

## Purchase of 550 KVA Standby & 500 KVA Prime Rating Generator Sheikh Zayed Medical College/ Hospital, Rahim Yar Khan

Description		IMAN Group	M/s Orient Energy System	M/s MIA Energy (Pvt.) Ltd	M/s S.M Jaffer & Co.	Gresham's Eastern Pvt. Ltd	KAN Engineering & Services	Jaffer Brothers (Pvt.) Ltd	GM trading corporation	
1	Engine	Type & No.	2506A-E15TAG2	C550 D5e	KGVP500	P550-1	P222Le	D 2840 LE20X	GP 560A/P(open	2506A-E15TAG2.
		Enigne	Perkins	Cummins	VOLVO PENTA	Perkins.	DOOSAN	MAN	Perkins	Perkins
		Make	UK	UK/USA	Germany.	UK	KOREA	Germany	UK	UK
2	Alternator	Type & No.								
		Enigne	Stamford/UK	Stamford/UK	Stamford/UK	FG Wilson (Leroy somer)	MeccAlte	MeccAlte	Macc Alte	Stamford
		Make	UK	UK	UK	Ireland	UK	UK	Italy	UK.
3	Assambled	Local or forgine	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
4	Design	4 Cycle in line, Turbo Charged after Cooled	Yes	Yes	Yes	Yes	Yes (12 Cylinder)	Yes (10 Cylinder)	Yes	Yes
5	Battery Charging Alternator	35 Amp	Yes (70 Amp)	Yes	Yes (80 Amp)	Yes (70 Amp)	Yes (45 Amp)	Yes	Yes (70 Amp)	Yes (70 Amp)
6	Starting Voltage	24 Volt, Negative Ground	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	Fuel System	Direct Injection	Yes	Yes	Yes	Yes	No (Bosech in line, P Type indirecte)	No (Bosech in line)	Yes	Yes
8	Fuel Filter	Spin on fuel filters with water separator	Not mentioned	Yes	Yes	Yes	No	No	Yes	Not mentioned
9	Air Cleaner Type	Dry replaceable element with restriction indicator	No	Yes	Yes	No	No	No	No	No
10	Lube oil filter type	Fleet guard dual venture spin on, combination full flow and bypass	Not mentioned	Yes	Yes	Yes	Fill Flow Cartridge Type	Not mentioned	Yes	Not mentioned

Description		IMAN Group	M/s Orient Energy System	M/s MIA Energy (Pvt.) Ltd	M/s S.M Jaffer & Co.	Gresham's Eastern Pvt. Ltd	KAN Engineering & Services	Jaffer Brothers (Pvt.) Ltd	GM trading corporation	
11	Standard cooling system	122°F (50°C) ambient radiator	Yes	Yes	Yes 122°F (55°C)	Yes	Max:103C (40°C) on 50°C its output will be max. 470KVA	Not mentioned	Yes	Not mentioned
12	Alternator	Type & No.								
		Enigne	Stamford/UK	Stamford/UK	Stamford/UK	FG Wilson (Leroy somer)	MeccAlte	MeccAlte	Macc Alte	Stamford
		Make	UK	UK	UK	Irland	UK	UK	Italy	UK.
13	Design	Brushless, 4 Pole, Revolving Field	Yes	Yes	Yes	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
14	Stator	2/3 Pitch	Yes	Yes	Yes	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
15	Rotor	Single Bearing, Flexible Disc	Yes	Yes	Yes	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
16	Insulation System	Class H	Yes	Yes	Yes	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
17	Standard Temp. Rise	125 C° Standby	Not Mentioned	Yes 125-163 C°	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
18	Exciter Type	PMG (Permanent Magnet Generator)	Yes	Yes	Yes	Shunt	No PMG Kit (Necessary for 3 phase sensing)	No PMG Kit (Necessary for 3 phase sensing)	No PMG Kit (Necessary for 3 phase sensing)	No PMG Kit (Necessary for 3 phase sensing)
19	Phase Rotation	A(U), B(V), C(W)	Not Mentioned	Yes	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
20	Alternator Cooling	Direct Drive Centrifugal Blower Fan	Yes	Yes	Yes	Centrifugal	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
21	AC Waveform Total Harmonic Distortion	No Load < 1.5% non-distorting balance linear load < 5%	Yes	Yes	Yes	Yes (2%)	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned

Description	IMAN Group	M/s Orient Energy System	M/s MIA Energy (Pvt.) Ltd	M/s S.M Jaffer & Co.	Gresham's Eastern Pvt. Ltd	KAN Engineering & Services	Jaffer Brothers (Pvt.) Ltd	GM trading corporation
-------------	------------	--------------------------	---------------------------	----------------------	----------------------------	----------------------------	----------------------------	------------------------

