

1.) Cat 3516 genset

YOM: 1994

Make: Caterpillar

Model: 3516 moduel

Hours: 1500 since new

KW: 1800

Hz: 50

Serial #: 25Z039xxx

Description: Cat 3516 genset moduel (No Trailer)

1500 hours since new SR4

Gen End 2000kva / 400v / 50Hz / 1500rpm

Sound attenuated 40'container

500 gal. double wall fuel tank.

Silencer is available.

Price: 265,000 USD

Pictures on request

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2.) 14 MW Powerplant in India

	<u>ENGINE : 7275</u>	<u>ENGINE : 4447</u>	<u>ENGINE : 4448</u>	<u>ENGINE</u>
Make	WARTSILA	WARTSILA	WARTSILA	PKPL
TYPE	18 V 32 E	9R32D	9R32D	9L25/30
SPEC	173155	173155	173155	Sr. No.: KDE1002
K.W	6217		2700	
R / S	12.5	12.5	12.5	
RPM	750	750	750	1000
	ALTERNATOR	ALTERNATOR	ALTERNATOR	ALTERNATOR
MAKE	ABB	RELIANCE	RELIANCE	JYOTI
Sr.N.O	4551117 / 1995	Nr - 181531xp	Nr - 181532xp	7357
TYPE	HSG 900XS8	SDGB 80058	SDGB 80058	SPDP
RATING	7500 KVA	4065 KVA	4065 KVA	2325
DUTY	S1	S1	S1	S1
R.P.M.	750 R.P.M	750 RPM	750 RPM	1000
VOLTAGE	6600	6600	6600	11000
CURRENT	656 A	356 A	356 A	122 A
INSULATION CLASS	F	F	F	F
FREQUENCY	50 HZ	50 HZ	50 HZ	50 HZ
	BOOSTER UNIT	BOOSTER UNIT	BOOSTER UNIT	Not Applicable
TYPE	FEEDERBOOSTER	AMB-C 5000 EE	FEEDRBOOSTER	AMB /PP 9000 EE
H.F.O SEPARATOR		H.F.O SEPARATOR	H.F.O SEPARATOR	Not Applicable
TYPE	MOPX309TGT24	MOPX309TGT24	MOPX309TGT24	
L.O SEPARATOR		L.O SEPARATOR	L.O SEPARATOR	
TYPE		LOPX707SFD-34	MAB205	MAB205
DATEofCOMM	18- 06-1996	12-06-1989	16-04-1989	18-03-1992
RUNNING HOURS	42837	61334	66654	12700
Condition	Running	RUNNING	RUNNING	Brakedown Condition
Fuel	L.S.H.S.	L.S.H.S.	L.S.H.S.	H.S.D.

Price: 1 Million USD FOB nearest SEA-port of current location in India.

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PF : 0.8

Condition : Brand New

Price : US\$ 116,500 Only

4) 2 x 50 MVA POWER STATION

A unique opportunity has arisen to purchase the equipment in a 100 MVA Power Station, which was installed in 1974/75 BUT HAS NEVER OPERATED COMMERCIALY.

The plant comprises 2 x 50 MVA Brown Boveri condensing steam turbines and 2 x 180t/h Sulzer high pressure water tube boilers, which were designed to burn heavy fuel oil and blast furnace gas.

The power plant was originally built to utilise blast furnace gas at an integrated steelworks.

During commissioning of the new power station, the steelworks decided to close the blast furnace plant, which made the power generation equipment redundant.

Since that time, the power plant has stood idle and the equipment is now for sale.

The owner is willing to sell all the following equipment within the power station as a single lot, on the basis of "as is, where is".

Number of Units:	2 steam turbines + 2 boilers
Location:	Europe
Year Commissioned:	1974/75
Service Hours:	Plant has never operated commercially
Condition:	Plant unused commercially
Status:	Installed on foundations within Power Station building

DOCUMENTATION

Operation and Maintenance Manuals available.

STEAM TURBINES

Number: 2

Manufacturer: BBC-Brown Boveri

Type: Condensing steam turbine

Rated Power: 50,000 KVA @ 0.8 P.F. (40MW)

Speed: 3000 RPM

Inlet Pressure: 31 barg

Inlet Temperature: 400C

Inlet Flow @ MCR: 180t/h

Condenser: Seawater Cooled

ALTERNATORS

Manufacturer:	BBC
Capacity:	50,000 kVA
Power Factor:	0.80
Active Power:	40,000kW
Rated Voltage:	10.5kV
Frequency:	50 HZ
Speed:	3000 RPM

BOILERS

Number:	Two
Manufacturer:	Sulzer Fuels:
- HFO or mixed Blast Furnace Gas / HFO Steam Conditions:	
Design Pressure	39.2 Barg
Pressure at Super Heater Outlet	31.4 Barg
Temperature at Super Heater Outlet	410 C Output:
- Flow at MCR with 100% HFO or 80% BFG and 20% HFO	
	190t/h Efficiency:
- 100% HFO at MCR	92%
- 80% BFG / 20% HFO at MCR	86.5%

BALANCE OF PLANT

BOP available to purchaser

Price: wait for a bid

5.) Two (2) Frame 6 units of Gas Turbines

French made Alstom PG6461B combined cycle

5135 rpm, Crude Oil and Light Diesel Fuel

Rated Power Output at ISO condition : 34.55 MW

Combined Cycle Output Power : 34.10 MW
Turbine Efficiency : 30.56%

Gas Turbine Generator

Model : T190-240
Output Voltage : 11 KV
Rated Current : 2381 A
Closed Circulation Air Cooler with Water Cooler
Insulation : Class F

Brushless Exciter

Model : TKJ70-10
Rated Power : 123.7 kW
Rated Current : 507 A
Generator Control consist of manual & automatic operation

