

ANNEXURE 6

DELIVERY OF GENSETS AND SERVICES FOR THE EPC OF THE 10.20 MWH IGCC POWER PLANT

DELIVERY OF GENSETS AND SERVICES

PROCUREMENT OF TECHNOLOGIES AND EQUIPMENT			Origin	Qty	Unit Price [EUR]	Total Price [EUR]
S/N		Description				
1	GENSET					3,072,783.00
1.1	Base engine	Base Eng. TCG 2032/V12, 50Hz, Output of 3.333 MWh	Czechia/Slovakia	3		
1.2	Base alternator	Standard alternator n = 1,000 / min	Czechia/Slovakia	3		
1.3	Base genset	Base genset 50Hz, Marelli	Czechia/Slovakia	3		
1.4	Preservation	Standard conservation (24 months)	Czechia/Slovakia	3		
1.5	Mixture piping	Gas mixture pipe	Czechia/Slovakia	3		
1.6	Exhaust turbo charger	Exhaust turbo charger	Czechia/Slovakia	3		
1.7	Lube oil system	Lube oil system for IFE dehumidification	Czechia/Slovakia	3		
1.8	Combustion air filter	front mounted air filter without preheating	Czechia/Slovakia	3		
1.9	Combustion air preheat	without air preheating	Czechia/Slovakia	3		
1.10	Integrated Front End	IFE dehumidification	Czechia/Slovakia	3		
1.11	Paint job	Primer, top coat & spare paint: RAL5010, gentian blue	Czechia/Slovakia	3		
1.12	Name plate	Name plate in English	Czechia/Slovakia	3		
1.13	Exhaust pressure monitor	Exhaust back pressure sensor (2 pieces)	Czechia/Slovakia	3		
1.14	Tools	Standard tool set, base scope w & w/o barring motor	Czechia/Slovakia	3		
1.15	Spare parts for commissioning	Spare parts for commissioning	Czechia/Slovakia	3		
2	TEM (Total Electronic Managmt)					211,225.30
2.1	Base system	Base system (ST32-F)	Czechia/Slovakia	3		

2.2	Frequently chosen options TEM	Radiator controller (TKS1)	Czechia/Slovakia	3		
2.3		Cabin air regulator (RL1)	Czechia/Slovakia	3		
2.4		Modbus RTU (MRTU)	Czechia/Slovakia	3		
2.5		Handling of main failure (NA)	Czechia/Slovakia	3		
2.6		Demand of External Staring Preparations (AES)	Czechia/Slovakia	3		
2.7	Special option TEM	4 Parametrizable counters (4ZW)	Czechia/Slovakia	3		
2.8		2 Parametrizable measurements (2MW)	Czechia/Slovakia	3		
2.9		1 Parametrizable of control circuit (1PR)	Czechia/Slovakia	3		
2.10		Acknowledgment of external monitoring (QEÜ)	Czechia/Slovakia	3		
2.11	Visualization TEM	Operating terminal (BRT)	Czechia/Slovakia	3		
2.12	TEM Modern, IAE	Modern system (eServ IP)	Czechia/Slovakia	1		
2.13	TEM control cab., packg., cables	Door hinge of switch cabinet on left side (AEOL	Czechia/Slovakia	3		
2.14		Console (KBW)	Czechia/Slovakia	3		
2.15		TEM connecting cable set TCG 2032 8M (K32ARM)	Czechia/Slovakia	3		
2.16		Documentation for TCG 2032 (English) (DP32)	Czechia/Slovakia	1		
2.17		Documentation in other languages (DP32S)	Czechia/Slovakia	1		
3	PLANT COMPONENTS					136,483.70
3.1	Compressed air bottle	Compressed air bottle, 2000 liter, horizontal	Czechia/Slovakia	3		
3.2	Compressor	Compressor 50m ³ /h HATLAPA typ L50, incl. Spare parts	Czechia/Slovakia	3		
3.3	Zero-pressure gas control train	Gas train DN 100/100/125, with leakage-monitoring (RMG)	Czechia/Slovakia	3		
3.4	Inlet fuel pressure regulator	Pre pressure gas train DN50/50/100	Czechia/Slovakia	3		
3.5	Lube oil heat exchanger engine cooling circuit	Counter flange lube oil heat exchanger DN 100, cpl. Steel/Stainless steel	Czechia/Slovakia	3		
3.6		Lube oil heat exchanger	Czechia/Slovakia	3		
3.7	Sensors intercooling circuit	Counter flange DN 80	Czechia/Slovakia	9		
3.8		Safety valve 3 bar	Czechia/Slovakia	3		
3.9		Temperature sensor PT 100	Czechia/Slovakia	3		
3.10		Water low level switch	Czechia/Slovakia	3		
3.11		Differential pressure switch	Czechia/Slovakia	3		
3.12		Ventilation valve	Czechia/Slovakia	3		
3.13		Three-way valve DN 80/ PN16, 230 V	Czechia/Slovakia	3		

