

ANNEX A1

BGD - UNHCR RFQ 2305

Technical Specification

**For the supply, delivery, installation, testing, and commissioning of one Nos.
125 kVA generators at Shalbagan, Cox's Bazar**

Required Specification	Description
Type	Indoor Generator
Rated Voltage	400-415 V, 3 phase;
Power factor	0.8
Frequency	50 Hz; Speed: 1500 RPM
Capacity	125 KVA (Prime)
Governor Type	Electronic
Fuel Type	Diesel
Operation Temperature	Equal or more than 25° C
Sound Level	Silent Type, below 62-78 dBA at 7 meters
Canopy	Included weather and soundproof
Engine & Alternator Brand name & model	From a highly developed global supply chain
Engine & Alternator origin	European, North American or Japanese
Standards	Manufactured, assembled and tested in accordance with NEMA / IEC / VDE / JIS standards along with relevant BDS IEC standards.
Voltage Regulator	Included (±1%)
Mounting type	Mounting spring and vibration isolator (to keep very minimum vibration in the room), mounting steel base frame.

The technical offer must be separate, without pricing, and shall include submission of the following technical requirements in clear and detailed documentation; failing to provide this information will result in excluding that offer from the evaluation.

- **Compliance sheet** for the above table.
- **Technical specification sheet** for the offered generators.
- **Warranty:** covering the following factors as minimum standards; any additional coverage is a plus:
 - Warranty for a minimum of 1 year (but the preferable warranty period is 2 years) from the installation date.
 - i. Free of charge replacement of any damaged parts due to faulty manufacturer or workmanship.
 - ii. Periodic maintenance service during the warranty period.
- 24/7 emergency response must provide a contact number, email address, and assigned focal point.

- The supplier must provide pricing for consumable parts that will be used for servicing the generator during the warranty period. The required consumable parts need to be in ready stock with the supplier, and during servicing time, they need to bring item with them.
- **Detailed periodic maintenance schedule** to be provided for the first year of operation, taking in consideration that each generator will be prime operated, loaded at 80%, running for a continuous 8 hours a day and 7 days a week.
- The supplier will carry-on the maintenance of the generator as per the schedule below during the warranty period without any labor charges to be applied.
- Deep Sea Electronics or an equivalent digital controller for the generator must be included, having the following minimum specifications:
 - Two modes (Auto/Manual)
 - Displays fault details and automatically stops the generator when faults happen
 - LCD with back light
 - Provide information about the generator, minimum information to be displayed: (Voltage, current, temperatures, load. Frequency, battery voltages, oil pressure, RPM, hour meter)
- The local agent for the supplier in Cox's Bazar is a plus for quick response for maintenance.
- Supplier must supply and install the ATS rated the highest current carrying capacity of the generator during standby mode.
- Supply and installation of all the required length (up to ATS and grounding busbar) and size (more than 5% extra current carrying capacity cable compare to the highest current generating capacity per phase for generator running on standby mode) of cable to connect the generator with ATS and grounding busbar to ensure all the safe connection as per BNBC standard along with generator's body earthing and main earthing.
- The supplied cable must be of BRB, Paradise or any other similar reputable brand of which the detail technical specification sheet must need to be submitted.
- Supply and installation of generator's body earthing and main earthing using non-chemical components, including all necessary accessories, to ensure safe completion of the task. The grounding busbar shall be properly connected to the generator, and the earthing system must achieve a resistance of: 10 ohms or less during summer days (provided there has been no rain in the last 3 days during the measurement and verification date) or 5 ohms or less during rainy days (if it has rained within the last 3 days).
- The fuel tank capacity must be within a range of **250–300 liters**.
- The maximum acceptable limit of fuel consumption is **26.5 litres per hour at 75% load**
- Supply & installation of an exhaust pipe to take the smoke out of the room and in an upward direction.

SCHEDULED MAINTENANCE PROGRAM

The maintenance program shall include, but should not be limited to, the following works:

- **Every 100 service hours:**
 - Control Panel - Inspect/Test
 - Cooling System temperature & Coolant Level - Check
 - Engine Air Cleaner Service Indicator - Inspect
 - Engine Air Pre-cleaner - Clean
 - Engine Oil Level - Check
 - Fuel Level & filter - Check
 - Fuel Tank Water and Sediment – Check/drain
 - Generator Bearing Temperature - Test/Record

- Generator Load - Check
 - Automatic Start/Stop - Inspect
 - Battery Charger/Alternator - Check
 - Electrical Connections - Check
 - Stator Winding Temperature - Test
 - Voltage and Frequency - Check
 - Exhaust system – Check
 - Air filter – check/clean
 - Walk-Around Inspection
 - Oil sample - check
- **Every 400 service hours for back-up operated generators and every 200 for prime operated generators (in addition to the above):**
 - Operate the generator for a minimum of 30 minutes loaded to no less than one-third of the nameplate rating;
 - Engine Speed/Timing Sensor - Clean/Inspect;
 - Engine Valve Lash - Inspect/Adjust;
 - Coolant concentration – Check;
 - Drive belt tension – Check;
 - Drain exhaust condensate from the system;
 - Starting batteries – Check;
 - Speed Sensor - Clean/Inspect;
 - Battery Electrolyte Level – Check;
 - Cooling System Supplemental Coolant Additive;
 - (SCA) - Test/Add;
 - Change oil and oil filter;
 - Change fuel filters;
 - Fan Drive Bearing – Lubricate;
 - Hoses and Clamps - Inspect/Replace;
 - Radiator – Clean;
 - Air filter – check/clean/replace;
 - ATS – Test
 - Electrical System – Test.
 - **Every 2,000 service hours (in addition to the above):**
 - Change coolant filter;
 - Clean crankcase breather;
 - Change air cleaner element;
 - Check radiator hoses.
 - **Every 4,000 Service Hours (in addition to the above):**
 - Clean cooling system;
 - Clean air system;
 - Replace air filter.

NOTE: Generators with less than 30 service hours per month shall be tested every 3 months. Such quarterly testing shall include for all works outlined in the 100 and 400 service hours maintenance plans.