Steam Turbine

Make : Alsthom Rateau Etablissement
Model : TC633FV140
3000 rpm
16 stages diffusion
Rated in flow : 121.9 TPH
Rated Pressure : 36bar
Rated Pressure at Cooler : 0.068bar
Generator model : T190-240
Rated Output : 34.95 MW
Installed in April, 1988
Closed air cooled Brushless Exciter

(2) x Waste Heat Boilers

Make : French Alsthom Setn
Vertical 2 pressure forced Circulating Boiler
Rated Steam Generation : 60.95 TPH
Steam Pressure : 39.5 bar
Overheat Release : 38 bar
Overheat Steam temperature : 487 degrees C
Gas Turbine Exhaust temperature : 528 degrees C
Boiler Exhaust temperature : 156 degrees C
Made in 1987, Installed in April, 1988

3 sets of Alpha Laval Crude Oil 2 stage Centrifugal self-cleaning Treatment

Model : OSB 35-02-566 EX40
Rated Treatment Capacity : 10 cbm/hr (each set)

Auxillary Fuel Treatment System, including:

Small Boiler Water Heater
Emulsifier Additive System
Water Pressure Booster
Air Compressor
Waste Water Treatment System
Crude Oil Pumping System
Diesel Pumping System
Fire Fighting System

Water Treatment System:

French made Sanilo Brand
Treatment capacity : 10 TPH, max 15 TPH
2 sets of De-ionizer with 2 sets of 100 cbm demineralized Water Tank
Controlled by TSX-47 automatic Control
Boiler Water Treatment by phosphorus salt
On-line Analysis Ammonia Treatment

Main Transformer

Alsthom made
Model : TTH
Serial no : 51-134/001/002/003
3 phase, 50 Hz

Connection : YNd11
 Rated Capacity : 50000 kVA
 Rated Voltage : 121+-2x5%/11 kV
 Rated Current : 239/2625 A
 Max. Operating Voltage : 123/17.5 kV
 Oil filled 2 Coils
 Natural Cooling
 5 sets of Voltage Adjustment Connections

Control System

Alstom made 8088 CPU Control System
 First stage full automatic Management Control for auto start-up and shut down of System with Control
 Second stage sub-system Control including:
 Boiler Control (FRE001AR)
 Boiler Safety (FSC001AR)
 Steam Generator Control (2GRE001AR)
 Steam Generator Safety (3GRE001AR)
 Logic Sample (9KCZ001AR)
 Module Sample (9KBS001AR)
 Communication (3KCZ001AR)
 Third stage manual Control (Component Control, Direct Control at Valves and Electric System)
 Boiler Control System using PEM-51M, GEN-51, Network
 Water Treatment and Ash Blower using PLC Control

Gas Turbine Controls : Mark 4

Price : 10.75 Million US\$ as is where is, Europe

6) LM 2500 – Complete CCGT Gas Turbine Power Plant

Gas Turbine Model : LM 2500 PE
 Power Turbine Type : GE Six Pack
 Manufacturer : Stewart & Stevenson
 Commercial Operation Date : March 1991
 Total Hours since New : 55056 Fired Hours, 4340 Starts
 Time since Last Hot Section Overhaul : 683 Hours (HS carried out by MTU Maintenance GmbH)
 ISO Rating : : **23.6 MW**, 27.765 MVA
 Heat Rate : 7085 Btu/hpr, 10,020 kJ/kWh
 Control System Manufacturer : GE Micronet (installed January 2005)
 Generator Manufacturer : Brush Electrical Machines Ltd, USA
 Generator Type : Brushless Excitation, 11 kV, 50 Hz
 Auxiliary Transformer : 11 kV / 400 V, 1000 kVA, 3 Phase
 Fuel Type : Dual Fuel (Diesel and Gas)
 Year of Manufacture : 1991
 Starting System : Hydraulic
 Water Injection : Installed water injection NOx control system
 Current Status : Unit is still in operation so test runs can be carried out.
 Misc. : The LM 2500 is in combined cycle mode with the HRSG producing steam for a steam turbine.
 The steam turbine provides an additional 6.8 MW for each unit.
 Generator tests were carried out at 3600 RPM, 13800V, 60 Hz and can be modified back to 60 Hz operation if required.
 The complete Power Plant is available to be sold including all equipment which is required for electrical generation, from Air Inlet Filters to Transformers.
 Also available is the HRSG and Water Injection Equipment.
 Lube oil consumption : Low. Only 2 to 3 barrel for 1 year.(55 gal/barrel).
 Fuel Consumption (Diesel) : 9 tons/hr for the diesel.(10300kcal/kg)
 Fuel Consumption (Gas) : 12000 m3/hr for the NG. (8789 kcal/m3)
 Mass Flow of Steam : 30 to 35 tonnes per hour

Price : 4.6 US\$ Million, as is where is, Far-East

7.) Gas Turbine, LM2500

Complete unit to standard LM2500 OEM Specification
 20.5 MW Output at 50 Hz, 11.5 kV, under ISO

From intake to exhaust with new state-of-the-art control system, installed, test run at a certified test cell, with upgraded hot gas path section (coated) for higher first stage gas temperature (upgraded to LM2500PE output), available for inspection and receipt within three to four (3-4) months of shop start date

Options:

Twin (2) fuel capability (by fuel nozzle exchange by hand) at additional cost.
Dual fuel (allowing fuel type change during operation), water injection, DI/DM water system, stainless steel intake and exhaust upgrades, GE Mark V control upgrades, heat recovery steam generator (HRSG), HRSG Duct burner upgrade, SCR, Co-generation or combined-cycle upgrades with or without steam turbine-generator, but with full systems with condenser and cooling tower are not included, but can be quoted later, as desired.

