Third Amendment) Rules, 2013 effective from 1<sup>st</sup> July 2014**, specific fuel consumption (SFC) shall be as per IS specification.

Naturally aspirated engines shall conform to IS 10000-2/81. Pressure charged engines shall conform to IS 13018/1990 (reaffirmed 2000)

The Diesel engine shall be complete with the following accessories.

- a) Fuel tank with air breather, drain plug with capacity for 12 hours of continuous running at full load.
- b) Engine instrument panel consisting of starting switch with key, lube oil temperature and pressure gauges, RPM indicator and hour meter with additional feature of auto start/remote start and auto stop.
- c) Safety control to shut down the engine in the event of overspeed, low lube oil pressure and high engine water temperature.
- d) Exhaust silencer residential type.
- e) 12 V or 24 V starting system complete charging alternator or dynamo and cutout.
- f) Lead Acid/semi-maintenance free batteries of suitable rating with connecting cables. The batteries shall be applied dry and in uncharged condition and shall conform to relevant IS only.
- g) Standard set of tools consisting of a set of 3 spanners, 1 screw driver, 1 standard and 1 nose pliers of appropriate size shall be provided to the consignees along with DG set free of cost for each of DG sets.
- h) There should be provision for filling the fuel from outside (as in case of automobiles) with locking arrangement.

### 3. **AMF CONTROL PANEL:**

AMF (Automatic Main Failure) control panel shall be able to start up the DG set and transfer the load to DG set on the mains failure without requiring any human intervention. Similarly on restoration of the mains supply it shall be able to transfer the load to mains supply and switch off the DG set automatically.

The AMF panel shall be enclosure with the IP-53 degree of protection to IS: 13947 (pt 1/1993) fabricated from minimum 1.5 mm thick steel duly pre-treated and aesthetically finished.

The AMF control panel shall consists of following instruments of which any of the items can be supplied in a combined relay/ meter also.

- a) Microprocessor based relay with composite meter for digital display of:-
  - i. Generator Voltage / A.C. Main Voltage
  - ii. Generator Current
  - iii. Power Factor
  - iv. Frequency
  - v. Energy
  - vi. Three attempts engine start / engine cranking key
  - vii. On delay timer for load change over
  - viii. On delay timer for engine shut off
- b) Mode selector switch for setting the panel on any one position such as off or auto or manual or test.
- c) Engine ON-OFF switch (push button type).
- d) MCCB of suitable rating shall be provided.
- e) Rectangular aluminum bus bars (1 no. for each phase, neutral and earthings terminal) of adequate ratings duly colour with head shrinkable PVC sleeves.
- f) Two nos. power contactor of suitable rating (one for A.C. Mains and one for DG set) with Over Load (O/L) relay.
- g) Under Voltage (U/V) Relay for mains.
- h) Battery charger complete with voltage regulator, float or booster selector switch, ON-OFF switch, voltmeter and Ammeter for charging the battery from Mains. This will be in addition to battery charging alternator fitted on the engine.
- i) Instrument and control fuses.
- j) Five number indicating lamps to indicate 'Main ON', 'Load on Mains', 'DG set running', 'Load on DG set' and 'Battery charger ON'
- k) Audio visual alarm for 'Low Lubricating oil Pressure', 'high water temperature' (for water cooled), 'High cylinder head temperature' (for air cooled), start failure and DG over load.
- l) Any other switch, instrument, relay or contractor etc. essential for smooth and trouble free functioning of DG set with AMF panel.

### 4. **ACCOUSTIC ENCLOSURE:**

The acoustic enclosure shall conform to the drawings TYPE approved by a Govt. lab, for conformity to noise norms. This aspect shall also be verified by QA officer at the time of inspection. The QA officer shall tally the enclosure offered with the approved drawing.

