

a. Scope of Work

The National Database and Registration Authority (NADRA) intends to procure, supply, install, test, and commission (where applicable) the following equipment and services on turnkey base:

- i. Procurement, supply, installation, integration with the existing infrastructure, testing, and commissioning of two (02) Complete Built-Up (CBU) **DCC 680 kVA Diesel Generator Set (DG Set)**, compliant with Data Center standards. Generator contain internal fuel tank to provision 8hrs of backup as full load.
- ii. Supply, installation of **ATS system with MOR provisioning** and integration with power sources of the C&IT and NDW Directorate facility area, including all necessary electrical modifications and associated works.
- iii. Procurement, supply, installation, testing, commissioning and integration of a **vertical diesel fuel storage system**, including all allied mechanical, electrical, civil works, and accessories, compliant with TIA-942 Rated-3 requirements.

b. General Requirements, Terms and Conditions for DCC Generators

- i. The scope includes dismantling of the existing two (02) 500 kVA diesel generator sets, relocation of existing Gen set, replacing them with new generator sets at the same installation locations.
- ii. The existing diesel generator system is currently configured in a synchronized arrangement. Under the proposed upgrade, the new generator sets shall operate in a **1+1 independent topology**, whereby each generator shall feed a separate power path.
- iii. The existing synchronization arrangement shall be assessed and converted into two independent generator-backed power paths through the reuse, modification, upgrade, or replacement of panels, as required, following a detailed site survey.
- iv. Integrate all generator controller signals with the existing **SCADA system**.
- v. The objective of this tender is to obtain a complete **turnkey backup power solution** suitable for data center applications, site constraints,

operational reliability, and future maintainability requirements.

- vi. The successful bidder shall be responsible for the complete turnkey execution of the project, including but not limited to supply, delivery, dismantling, shifting, installation, electrical integration, fuel system installation, earthing, testing, commissioning, documentation, training, warranty, and preventive maintenance of the proposed diesel generator sets.
- vii. Supply of **OEM factory-assembled acoustic, weatherproof canopies** with each generator set.
- viii. Fuel storage capacity shall be sized to support a **minimum of twenty-four (24) hours of continuous operation at full DCC load** for each generator set.
- ix. Provision of a **gravity fuel filling / dispenser arrangement** for each external fuel tank.
- x. The generator cooling system shall be radiator-based and suitable for continuous operation at an ambient temperature of **50°C**.
- xi. Fuel tanks, including both built-in and outdoor vertical tanks, shall be equipped with **digital fuel level gauges and Dispenser System**.
- xii. **Dismantling** and removal of the existing two (02) 500 kVA diesel generator sets.
- xiii. **Safe shifting**, transportation, and handover of dismantled generator sets to the storage location designated by NADRA.
- xiv. The bidder shall submit a detailed **project execution schedule** upon award of the contract. The supply phase and installation phase shall be clearly identified in the project plan. All installation, testing, commissioning, documentation, training, and handover activities shall be completed within the stipulated timelines. Any planned shutdowns or service interruptions shall be coordinated with NADRA and executed only after obtaining the necessary approvals.
- xv. To relocate the electrical supply of the **C&IT Sitting Area** and **NDW**

Sitting Area from the existing Data Center Distribution Boards (DBs) to an alternate electrical source through the NADRA Building electrical distribution system and connection to Diesel Generator Set (DG Set).

- xvi. **Site Constrained and Foundation Details:** Available Generator Installation Area (232 inches x 386 inches). Existing Foundation Pad Size (each DG) (185 inches x 71 inches)
- xvii. Existing foundation pads shall be extended or modified, where necessary, based on the dimensions and loading requirements of the proposed equipment.
- xviii. Locally fabricated canopies shall not be acceptable.
- xix. **Electrical Modification and Independent Power Paths:** The bidder shall conduct a detailed survey of the existing synchronization panel, ATS panels, AMF controls, breakers, protection devices, cabling, cable routes, terminations, earthing and load distribution arrangement. The bidder shall include all required material, panels, breakers, ATS arrangements, control wiring, protection relays, metering, interlocks, cabling modifications, testing and commissioning required to convert the existing synchronized DG system into two independent DG backed power paths. The new DG sets shall operate independently and shall not be synchronized with each other for normal operation.
- xx. **Earthing and Bonding Requirements:** DG set shall be properly bonded and earthed, including DG body, alternator frame, acoustic canopy, control panel, fuel tank and associated metallic structures.
- xxi. Final earthing test report shall be submitted after completion.
- xxii. 04 Preventive maintenance shall be carried out as per OEM recommendation and NADRA approved schedule. Including all consumables.
- xxiii. **Warranty:** The supplied DG sets and associated works shall be covered under warranty for 2000 running hours or 12 months from the date of successful commissioning at site, whichever occurs later.

c. **General Requirements, Terms and Conditions for ATS with MOR System**

Conduct a comprehensive site survey covering; Existing foundations, Available installation area, Equipment access routes, Existing electrical panels, Synchronization panels, ATS arrangements, Cable routes, Earthing system, Exhaust arrangements and any other associated infrastructure.