- A standard industry one-year / 8,000 operating hours / 500 cycles, whichever comes first, warranty from installation/commissioning date is included with the purchase price of this unit, if installed/commissioned within six (6) months of buyer receipt.

Any item(s) not specifically priced/covered in this quotation will can be added and priced as an extra item subject to PGSI time & material rates.

- Again, the unit offered is new/never used and will be configured to 50 Hz operation under liquid fuel with 11.5 kV output voltage.

- The original generator was manufactured by Brush under GE specification, but was de-rated for 18.75 MW at 1000 ft elevation with 59 degree F air temperature at 95% humidity.

- We will rewind, reconfigure and/or replace the existing generator, as needed, to bring this unit up to standard OEM model LM2500PE, 20.5 MW specification

- This unit is presently stored in the UAE.

Price : 6.6 Million US\$ as is where is, UAE

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8.) Two (2) units of Gas Turbine, LM2500 PE

22.5 MW, 13.8 kV, 60 Hz, SKID MOUNTED Gas Turbine Generator Set

- Rating: : 22.719 MW

- Fuel: : Natural Gas / Distillate Fuel (D2) to GE specifications

- Cycle: : 50/60 Hz, PLC controlled.

- Guaranteed kW Output at the Generator Terminal and corresponding fuel consumption rate for a set of site conditions mutually agreed upon by both parties.

Each unit package has:

One (1) LM2500 PE Gas Turbine Engine equipped with Inlet Bellmouth and Screen

One (1) GE Generator, 26471 kVA ISO rated, 13.8 kV, 60 Hz

Air cooled with GE Excitation System and Voltage Regulator.

Neutral and Line Cubicles with CTs, Surge Protectors and Lightning Arrestors.

GE Mark V Unit control Panel for indoor mounting in a controlled environment, including microprocessor fuel management and sequencing system, generator metering, vibration monitoring, CRT, with annunciation of alarms, and shutdowns.

Scope of Supply

- LM2500 PE Gas Turbine Engine equipped with inlet bell mouth and screen.

- Liquid fuel system, complete and self-contained on the unit, with connection on the baseplate for customer of filtered distillate fuel at 30 +/- 10 psig, up to 40 GPM (maximum), fuel must conform to GE specification MID-LD-0000-2

- Natural Gas fuel system, with connection on the baseplate for customer's filtered, regulated fuel supply at 375 psig +/- 20 psig at a rate of 12,000 pph (200 mmbtu/hr or 6 mscf/day to GE fuel specification MID-LD-0000-1 (Requires field installation of gas metering and block valves, not Included).

- GE Generator, 26,471 kVA ISO rated, 13.8 kV, 60 Hz (11 kV @ 50 Hz), 3600 RPM, air cooled with GE excitation system and voltage regulator. Neutral and line cubicles with CTs, surge protectors and lightning arrestors.

- I-beam baseplates for turbine, generator and unit mounted accessories.

- Acoustic enclosure for gas turbine and generator. Ventilation systems and AC internal lighting.

- Air inlet filtration system for both gas turbine and generator

- Electro-hydraulic start system.

- One new exhaust stack

- New GT Controls (Woodward Atlas based)

- Separate oil systems for gas turbine and generator, including duplex filters, duplex water/oil coolers

Price, Payment and other Conditions:

- By confirmed, irrevocable, divisible and transferable letter of credit issued by agreed United States major bank or European Affiliate of a United States major bank for the full contract amount. . .

- Turnkey Installation and Commissioning available
- Equipment will be crated and prepared for shipment within thirty to sixty (30-60) days after receipt of down payment. However, inspection, acceptance and final payment must be received/confirmed within thirty (30) days of down payment in order for the units to be prepared and released for shipment.

Both LM2500PE dual fuel CTG units, in refurbished condition, are **offered at 6.85 US\$ Million as is where is per unit.**

A standard industry one-year / 8,000 operating hours / 500 cycles, whichever comes first, warranty from installation/commissioning date is included with the purchase price offered, if installed/commissioned within six (6) months of receipt.

Any item(s) not specifically priced/covered in this quotation will can be added and priced as an extra item subject time & material rates.

This offer is subject to shop loading, prior sale and/or unit availability at the time of order confirmation.

No taxes, fees, duties, special boxing, special handling, demurrage, expediting charges, transport expenses, inspection fees, expediting or insurance costs, etc. are included in this offer.

This offer is valid for ten (10) business days from issue.

Full payment will be required prior to any equipment, conveyance or title transfer.

Feel free to call on me at your convenience should you have any questions or desire further assistance in this matter.

These units are in the USA.

Price: POA

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9.) 2 unit Genset CAT 3516B for immediate sale (Zero Hours Meters) as follows :

Year 2000/2001, Brand New still in the Cargo Containers Boxes, Zero Hours Meters
Capacity 2000 kW (2500 kVA), 60 Hz, 3 Phase, 6 Wire, 480 Voltage 3007 Amphere, 1800 rpm

Generator Model SR 4B

Serial No 1HH00615, Serial No. 6TN81329

AR No. 1169866

Max. Alt 912 M

Power 2145 Cap

RPM 1800 max

ECM software 1801936

injector 1504956

Turbo BT 1989914

Price: 380,000 US\$ per unit FOB shipping port,

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10.) 2 unit x CAT 3516 TAES coupled to CAT SR4

1825 kVA / 1460 kW

Power Factor : 0.8

380 / 220 V

3 phase, 50 Hz, 1500 rpm

New in 1994

500 hours used

Synchronizing Panel included

Condition : Very Excellent.

