

Field Engineering Department
Oil India Limited
Duliajan-786602, Assam
 (Email ID: FieldEngineering@oilindia.in)

Ref: FE/OIL/EOI/07/116/2022-23

20.04.2023

OIL INDIA LTD is a premier Navratna Company under the administrative control of Ministry of Petroleum & Natural Gas. OIL is engaged in exploration and production of Crude Oil & Natural Gas, transportation of Crude Oil & Natural Gas and Production of LPG. The Field Head quarter of OIL is at Duliajan in the district of Dibrugarh in Assam. The nearest Airport is at Mohanbari, Dibrugarh at a distance of 60km and Railway Station is at Duliajan Township.

OIL INDIA LIMITED intends to procure **Battery Energy Storage System (BESS)** for deploying in field installations where Gas Engine driven Generators of various capacities like 200KW, 400KW, 1.5MW are in operation 24x7 in Stand Alone Mode (one running and the other Standby) to provide electric power. The generators operate below their rated capacity when electrical load is low in the installation. Sometimes the generators run below 50% of their rated capacity. By incorporating BESS of suitable size with the Generator, we intend to run the Generator during the daytime only (charging the BESS) and drawing power from the charged BESS for the night hours. This combination will enable us to run the Generator at optimum load always and at the same time reducing the impact of harmful emissions on the environment.

Indicative Technical Specifications of the BESS is given here under:

System Components	Technical Specs	Bidder's Remarks
Battery	<ul style="list-style-type: none"> • NMC Batteries (Make - Samsung or Kore Power), 1C/0.5C Charger. • Designed and manufactured in facilities certified to standards ISO 2008:9001 and ISO 2004:14001. • Safety Test- UN 38.3; IEC 62619:2017. • Battery Room Protection Class: IP56 	
Operating Conditions	<ul style="list-style-type: none"> • Temperature Range: -20°C to 50°C. • Max Operational altitude: 2000m. • Humidity up to 100% condensing 	
Inverter	<ul style="list-style-type: none"> • Danfoss, Bidirectional & Grid Forming, • Liquid Cooled with overload capacity 50% and efficiency > 96% • Certification as per CERE internal process PET-CERE-09. • Rev 30 based on the requirements of the EN ISO/ IEC 17065:2012. 	
Fire Protection System	<ul style="list-style-type: none"> • Novec TM1230 - Gas Novec TM 1230. • Components certified by VdS inspected by TUV. 	
BESS Controller details and specifications	<ul style="list-style-type: none"> • Grid-forming (droop/ isochronous) • Grid-following • Black start (Make - Bachmann) • Start-up procedure 	

	<ul style="list-style-type: none"> • Battery Connection procedure • Standby Shut-down procedure • Active / Reactive Setpoint Control • Cell Voltage Protection • Button Operation 	
Container Specifications	<ul style="list-style-type: none"> • IP54/ 56 with C3 - industrial environment • C5M Corrosion Protection • The inside of the housing is modified to suit the needs of the battery system • Rubber-based flexible insulating material installed to prevent condensation • The doors sealed with an EPDM rubber • Impermeable floor • Adequate Ventilation for vapour 	
Safety System	<ul style="list-style-type: none"> • Lightning protection and earthing • Surge protection • Insulation Monitoring • Safety chain (hardware-based monitoring) • Fire detection <p>Safety test: UN 38.3; IEC 62619:2017</p> <ul style="list-style-type: none"> • Central fire detection system with carbon monoxide sensors and optional smoke sensors in the battery compartment. <p>Note: It may be noted that Battery Energy Storage System (BESS) is to be deployed in Oil & Gas Mines installations governed by Mines Act 1952 and Oil Mines Regulation 2017. It will be installed outside Zone 2 Area of Mines. The BESS should comply with all safety norms.</p>	
BMS System/ Auto-Operation	<ul style="list-style-type: none"> • System BMS for direct communication with the PLC and each of the rack BMS • Manages voltage balancing between the racks 	
Certification	<ul style="list-style-type: none"> • CE conformity certification 	
Modbus-IP	<ul style="list-style-type: none"> • Modbus-RTU, IEC 60870-5-104, IEC 61850, DNP3); 3G / 4G 100MB/s CAT5 	
Black Start	<ul style="list-style-type: none"> • Cabinet housing the system BMS, the auxiliary power supply, the UPS system, and the auxiliary distribution panel • The auxiliary power supply runs between the system power switch and the power transformer • Three voltage levels supply for auxiliary power • 400V AC for HVAC system • 230V AC for internal lights, sockets, ventilation • 24V DC secured power supply with backup UPS for BMS and battery CB • The 24V DC power supply from the 3 x 400V AC voltage level through a network device • Integrated UPS battery back-up, control, and operation of all control components in the case of short-term work power interruptions 	
Air-intake and air filters	<ul style="list-style-type: none"> • Outside air for cooling the systems and transformer 	

	<ul style="list-style-type: none"> Knitted filters to protect the components behind the air-intakes from coarse dust/ dirt and other large objects and to reduce the general dirt and dust load of the interior compartment 	
Climatization of the battery system	<ul style="list-style-type: none"> BESS Pack with full wall-integrated split-type compressor air-conditioning system No external air is blown into the clean room for cooling The air conditioning system consists of an external and internal unit Provides indoor temperature in the range of 18°C to 28°C for optimal operation of the battery system. Inner fan coils connected to air ducts and provide self-diagnosis in case of faults. 	
Warranty	<ul style="list-style-type: none"> With performance guarantee for period (Mention period). 	
Maintenance Contract	<ul style="list-style-type: none"> With offer for 5/ 10 years Annual Maintenance Contract. 	

Interested Manufacturers, suppliers and service providers are requested to provide the following information in their EOI:

A.

- i. The above specifications are indicative. Interested Manufacturers, suppliers and service providers are requested to forward their firm specifications along with the EOI.
- ii. The space required for installation of the Battery Energy Storage System (BESS) are to be indicated in the proposal (Overall dimension of Container should be limited to 20Ft. x 8Ft x 10Ft.)
- iii. The tentative time required for supply of the Battery Energy Storage System (BESS)
- iv. Scope of OIL's supply (if any) during commissioning of the Battery Energy Storage System (BESS).

B.

Interested Manufacturers, suppliers and service providers who are interested in supply are requested to send their Expression of Interest (EOI) to HoD-FE, Field Engineering Department of OIL on Email ID: FieldEngineering@oilindia.in / pkpegu@oilindia.in / shekhar_sonawal@oilindia.in / sandeepbhuyan@oilindia.in latest by 15.05.2023.

C.

For any queries the following officials may be contacted: Mr. P. K. Pegu (Mobile No. 9435038789); Mr. S R Sonowal, (Mobile No. 9435529692); Mr. S Bhuyan, (Mobile No. 9954484513)

XXXXXXXXXXXXXXXXXXXX