

**PROCUREMENT OF 125 KVA DG SET FOR
SBILD MACHILIPATNAM**

S. No	Item Description	UOM	Qty	Unit Price	Total
1	Diesel Generator	Set	1		
	Supply, Installation, Testing and Commissioning of factory assembled 'Silent Type 125 KVA Diesel Generating set rated 415 volts at 1500 RPM, 0.85 lagging power factor, 50Hz, 3 phase system at NTP conditions suitable for standby power source on the existing foundation and consisting of the followings:				
(a)	Diesel Engine:				
	Diesel engine 4 stroke, multi cylinder, water cooled, electric start, of suitable BHP at 1500 RPM suitable for 125 KVA output of alternator at NTP conditions and conforming to BS 5514/ISO3046/BS 649/IS 10000/ISO 8528 Part-1, self-contained mechanical/electronic speed governor unit, capable of taking 10% over loading for one hour after 12 hour of continuous operation. The engine will be fitted complete with medium duty air filter system and all the required accessories. Make- Kirlosker/ Ashok Leyland/ Cummins/ Koelgreen / TATA				
(b)	Alternator:				
	Synchronous alternator of approved make rated at 125 KVA, 415 volts at 1500 RPM, 3 phase 50 Hz, AC supply with 0.8 lagging power factor at NTP conditions. The alternator shall be having SPDP (screen protected drip proof) enclosure, brush-less, continuous duty, self-excited and self-regulated through AVR conforming to IS: 4722/BS 2613 suitable for tropical conditions and with class-H insulation. +/-1.5% Voltage Regulation (max), IP23 Protection with class-H Insulation, Permanent lubricating bearing, permissible overload of 10% for one hour in 12 hours of operation.				
(c)	Manual / Standard Control Panel (MCP)				
	Engine mounted Instrument Panel fitted inside Acoustic enclosure with lamp indicators, fault alarm hooters and having digital display of minimum following parameters: <ol style="list-style-type: none"> 1. Start-stop switch with key 2. Water/Coolant temperature indication 3. Lubrication oil pressure indication 4. Lubrication oil temperature indication 5. Battery charging indication 6. RPM indication 7. Over speed indication trip 8. Low lube Oil trip indication 9. Engine Hours indication 10. Energy meter reading 11. Diesel level indicator 				

	12. Voltage, Current, Frequency & Power factor				
(d)	Base Frame				
	Both the engine and alternator shall be coupled and mounted on suitable base frame made of MS channel with necessary reinforcement which shall be installed on existing cement concrete foundation and including supplying & fixing of suitable vibration isolation arrangement as per recommendations of manufacturer.				
(e)	Exhaust System:				
	Dry exhaust manifold with Residential grade exhaust silencer and catalytic converter including all supporting structure, Turbocharger, Companion flanges for silencer & bellow with adequate support structure & necessary thermal insulation with cladding of exhaust pipe as per relevant latest Indian Standard.				
(f)	Starting System				
	12V DC starting system comprising of starter motors, voltage regulator and arrangement for initial excitation complete with suitable no's of batteries (180 AH SMF lead acid type) as required as per specifications.				
(g)	Acoustic enclosure				
	Acoustic and weather proof enclosure with arrangement for fresh air intake for cooling of the engine & alternator, extraction, discharging hot air in to the atmosphere as per specifications.				
(h)	Fuel System				
	Daily service Fuel tank of 300 litres fabricated from 14SWG MS sheet metal built inside base frame with engine driven fuel pump and complete system with drain valve, air vent, inlet & outlet connection and fuel level gauge				
2	Earthing				
A	Neutral Earth pit	No's	2		
(a)	Supply, installation, testing and commissioning of Copper Plate Earthing station complete using 600 x 600 x 3 mm copper plate including excavation, back filling with sand+charcoal+salt, construction of inspection chamber, chamber cover, 50mm dia GI pipe 3mts long with funnel for watering, GI clamp with 12mm nut & bolts and all its accessories as per IS 3043 with latest amendments.				
(b)	Supply and laying of 25x3 mm GI flat with adequate protection, from the base terminal to GI clamp inside the pit including termination at both ends	mtr	15		
B	Body Earth pit	No's	2		
(a)	Supply, installation, testing and commissioning of GI Plate Earthing station complete using 600 x 600 x 3 mm GI plate including excavation, back filling with sand+charcoal+salt, construction of				

	inspection chamber, chamber cover, 50mm dia GI pipe 3mts long with funnel for watering, GI clamp with 12mm nut & bolts and all its accessories as per IS 3043 with latest amendments.				
(b)	Supply and laying of 25x3 mm GI flat with adequate protection, from the base terminal to GI clamp inside the pit including termination at both ends	mtr	15		
3	AMF Panel	No's	1		
	Supplying, installing, testing and commissioning of Fabricated Automatic mains failure control panel including auto by-pass panel, suitable for 125 KVA silent type DG Set complete with relays, timers, set of CT's for metering & protection, Energy analyzer to frequency, power factor, KWH, KVARH & provision for overload trip, short circuit trip, restricted earth fault, under frequency trip and control cabling from AMF panel to diesel engine and elsewhere if required, all complete and inter locking including the following:				
	(i) 1 No.250 Amps 4P MCCB 36KA ($I_{cs} = 100\% I_{cu}$) Make- L&T/ SEIL/ ABB with adjustable trip				
	(ii) 2 Nos.200-amp Contactor				
	(iii) Auto/ Manual/ Test/ Off Selector switch				
	(iv) 2 Nos. over voltage relay, 2 Nos. reverse power relay and 2 Nos. under voltage relay.				
	(v) 1 Set of 3 Nos. current transformers.				
	(vi) Energy analyzer unit to indicate current, voltage, frequency, power factor and KWH				
	(vii) Indicating lamps for load on mains and load on set				
	(viii) Suitable MCB for instruments & control circuits				
	(ix) Battery charger, complete with transformer / rectifier DC voltmeter and ammeter selector switch for trickle off and float/ boost and current adjustment				
	(x) Main supply failure monitor				
	(xi) Supply failure timer				
	(xii) Restoration timer				
	(xiii) Control unit with three impulse automatic engines start / stop and failure to start lockout.				
	(xiv) Impulse counter with locking and reset facility				
	(xv) ON/ OFF / Control circuit switch with indicator				
	(xvi) Audio/ Video annunciation for				
	<ul style="list-style-type: none"> a. Low lubricating oil pressure b. Engine over speed c. Engine fails to start d. Full load/ maximum load warning e. High water temperature 				