Price : 300,000 US\$ per unit FOB Far-East port

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11.) Six (6) units of Gas Turbine Generators

Make : Stewart & Stevenson

Model : 2416G-2000

2000 kW (2500 kVA)

11 kV, 50 Hz, 1000 rpm

3 Phase

Connected : Wye

Insulation : Class F, VPI

Enclosure : IP,22

Voltage Regulator : Basler

< Short Description >

- Superior Model 2416 Turbocharged, 4-stroke cycle, Natural Gas Engine operating at 1000 rpm:
- Accessory Equipment
- Engine Control Panel/Gauge Panels
- Engine mounted Detectors, Switches
- A common base for the Engine, Accessory rack
- Painting – Olive Green 3 stage for corrosive environment
- Switchgear: Freestanding Six (6) Section Generator Set Metal Clad Medium Voltage Switchgear to provide for Power export and Utility paralleling, using four (4) 2000 kW, 11 kV, 3 phase, 50 Hz GENSETS. Switchgear to allow for remote auto start, remote stop, remote diagnostic communication, and auto synch with utility

Price: 6 Million US\$ for the Lot!

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12.) Four (4) units of 125 MW Westinghouse Dual Fuel Turbines

125 MW Westinghouse W-701D

Dual Fuel : Gas & Light Oil

Year: 1995 (installed in 1998)

Generator : 15 kV, 50 Hz, 3000 rpm

Cooling : Hydrogen,

Controls : monitoring from remote or local panel.

Heat Rate : 10,750 BTU/KWe

	#1	#2	#3	#4
Total Hours	19004	26505	36400	41450
Hours since last Overhaul	7484	4341	7527	9116

Major Gas Turbine Items

Type : Open Cycle, Single Shaft

Model : (TG-50-D) W-701D

Speed : 3000 RPM

Capacity : 125 MW @ ISO

Control System : MASTER 900

Gas Turbine (Air Compressor)

Axial Flow Reaction Type

Compression Ratio : 14/1

Stages : 19

Inlet Vanes : Variable

Combustors

Type : CANNULAR

Quantity : 18

Ignition Method : Electric Spark Method X 2

Gas Turbine (Axial Flow Reaction Type), Quantity : 4

Forced Air Cooled Blades : Stationary Blade 1 & 2 Stages, Moving Blades 1 & 2 Stages

NOx Control : Water Injection to 25 VPPM

Emergency Governor : Mechanical (Ejection Type) and Electrical

Dual fuel (Gas & Light Oil)

Generator Type : Cylindrical Rotating Field

140,000 kVA, 15 kV, 50 Hz

Poles : 2

Cooling : Hydrogen

Insulation : Class F

Exciter : ABB Static

Starting Method : Three Phase Induction Motor

Starting Motor Size : 1450 kW

Synchronous Speed : 1500 RPM

Start Time : within 57 minutes

Controls : Local & Monitoring from Remote or Local Panel

(4) x Westinghouse Licensee MODEL W-701-D, 125 MW @ 50 Hz

Dual fuel Gas Turbine each of which is characterized by the following Equipment and accessories except where mentioned otherwise.

New in 1998::

Offered out with factory warranty if required

Rating : 125 MW each @ ISO

15 kV Generator Terminal Voltage

1. Turbine and Turbine Compartment

Base Mounted, Simple Cycle, Single Shaft, W-701-D Gas Turbine Compartment consisting of:
 Multistage, Axial Flow, Corrosion Protected Compressor
 Eighteen (18) Chamber Combustion System
 3-stage Turbine with coated first stage Buckets, Modulating Inlet Guide Vanes
 On base Gas Fuel System and Liquid Fuel System suitable for distillate
 Dual Ignition System.
 Dual Compartment AC Vent Fans (Negative, common for GT & ACC compartment)
 Vibration Sensors, Seismic type, for protection
 Thermocouples for measuring critical Turbine and load temperatures, including bearing drains
 Inlet and exhaust Plenums
 Load Coupling (Solid), with Coupling Guard & Hardware
 GT Enclosure (On-base) limiting near field noise level to 93 dBA
 Oil filled Accessory Coupling
 Fire detection and protection, for on base Equipment
 * On-base Piping as per ANSI 1331.3
 * Base mounted Terminal Boxes and interconnecting wiring in rigid metal conduits

2. Accessory Systems & Compartments

Accessory Systems & Compartments include:
 Accessory Gear, Heavy-duty, Multi-shaft with Oil filled Accessory Coupling to Turbine Shell
 Starting System, 1450 kW (from external source)
 Electric Motor
 Torque Converter
 Rotor Turning Device
 Fuel Oil Pump
 Lubricating & Hydraulic Oil System
 Shaft driven main lubricating Oil & hydraulic Oil Pumps
 Full flow AC Motor driven Emergency Pump
 Partial flow AC Motor driven Emergency Pump
 Full flow AC Motor driven Auxiliary Hydraulic Pump
 Dual Filters and Transfer Valve for lubricating Oil & hydraulic Oil Systems
 100% Lube Oil in Water Heat Exchangers (fin fan style)
 Piping in accordance with ANSI BI 1. 3 and applicable ASME welding requirements
 Fire Detection and CO2 Protection System for on base Equipment
 Electrical Components
 All Motors, except Starting Motor, feature:
 TEFC Motors, Terminal Boxes, Conduit & Wiring to meet NCC Class 1, Group-D
 Dual Compartment Vent Fans (negative ventilation common for ACC & OT compartments)
 Full weather protected Enclosure for outdoor installation

3. Inlet Air System (Up & Over Orientation)

Filter compartment with:
 Support Structure
 Inlet Ducting
 Access Hatch
 Instrumentation
 Inlet silencing in ducting
 Inlet Bellow
 Transition piece from Inlet Ducting to Inlet Plenum
 Structural Supports