3.14	Sensors engine cooling circuit	Counter flange DN 80	Czechia/Slovakia	9		
3.15		Safety valve 3 bar	Czechia/Slovakia	3		
3.17		Temperature sensor PT 100	Czechia/Slovakia	3		
3.18		Water low level switch	Czechia/Slovakia	3		
3.19		Differential pressure switch	Czechia/Slovakia	3		
3.20		Ventilation valve	Czechia/Slovakia	3		
3.21		Three-way valve DN 80/ PN16, 230 V	Czechia/Slovakia	3		
3.22	Cooling water pumps intercooling circuit	Counter flange DN 65	Czechia/Slovakia	6		
3.23		Coolant pump DN 65 Etaline 65-160/752.2	Czechia/Slovakia	3		
3.24	Cooling water pumps engine cooling circuit	Counter flange DN 80	Czechia/Slovakia	6		
3.25		Counter flange set DN 80	Czechia/Slovakia	3		
3.26		Throttle valve DN 80	Czechia/Slovakia	3		
3.27		Coolant pump DN 80 Etaline 80-160/1502	Czechia/Slovakia	3		
3.28	Expansion vessels intercooling circuit	Expansion vessel 250l	Czechia/Slovakia	3		
3.29		Lock-off valve for expansion tank	Czechia/Slovakia	3		
3.30		Expansion tank manometer	Czechia/Slovakia	3		
3.31		Manometer cut-off valve	Czechia/Slovakia	3		
3.32	Expansion vessels engine cooling circuit	Expansion vessel 500l	Czechia/Slovakia	3		
3.33		Lock-off valve for expansion tank	Czechia/Slovakia	3		
3.34		Expansion tank manometer	Czechia/Slovakia	3		
3.35		Manometer cut-off valve	Czechia/Slovakia	3		
4	EXHAUST SYSTEM					136,483.70
4.1	Exhaust gas silencer	Exhaust gas counter flange complete, steel DN 800	Czechia/Slovakia	6		
4.2		Exhaust silencer, heat resistant steel, axial-radial, DN 800, 60 dB(A) in 10 m	Czechia/Slovakia	3		
4.3	Catalytic converter	Counter flange complete for stainless steel DN 500	Czechia/Slovakia	12		
4.4		Catalytic converter with cone and flange DN 500	Czechia/Slovakia	6		
4.5	Sensors exhaust gas system	Thermocouple NiCr-Ni after catalyst	Czechia/Slovakia	6		

5	LUBE OIL SYSTEM					41,177.50
5.1	Lube oil pump	Hose pipe (between tank & pump) Connections 1"/1"	Czechia/Slovakia	2		
5.2		Fresh lube oil pump, 68 ltr./min	Czechia/Slovakia	2		
5.3	Lube oil reservoir	Receipt unit	Czechia/Slovakia	2		
5.4		Horn	Czechia/Slovakia	2		
5.5		Fresh oil tank KTE 9000 double walled	Czechia/Slovakia	2		
5.6		Overfill sensor + Level limiter	Czechia/Slovakia	2		
5.7	Ventilation sensors	Temperature sensor PT100	Czechia/Slovakia	3		
6	SWITCHGEAR AUX. PANEL					191,069.10
6.1	Switchgear auxiliary panel	Auxiliary panel switchgear	Czechia/Slovakia	3		
6.2		Common Control Panel (ZAS)	Czechia/Slovakia	1		
7	SERVICES					70,080.00
7.1	Final inspection	engine test without customer participation	Czechia/Slovakia	3		
7.2	Packing	Packing suitable for overland transport for genset: foil cover	Czechia/Slovakia	3		
7.3	Packing plant components	packing plant components	Czechia/Slovakia	3		
7.4	Standard documentation	Standard documentation (2 copies) incl. preparation	Czechia/Slovakia	3		
7.5	Additional documentation	Further set of standard documentation	Czechia/Slovakia	3		
8	COMMISSIONING					137,697.00
8.1	Switchgear commissioning medium-voltage	Commissioning Medium-voltage	Czechia/Slovakia	25		
8.2		Travel costs & overnight stay comm. switch board	Czechia/Slovakia	1		
8.3	Services - Plant commissioning	Man day(s) commissioning (local)	Czechia/Slovakia	35		
8.4	Additional commiss. services	Travel costs and overnight stay commissioning genset	Czechia/Slovakia	1		
8.5		Single shift test operation (man days)	Czechia/Slovakia	4		
8.6	Medium-voltage alternator commissioning	Man day(s) commissioning alternator (local)	Czechia/Slovakia	15		
8.7	Additional medium-voltage alternator commissioning	Travel costs and overnight stay commissioning alternator	Czechia/Slovakia	1		
9	TOTAL - DELIVERY OF GENSET AND SERVICES		Czechia/Slovakia			3,996,999.30