

SECTION 1: POWER SYSTEM

1.1 POWER PACK

1.1.1 TECHNICAL SPECIFICATIONS FOR POWER PACKS

1.1.1.1 ENGINE

Power Pack Engine: Technical Specification			Details / Confirmation to be filled by Vendor
1.1.1.1.1	No. of power packs per rig	Four (4) Nos of CAT 3512B or equivalent equipped with Engine OEM's DGB Kit on 4 runner Oil field skid with Acoustic Enclosure	
1.1.1.1.2	Rating Prime power (Engine)	at least 1200 BHP at 1000 rpm	
1.1.1.1.3	Fuel Type	Dual Fuel (Diesel + Natural Gas)	
1.1.1.1.4	Type of cooling	Water Radiator cooled. Radiator shall be independent motor driven and automated cleaning system.	
1.1.1.1.5	Starting	Air starter	
1.1.1.1.6	Air Inlet system	After cooled turbo charged with heavy duty filter.	
1.1.1.1.7	Exhaust System	Flexible Cone expander, Elbow, Spark arrestor, Muffler, outlet pipe, stack height as per CPCB norm.	
1.1.1.1.8	Flywheel & Flywheel Housing	Mounted with MPU compatible with controls.	
1.1.1.1.9	Engine Rotation	Standard (Counter-Clockwise as viewed from Flywheel end)	
1.1.1.1.10	Instrumentation	Engine Oil pressure, RPM, Water Temperature, Coolant level, Fuel pressure, Exhaust Temperature, Service meter etc. (Analog gauges with Digital Display). Engine parameters should further be integrated to Rig Instrumentation system.	
1.1.1.1.11	Safety protection	Low lube oil pressure, Engine Over speed, water/coolant high temperature& Low coolant level. Fire and Gas detection system with alarm and gas shut off. Local emergency stop switch with locking system/protected must be on the outside wall of acoustic enclosure.	
1.1.1.1.12	Engine Control	Integrated Control for Engine, Alternator and Duel fuel system.	
1.1.1.1.13	Gas conditioning skid suitable to reduce supply gas pressure from Gas Cascades (approx. 220 Kg/cm ²) to 10 Kg or suitable pressure including knock out drum and electrical type gas heater for gas blending shall be provided by the supplier		

1.1.2 SMART POWER MANAGEMENT SYSTEM

Smart Power Management System		Details / Confirmation to be filled by Vendor
1.1.2.1	Rig/Engine Power Management System shall be of Engine/Genset/ Drilling Control System OEM /OES make only, having an HMI screen at a suitable location (monitoring station) for monitoring and controls	
1.1.2.2	System shall be capable of controlling both engine and generator and shall seamlessly integrate with Rig AC VFD Power distribution and Control System and should be able to communicate data remotely to monitoring station	
1.1.2.3	System shall be capable of automatically starting the other standby engine(s) in the event of a warning/de-rate/shutdown in the running engine due to fault such as High coolant temp or low oil pressure etc. System shall be capable of logging the various events and decide number of engines to be run based on event. With the event based redundancy; system shall ensure that there will be no BLACKOUT during drilling operation and any switched off/idle engine shall start automatically.	
1.1.2.4	System shall continuously monitor the Rig Power Requirement and manage transient power demands of rig. Based on continuous feedback, the system shall optimize the fuel consumption. For Example, system shall automatically start the engine in case transient peak load is going more than pre-set limit or shut down/idle the engine in case load is below set limit for a particular pre-set time.	
1.1.2.5	System shall have ability to set/choose different power management settings/profile for various drilling operation like Drilling, Tripping, Casing, Fishing/Jarring etc. with ability to set reserve power for various drilling operation. Option of user customizable profile with min. selection of anticipated max. load, min. load, duration, reserve power etc shall be provided.	
1.1.2.6	System shall have ability to maximize gas substitution during all drilling operations in dual fuel mode and minimize HSD (Diesel) Consumption.	
1.1.2.10	System to provide manual override to driller/ operator to handle emergency situations during drilling operation	
1.1.2.11	All the data shall be real time recorded and System should be capable of integrating with Condition Monitoring System as mentioned in Cl. No. 11.5.1.	
1.1.2.12	The hardware required for Smart power management system should not be duplicated with respect to VFD House's generator control panel to avoid any operational conflict.	

1.1.3 COMPONENTS TO BE OFFERED WITH FOUR POWER PACK

Components To Be Offered With Four Power Pack		Details / Confirmation to be filled by Vendor
1.1.3.1	One (1) sets of standard tool kit for carrying out maintenance up to top overhaul of engine should be supplied in a conventional tool box with each rig. Bidder to submit the list of tools.	
1.1.3.2	In addition to above, the special tools & provisions as mentioned below should be supplied along with each Rig as per OEM's list and OEM's tool list must be submitted by all the bidders along with bid document	

1.1.3.3	ET tool with Laptop and Lifetime licence for monitoring Engine Parameters.ONGC would pay annual subscription (if any) after one year.	1 Nos.	
1.1.34	Engine OEM's battery Charger/ Charging Alternator & 24 V Battery for ECM for each unit	1 Set	
1.1.3.5	Rechargeable Emergency lamp	2 No/PP	
1.13.6	Single phase 3pin 6A power receptacle in each power pack near Alternator (For Laptop).	01/ PP	
1.1.3.7	Light Fitting for proper illumination	04/PP	
1.13.8	Double earthing with GI strip of suitable dimension		