4. Exhaust System (Top Exhaust)

Transition pieces and stack of 15 meters height, including Silencer

5. Load Coupling Compartment

Rigid non-lubricating Load Coupling
 Fabricated Load Coupling Guard
 Full weather protected Enclosure

6. Control Cabinet

Turbine Control Panel
 Motor Control Center
 125 V DC Battery (Lead maintenance free) Charger and DCDB

7. Aux. Compartments & Turbine Fire Detection and Protection System (CO2)
8. Portable Lube Oil Purifier
9. Foundation Hardware
10. Special Tools and Tackle (One Set)

Scope of Supply for each Generator:

- Generator (Open Circuit air cooled) with Stator, Rotor, Built-in RTD'S, Bearings, Foundation Frame and Enclosure Generator with Terminals at top
- Brushless Excitation System including main Exciter
- Ventilation System for Generator with Ducting & Self-cleaning Filters
- Phase isolated Bus-ducts with Aluminum Conductor and Aluminum Enclosure with CT's
- PT's, LA & SP Cubicles (10 meters on phase side & 6 meters on neutral side)
- Neutral Grounding Transformer with Loading Resistor
- Conventional Generator Control Panels and Microprocessor based Relay Panels and duplication of Controls in the Central Control Room
- Inter-connecting Control Cables for connection between Generator Bus Duct and C/R Panels
- CO2 Fire Protection for Generator
- Automatic Voltage Regulator (Digital type)

Price: \$16.9 M USD per unit (including removal from their installation).

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13.) (2) x Sulzer 16ZAVA40S units, 60 Hz operation and HFO.

Specification of Sulzer 16ZA40S Diesel Generator Engine:

Manufacturer : New Sulzer Diesel France

Engine Type : 16ZAV40S

Cylinder Bore/Stroke : 400/560 mm

Speed : 600 rpm

BMP : 24.56 bar at MCR

Number of Strokes : 4 (four)

Number of Cylinders : 16

Nominal Power of Diesel Engine : 13750 kW (720 kW/cyl) at MCR

Rotation : Clockwise

Engine Equipment:

- Two Turbochargers, BBC VTR 454-21
- Air Cooler, GEA, Single Stage, Mounted on Engine
- Flywheel with Barring Rim and necessary Fitted Bolts, without Guard
- Vibration Damper
- Turning Gear with Starting Interlock Valve, Electric Motor and Control Gear
- Indicator Cock on each Cylinder
- Starting Valve for each Cylinder
- Safety Valve in each Cylinder Head
- Starting Air Piping including Safety Valve, Spark Arrester and Non-return Valve
- Exhaust Gas Piping protected with Insulating Panels
- Insulated Fuel Supply and Return Pipes with Connections for Steam Heating
- High Pressure Fuel Injection Pipes with Double-wall Pipes
- Piping on Engine with necessary Mating Flanges, Joints and Bolts
- Coupling Bolts between Engine and Generator
- Foundation Rails with Foundation Bolts
- Speed Governor, ABB, DEGO 2 + ASAC 70
- Oil Mist Detector, Shaller

Generator:

Manufacturer : GEC Alsthom

Type: RP 256-100

Apparent Power : 16800 Kva

Rated Voltage : 12,600 V

Power Factor : 0.8

Speed : 600 rpm

Frequency : 60 Hz

Protection : IP 23

these units are ready for inspection.

Price : 1.4 Million US\$ per unit as is where is, 2.8 Million US\$ for the two (2) units

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14.) (2) x Diesel Engines:

Make : MAN B&W AG, Germany

Type : 14V40/45
 Rated Output : 8.47 MW @ 600 RPM
 Mean Effective Pressure : 21.4 Bar
 (4) x Turbochargers, MAN NA40/TM8128
 Governor : Woodward UG40
 First Commissioned in 1993 and Overhauled in 2005
 In 2005, all Engines were already Overhauled in accordance with MAN services / technical requirements / instructions.
 Total 15980 / 16120 hours used until Overhaul, 4650 / 4670 hours used after last Overhaul in 2005

(2) x Alternators:

Make : SIEMENS
 3-phase Synchronous / Brushless Excitation
 Type : 1DK-5037-3DE05-Z
 Rated Capacity : 10270 kVA
 Speed : 600 RPM
 Power Factor : 0.8
 Rated Voltage / Frequency : 10.5 kV / 50 Hz
 F Class Insulation

Station Service Transformer : Chinese made, 1600 kVA, 50 Hz

- Below-mentioned Scope of Supply is subject to Final Re-confirmation of the End-user during Inspection
- All Sub-station Equipment / Transformers are not included in this Scope of Supply
- Please see attached 'Mechanical Part' and 'Electrical Part'
- Photos will follow separately

<< Mechanical Part >>

(2) x Fuel Oil Supply Systems:

Heavy Oil Daily Tank, 5 m3
 Diesel Oil Daily Tank, 5 m3
 Fuel Oil Mixing Tank, 300 liters
 Fuel Sludge Tank, 250 liters
 Fuel Oil Pre-heater
 Fuel Viscosity Transducer / Measuring Devices
 Fuel Oil Self-flushing Filter, Boll & Kirch, Type : 6.24.4DN40
 Fuel Oil Separator, Alfa-Laval, Type : FOPZ609T-FD-24-50
 Oil Feed Pump
 Oil Heater
 Supply Pump

(2) x Lub. Oil Supply Systems:

Lub. Oil Storage Tank, 15000 liters
 Lub. Oil Circulating Tank, 12000 liters
 Cylinder Jacker Lub. Oil Tank, 1000 liters
 Sludge Lub. Oil Tank, 1000 liters
 Plate Heat Exchanger, GEA
 Lub. Oil Self-flushing Filter, Boll & Kirch, Type : 6.61 DN200
 Lub. Oil Duplex Filter, Boll & Kirch, Type : 2.05.5.340.750 DN150
 Lub. Oil Separator, Alfa-Laval, Type : LOPX710 SFD-34-50
 Cylinder Jacker Lub. Oil Separator, Boll & Kirch, Type : 1.03.2.195.250 DN65
 Pumps, Motor and relevant Devices