**The Acoustic enclosure should consist of following:**

- 1) The enclosure should be fabricated out of CRCA sheet of minimum 1.6 mm thick.
  - 2) The sheet metal components should be suitably pretreated and should be powder coated to have long life of enclosure.
  - 3) The battery should be accommodated a separate tray in the enclosure.
  - 4) There should be provision of drain plugs for draining lube oil and diesel.
  - 5) The doors should be gasket with quality gaskets to avoid leakage of sound.
  - 6) The door handle should be lockable type.
  - 7) Sound proofing of enclosures should be done with high quality rock wool/ mineral wool/ foam / fiberglass wool.
  - 8) The rock, mineral, fiberglass wool is further covered with fiberglass cloth and perforated powder coated sheet.
  - 9) A special residential silencer should be provided along with the enclosure to control extract noise.
  - 10) Specially designed louvers should be provided to control sound at air entry to the container and exit from the container.
  - 11) It should have Type approval certificate and also COP certificate (if applicable) from certification agencies mentioning MOEF notification no. 371 (E) dt: 17/05/2002 or as amended and applicable at the time of supply.
  - 12) Ambient temperature limit inside the canopy should be specified.
  - 13) There shall be provision for emergency, STOP from outside the enclosure.
  - 14) Acoustic Enclosure shall conform the pollution noise norms stipulated in notification 3SR 371Edt: 17/05/2002, amended upto date.
5. The supplier shall furnish Complete & satisfactory Type test certificate (TTC) for engine, alternator complete with enclosure to be used by them for each rating of DG set clearly indicating make, model and ratings of the DG sets tested to the Inspecting Officer at the time of pre-dispatch inspection. The TTC shall be from any Govt. Lab. Type tests conducted by inspecting officer at the firm's premises shall also be accepted. The TTC of three phase alternators shall cover unbalanced load test as per cl.24 of IS: 13364 (Part-2)/1992 (reaffirmed 2003) as applicable.
- Type Test certificate (TTC) including Endurance Test for the lowest and the highest rating of the Engines (of one make) offered by them as per IS: 13018/1990 (reaffirmed 2000). All the ratings following between the ratings tested for Type Test and Endurance Test shall be deemed to have been tested for this purpose. However, all the engine models / ratings will need other relevant certifications as per norms.
6. Testing of DG sets shall be done at unity power factor.
  7. Testing is to be done at continuous power output for each rating.
  8. DG set shall meet the requirements of Environmental (protection) rules 1986 as laid down by Ministry of Environment and Forest read with GSR 371(E) dt: 17/05/2002, GSR 520 (E)dt: 01/07/2003 and GSR 448(E) dt: 12/07/2004 in respect of emission norms.
  9. Supplier shall furnish copy of Type approval certificate from an authorized agency for "emission norms" for the engine and noise level norms for DG sets with tender as well as at the time of inspection.
  10. Scope of supply shall include supply and commissioning of complete DG set at consignee's end but shall exclude installation and erection.

**TECHNICAL SPECIFICATION OF LIQUID COOLED SILENT TYPE DG SET WITH AMF PANEL**

| Sl. No. | Description                                                                                                                                                                         | AIR's Specification                         | To be furnished by Tender | Remarks |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------|---------|
| 1.      | Liquid Cooled Silent Type Genset with AMF Panel <b>compliant to MOEF rules called Environment (Protection) (Third Amendment) Rules,2013 effective from 1<sup>st</sup> July 2014</b> | 25 KVA DG/20 KW                             |                           |         |
| 1.1     | Make & Model                                                                                                                                                                        |                                             |                           |         |
| 1.2     | Frequency                                                                                                                                                                           | 50 Hz                                       |                           |         |
| 1.3     | Power Factor                                                                                                                                                                        | 0.8 Lagging                                 |                           |         |
| 1.4     | Governing Class                                                                                                                                                                     | (As per ISO 8528 Part-V)                    |                           |         |
| 1.5     | Noise Level at a distance of 1 Meter                                                                                                                                                | <75 dB A                                    |                           |         |
| 1.6     | Fuel Consumption<br>a) At 50% Load<br>b) At 75% Load<br>c) At 100 % Load                                                                                                            |                                             |                           |         |
| 1.7     | Fuel Tank Capacity                                                                                                                                                                  | Sufficient for 12 Hrs of continuous running |                           |         |
| 1.8     | Overall dimension of Genset (LxWxH)                                                                                                                                                 |                                             |                           |         |
| 1.9     | Dry Weight of Genset with canopy(approx)                                                                                                                                            |                                             |                           |         |
| 1.10    | Weight of Gen set with Canopy)                                                                                                                                                      |                                             |                           |         |
| 1.11    | Electrical Battery Starting Voltage                                                                                                                                                 |                                             |                           |         |
| 2.0     | <b>Diesel Engine</b>                                                                                                                                                                | KW                                          |                           |         |
|         |                                                                                                                                                                                     | HP                                          |                           |         |
| 2.1     | Make & Model                                                                                                                                                                        |                                             |                           |         |
| 2.2     | Rated Output (Prime continuous rating)                                                                                                                                              |                                             |                           |         |
| 2.3     | No. of Cylinder                                                                                                                                                                     |                                             |                           |         |
| 2.4     | Cubic Capacity                                                                                                                                                                      |                                             |                           |         |
| 2.5     | Rated Speed(RPM)                                                                                                                                                                    | 1500                                        |                           |         |
| 2.6     | Lube Oil Change Period                                                                                                                                                              |                                             |                           |         |
| 2.7     | Lube Oil Sump Capacity                                                                                                                                                              |                                             |                           |         |
| 3.0     | <b>Alternator</b>                                                                                                                                                                   |                                             |                           |         |
| 3.1     | Make and Model                                                                                                                                                                      |                                             |                           |         |
| 3.2     | Insulation Class                                                                                                                                                                    | Class H                                     |                           |         |
| 3.3     | Alternator efficiency (at 100% load)and 0.8 pf                                                                                                                                      |                                             |                           |         |
| 3.4     | Max. voltage dip at 100% load and 0.8 pf                                                                                                                                            | >=91%                                       |                           |         |
| 3.5     | Max. time to built up rated voltage at rated rpm                                                                                                                                    | ≤20%                                        |                           |         |