22	Salient Features	Display Control Graphical	Yes	Yes	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	
		Anti-Freeze mixture	Not Mentioned	Not Mentioned	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
		Exciter/voltage Regulator	Yes	Yes	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
		Electronic Governor	Yes	Yes	Yes	Yes	Yes	Yes	Not Mentioned	Yes	Yes
		Engine Air Cleaner Normal Duty	Not Mentioned	Not Mentioned	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
		Industrial muffler (supplier loose)	Not Mentioned	Yes	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
		Exhaust Flexible (supplier loose)	Not Mentioned	Yes	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
		First Oil filled	Not Mentioned	Yes	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
		First coolant filled	Not Mentioned	Yes	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
		Engine sump oil drain tap	NO (It is Oil drain Pump) In this case not need to open the Bolt of Generator to drain engine oil. Because if bolt will break during opening or tightening or remain losing it will may cause big Hazard	Yes	Yes	NO (It is Oil drain Pump) In this case not need to open the Bolt of Generator to drain engine oil. Because if bolt will break during opening or tightening or remain losing it will may cause big Hazard	NO (It is Oil drain Pump) In this case not need to open the Bolt of Generator to drain engine oil. Because if bolt will break during opening or tightening or remain losing it will may cause big Hazard	NO (It is Oil drain Pump) In this case not need to open the Bolt of Generator to drain engine oil. Because if bolt will break during opening or tightening or remain losing it will may cause big Hazard	NO (It is Oil drain Pump) In this case not need to open the Bolt of Generator to drain engine oil. Because if bolt will break during opening or tightening or remain losing it will may cause big Hazard	NO (It is Oil drain Pump) In this case not need to open the Bolt of Generator to drain engine oil. Because if bolt will break during opening or tightening or remain losing it will may cause big Hazard	NO (It is Oil drain Pump) In this case not need to open the Bolt of Generator to drain engine oil. Because if bolt will break during opening or tightening or remain losing it will may cause big Hazard
		Earth leads	Not Mentioned	Not Mentioned	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
		Switch key, control operating	Not Mentioned	Not Mentioned	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
Set mounted lead acid imported	Not Mentioned	Not Mentioned	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned		
Certified test record	Yes	Not Mentioned	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned		

23	Packaged Radiator	1500RPM, 400Volts, 0.8P.F, 50 HZ, Packaged radiator	Yes	Yes	Yes	Not Mentioned	Yes	Yes	Yes	Not Mentioned
	Sound Proof Canopy	Comprehensive canopy for opening of doors from left to right and front to back. Noise Level up to 70db	Yes	Yes (80-75 db at 5 mtr)	Yes	Yes (70 db at 7 mtr)	Yes (75 db at 7 mtr)	Not Mentioned	Yes (Capacity not mentioned)	Yes (Capacity not mentioned)

Description		IMAN Group	M/s Orient Energy System	M/s MIA Energy (Pvt.) Ltd	M/s S.M Jaffer & Co.	Gresham's Eastern Pvt. Ltd	KAN Engineering & Services	Jaffer Brothers (Pvt.) Ltd	GM trading corporation	
24	Generator Set Specifications	Voltage Regulation No Load to full Load $\pm 5\%$	Yes	$\pm 1\%$	$\pm 1\%$	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
		Random Voltage variation	Not Mentioned	$\pm 1\%$	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
		Frequency regulation	Not Mentioned	Yes	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
		Random Frequency variation	Not Mentioned	Yes	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
25	Control Switch-Run/Off/On	Off mode-the generator set is shut down and cannot be started.	Yes	Yes	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
		Run mode the generator set will execute its sequence.	Not Mentioned	Yes	Yes	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned	Not Mentioned
		Auto mode the generator set can be started with a start signal from a remote device.	Yes	Yes	Yes	Not Mentioned	Yes	Yes	Yes	Yes
26	LED indicating Lamps	Low oil pressure warning	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		High engine temperature warning	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		Low oil pressure shutdown	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		Over speed shutdown	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		Fail to start	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
27	Earthing 3 Nos of Earthing are required.	Earth leakage resistance must be less than 0.5. the firm will responsible for the checking and verification of earth resistance <0.5 through earth tester	Yes	Yes	Yes	100 Ft Boring	Yes	Yes	Not Mentioned	Yes
28	Foundation Pad Capable of bearing load of generator & vibration as well	The firm will responsible for the construction of foundation pad with heavy concrete material.	Yes	Yes	Yes	R.C.C Type	Yes	Yes	Not Mentioned	Yes

Description		IMAN Group	M/s Orient Energy System	M/s MIA Energy (Pvt.) Ltd	M/s S.M Jaffer & Co.	Gresham's Eastern Pvt. Ltd	KAN Engineering & Services	Jaffer Brothers (Pvt.) Ltd	GM trading corporation
29	Transportation loading/unloading (The project is on turnkey basis.) Transportation loading/unloading is responsibility of firm. The firm will responsible for complete installation.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
30	Tool Kit 2 Nos of 170 pieces tool kit must be provided separately	Pices not mentioned & Quantity is 01	Yes Pices not mentioned	Yes	Yes Pices not mentioned	Yes Pices not mentioned	Yes Pices not mentioned	Not mentioned	Yes But 30 Pices 02 Sets
31	Consumeables The firm will provide 3 Nos. consumable sets of consumable parts	Not Mentioned	Yes	Yes	Yes	Yes (01 Set)	Yes	Not mentioned	Yes
32	Load Test The Firm will responsible for load testing through load bank at his on expense at site	Yes	Yes	Yes	Yes	Not on Site	Yes	Not mentioned	Yes
33	Warranty 3 year service warranty and 2 years comprehensive warranty	Yes	As per tender Documents	Yes	05 Years (5000 hours)	Not Mentioned	Yes	02 Years (2000 hours)	03 Years
34	Fuel Consumption 100% Load	100 Ltr	103 Ltr	95.45 Ltr	100 Ltr	130 Ltr	108.1 Ltr	100 Ltr	100 Ltr

*[Handwritten signature]*

*[Handwritten signature]*

*[Handwritten signature]*

*[Handwritten signature]*

*[Handwritten signature]*