(2) x Cooling System:

Cooling Tower & Raw Water Pump
 Plate Heat Exchanger, GEA, VT402
 Pumps, Motor and relevant Devices

(2) x Water Supply Systems:

Booster
 Treatment & Dosing Pump (Dosing Tank)

(2) x Compress - Air Systems:

Air Compressor
 Air Receiver
 De-compressor

(2) x Exhaust gas Systems:

Exhaust gas Boiler

Capacity : 1400 kg/h
 Pressure : 13 bar
 Steam Temperature : max. 1700 degrees C
 Relevant Pump & Devices

<< Electrical Part >>

(2) x Three-Phase Synchronous Generator

Type : IDK5037-3DE05-Z
 Rated Capacity : 10270 kVA
 Rated Voltage : 10.5 kV
 Frequency : 50 Hz
 Power Factor : 0.8
 Stator Current : 565A
 Rated Rotation Speed : 600
 Excitation Mode : Brushless
 Connection : Y
 Exciter Type : RGM240/15

(2) x 10 kV Switchgear Cabinet & Starpoint Earthing Equipment

Main Outgoing Feeder, Bus-coupler, Siemens, 3AF 1762-3
 Generator Cabinet & Station Service Transformer Cabinet, Siemens, 3AF 1766-3
 PT Cabinet (including Bus Measure & Overvoltage Depressor, Siemens, 3CG 4053/5/1993/3158182

(2) x Low-voltage Distribution Panels

Switchgear for 380 V Station Service Transformer, Siemens, S05+S13+K02, VDE 0660(P-2), BS 4752/IEC 947-2,
 Type : 3WNI
 Distribution Panel for 380 V
 Distribution Panel for Engine auxiliaries
 Distribution Panel for Common auxiliaries

(2) x Control, Measuring & Protection Panel

Used for Main Outgoing Feeder, Bus-coupler, Generator, Station Service Transformers & Local Outgoing Feeder
 etc...
 The Alarm Signals are processed by SIEMENS Programmable Controller

(2) x Engine Control & Monitoring System

The Operating situation is monitored by SIEMENS Programmable Controller

(2) x DC 110 V & 24 V Equipment

The DC Equipment consists of total 24 x 6 V batteries, Charger and Distribution Panels

PRICE - FOB FAR-EAST PORT: 3.8 Million USD.

=====

15.) 20 MW, Power Plant, Bunker-C Oil, 1978

(2) x 10 MW, 6.6 kV, 60 Hz, 3600 RPM

Built in 1978 by Fuji Electric Co., Ltd
 Now Under Power in Far-East Plant and can be seen in Running (for min. Power Cost)
 Will be shut down in Oct. 2006 and available for sale since the Customer purchased New Larger Plant
 Estimated Total Weight of the Plant : around 4000 Ton
 Major Description of the Plant
 Steam Turbine
 Manufacturer : Fuji Electric Co., Ltd., Japan
 Type : One Casing Extracting Condensing Type
 Rated Output : 10 MW
 Speed : 3600 RPM
 Inlet Steam Press : 61 kg/cm² abs
 Inlet Steam Temp. : 482 degrees C
 Exit Steam Press (No. 1/2/3) : 16.2 / 3.95 / 0.90 kg/cm² abs
 Condenser Press : 0.121
 AC Generator
 Type : PFT 450 / 45-2
 Output : 12,500 kVA
 Voltage : 6.6 kV
 Current : 1094 A
 Rating : Continuous

Speed : 3600 rpm
 Phase : 3
 Frequency : 60 Hz
 Poles : 2
 Insul Class : B
 Ex. Voltage : 100 V
 Temp Raise (Armature) : 80 degrees
 Ex. Current : 425 A
 Temp Rise (Fielde) : 90 degrees
 Boiler
 Manufacturer : Mitsubishi Hyundai (Japan/Korea)
 Max Cont Rating : 50 TPH
 Type : VU-60
 Max. Press : 70 kg / cm2g
 Steam Temp. : 485 degrees C
 Fuel : Bunker-C Oil
 Efficiency : 87%
 Price Indication:

Plant : 7.3 Million US\$ as is where is. (REDUCED PRICE!!!)

Dismantling Cost : about 1.5 Million US\$ around 3 months required

Also available (at Buyers cost): Supervision of Re-Installation (Engineering & Operatoration....), Know-how transfer etc.....

Pictures and further details available on request.

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16.) 44 MW MAN Power Plant, HFO, 1991/1992

(4) x 10.89 MW, 11 kV, 50 Hz, 600 RPM

(4) x Diesel Engines:

MAN B&W AG, 18V 40/ 45

Rated Output : 10.89 MW @ 600 RPM

(4) x Alternators:

SIEMENS, 1DK-5037-3DE05-E

Rated Capacity : 13200 kVA

Rated Voltage / Frequency : 11 kV / 50 Hz

3-phase Synchronous / Brushless Excitation

(2) x Step-up Transformer, 100/110 kV

Make : <?xml:namespace prefix = st1 ns = "urn:schemas-microsoft-com:office:smarts" />Fuji Electric, Japan

Capacity : 25 kVA

Includes:

Two (2) units of Transformer (each unit includes 2 pieces, total 4 pieces)

Rated Capacity : 20 MVA

Natural Wind-Cooling : 20 MVA / Forced Wind-Cooling : 25 MVA

Rated Voltage of H.V side : 115 +/- 8 x 1.25% kV

Rated Current of L.V : 1050 / 1320 A

Wiring Mode : Yo ◆—◆ Y-11

Insulation : SF6 / C-GIS

One (1) unit of Receiver Transformer with all relevant Control, Measuring, Protection Panels

Total Price : 5.9 Million US\$ (REDUCED PRICE!!!)

- Above quoted Price is FOB Far-East Port, which already included Dismantling, Transport and the relevant handling Charges with Export Taxes.

- Additional Ocean Freight and Insurance Cost to the Buyer's destination will be extra at Buyer's account

Payment Terms:

- 40% Down-pay by T/T within 14 days count from the date of Contract sign and confirmed order

- Balance (60%) by Confirmed & Irrevocable L/C at sight within 7 days count from the date of Contract sign and Receipt of Down-payment

- All relevant Banking Charges will be at Buyer's account

- Please note that all Payment will not be refunded IF order cancelled by the Buyer

Delivery Time:

- Approx. within 8-16 weeks or earlier count from the date of Contract sign and also count from the date of Confirmation of the Dowpayment receipt, subject to final re-confirmation

Remarks:

- All Equipment are in ver good condition and are still installed on site

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17.) Two (2) units of 120 MW Siemens Gas Turbine Plant

Two (2) complete Gas Turbine Power Plants

Each consisting of Siemens V94.2 heavy-duty Gas Turbines with all relevant auxiliaries in excellent condition

10.5 KV, 50 Hz

Fuel : Currently on Liquid Fuel, but Gas Conversion Equipment available.

Two (2) complete Gas Turbine Power Plants each consisting of two (2) Siemens Gas Turbines and all relevant auxiliaries in excellent condition, fully operable, ready for immediate delivery.

Description of Gas Turbine Generators

GT units GT1 & GT2 are Siemens V94.2 heavy-duty Gas Turbines.

Each with a rated output of 120 MW at ISO conditions.

Each GT unit is of Single-Shaft, Single Casing design, equipped with 2 Silo-type Combustion Chambers, a 16-stage Compressor and a 4-stage Turbine.

An air-cooled Generator, rated at 125 MVA and generating at 10.5 kV is driven from the cold (Compressor) end of the GT unit.

GT1 & GT2 are currently installed with Siemens diffusion-type Burners for operation on Distillate-oil Liquid Fuel.

Main Equipment List

Equipment	Description	Qty	Year	Make	Model	Capacity/Rating ¹
GT1	Gas Turbine	1	1982	Siemens	V94.2	120 MW
GT2	Gas Turbine	1	1982	Siemens	V94.2	120 MW
GT1	Generator	1	1980	Siemens	TLRI 108/41	10.5 kV, 125 MVA
GT2	Generator	1	1982	Siemens	TLRI 108/41	10.5 kV, 125 MVA
GT1 & 2	Generator Step-Up T/F	2	1982	Siemens	-	10.5 kV to 66 kV, 120 MVA
GT1 & 2	Unit T/F	2	1982	Siemens	-	10.5 kV to 6 kV
GT1 & 2	Main Oil Pump	4	1980	Siemens	ET8020VL	27.77 l/s
GT1 & 2	Secondary Bearing Pump	2	1980	Siemens	-	10.55 l/s
GT1 & 2	Lubricating Oil Cooler	2	1980	Luwa	EK 43/26-4R	13.32 dm/s
GT1 & 2	Fuel Oil Injection Pump	2	1980	Allweiler AG	SHF440 P46	750 l/min, 57.5 Bar
Common	Station T/F	2	1980	-	-	22 kV to 6 kV
Common	Auxiliary T/F	2		-	-	6 kV to 3.3 kV
Common	Auxiliary T/F	2		-	-	6 kV to 1400 V
Common	Auxiliary T/F	2		-	-	6 kV to 500 V
Common	Auxiliary T/F	2		-	-	6 kV to 380 V
Common	Auxiliary T/F	1		-	-	3.3 kV to 415 V
Common	Blackstart Diesel Generator	2	1981	JP Sauer & Sohn	WP13L100	2.9 MVA
Common	Blackstart Air Compressor	2	1999	Boge	SRH460	460 l/min, 35 BarG
Common	Mobile Air Compressor	1	1982	Fuji	EUV-15	9.9 kg/cm ² , 317 l
Fire Fighting	Diesel Fire Pump	1	1980		-	1872 GPM
Fire Fighting	Electric Fire Pump	1	1980		-	1872 GPM
Fire Fighting	Hydrant Pump	2	1980		-	1200 GPM
Fire Fighting	Diesel Fire Pump	1	1982		820162/1	680 m ³ /hr
Fire Fighting	Electric Fire Pump	1	1982		810353/1	682 m ³ /hr
Fire Fighting	Foam Tank	1	1986		-	17.5 Bar
Fire Fighting	Water Storage Tank	1	1986		-	1100 m ³

Summary of Service Hours & Number of Start-Ups

GT Unit	Total Service Hours ^[1]	EOH Hours ³	TTL No of Starts ³	Number of Start-Ups						
				FY97/98	FY98/99	FY99/00	FY00/01	FY01/02	FY02/03	FY03/04
GT1	11,269	37,603	2,385	6	9	83	109	106	93	72
GT2	14,902	46,331	2,598	69	57	65	104	88	81	69

Overview of Operation & Maintenance

The Plant owner has consistently performed maintenance on the GT units in order to achieve consistently high levels of availability, generation efficiency, peaking capability and reliable start-up.

Major Overhauls have been carried out at intervals of 25,000 EOH.

Inspections on the GT units are typically performed at 18-month intervals and cover the following scope:

- General inspections of GT Thermal Block
- Renewal of Air Filter Elements
- Inspection & Renewal of Flame Tube Bricks (where required)
- Inspection & Repairs to Air-filter House and Exhaust Diffuser/Stack

The owner performed a Major Overhaul on GT2 in October 1992. Similarly, a Major Overhaul of PPGT1 was last performed in November 1998 with the following scope:

- Installation of new Flame Tubes complete with assembled Bricks
- Installation of new Flame Tube Plates
- Installation of new Inner Casing
- Installation of new Transition Rings
- Installation of new Stage 1 Compressor Rotor Blades
- Repair of Mixing Chambers
- Overhaul of Generator Alternator

1. Equipment and Systems

The following Equipment, auxiliary and ancillary systems will form part of the Scope of Sale:

For each GT1 & GT2 Gas Turbine Unit:

- GT Thermal Block
- GT associated Fire Protection & Detection System / Gas Leak Detection System
- GT Instrumentation & Controls
- GT Monitoring & Protection System
- GT Control Valve Block
- GT Starting Motor and Torque Converter System
- GT DC System with Battery & Charger
- Ignition System
- Fuel Firing System (for Distillate-oil Liquid Fuel)
- Lubrication Oil System and Lubricating Oil-radiator Coolers
- Control Oil System
- On-line Compressor Cleaning System
- Off-line Compressor Cleaning System
- Air Intake & Filter System with Silencers and self-cleaning Elements
- Exhaust Gas Stack, Exhaust Gas Ducting, Silencers, Expansion Joints, Aviation Obstruction Warning Lights and Lightning Arrestors

For each GT1 & GT2 Generator Unit:

- Generator with air-cooling, including Generator main Connections, Generator Circuit Breaker, Isolated phase Bus-ducts and auxiliary Switchgear
- Static Frequency Converter System
- Static Excitation System with automatic Voltage Regulation Control
- Lubricating-oil System and Lubricating Oil-radiator Coolers
- Generator Cooling System
- Generator associated Control, Instrumentation, Metering & Protection System
- Generator Terminal Enclosure
- Internal Piping & Cabling Integral to the Unit
- Neutral Grounding Transformers/Resistors

For each GT1 & GT2 Transformer Unit:

- Generator Step-up Transformer (10.5 kV to 66 kV)
- Unit Transformer (10.5 kV to 6 kV)
- Associated Protection, Control & Instrumentation System

Mechanical Auxiliary & Ancillary Systems:

- Two (2) Distillate-oil Storage Tanks
- Three (3) Distillate-oil Day Tanks
- Distillate-oil Unloading System (from truck and ship)
- Fire Fighting System, including Diesel Engine and electrically driven Fire Pumps, Water Storage Tank and Foam Storage Tank
- Fire Detection & Alarm System
- Black-start Diesel Generator and Black-start Air-compressor
- Compressed Air System, including Compressors and Receivers
- Turbine Hall Overhead Cranes

Electrical Auxiliary & Ancillary Systems:

- Two (2) Station Transformers (22 kV to 6 kV)
- Two (2) auxiliary Transformers (6 kV to 3.3 kV)
- Two (2) Frequency Converter Transformers (6 kV to 1400 V)
- Two (2) Exciter Transformers (6 kV to 500 V)
- Two (2) Low Voltage Transformers (6 kV to 380 V)
- One (1) Off-site System Transformer (3.3 kV to 415 V)

- 66 kV Switchgear for Interconnection to Electricity Grid
- 22 kV Switchgear for Station auxiliary Voltage System
- 6 kV Switchgear for Station auxiliary Voltage System
- 3.3 kV Switchgear for Station auxiliary Voltage System
- 380 V Switchgear for Station auxiliary Voltage system
- 380 V Switchgear for Station auxiliary Power System
- 220 V Switchgear for Station auxiliary Power System
- 24 V Switchgear for Station auxiliary Power System
- 220 V DC System including Chargers & Batteries
- 24 V DC System including Chargers & Batteries
- Associated Protection, Control and Instrumentation System

Instrumentation and Control Auxiliary and Ancillary Systems:

- Siemens Iskamatic Control & Protection System for GT units
- Vibration Monitoring System for GT units
- Ronan Sequential Event Recording (SER) system
- Electro hydraulic Control System for GT units
- Station CCTV System

2. Spare Parts and Special Tools

The following Spare Parts and Special Tools will be included in the scope of the asset sale:

Gas Turbine Unit Spare Parts

- Sixty-four (64) pieces of V94.2 dual fuel diffusion burners (used condition)

Generator Unit Spare Parts

- 18 pieces - SHIM V40 A00A34K42 0704/00100
- 3 pieces - DUPLEX RES.TEMP.DET ID-NRA00B07E17
- 15 pieces - BRUSH CARBON NKF634 A00A35B70 0705/1
- 6 pieces - HOLDER DOUBLE BRUSH ID-NR A00D36C89
- 1 piece - MODULE ME2-2, MEAS INPUT C71451-A31-A11
- 1 piece - TRANSDUCER ZV4-2, IMPEDANCE C71451-A61A11
- 1 piece - PASS TP3-1, LOW C71451-A39-A8
- 1 piece - INDICATOR, SLIPPING LIMIT C71451-A69-A31
- 1 piece - STABILIZER STU2-2 C71451-A35-A13
- 1 piece - INVERTER WR4/GR3-5 C71451-A37-A22
- 1 piece - SETTER UG4-1, VOLTAGE C71451-A27-A21
- 1 piece - CONTROL WG4-1, ANGLE C72451-A95-A4
- 1 piece - INDICATOR N16-2, ZERO C72451-101-A14
- 1 piece - SET KUS4-1, RELAY C71451-A65-A10
- 1 piece - SETTER KG12-3, COMMAND C72451-A107-A9
- 1 piece - CONTROLLER UA1-1, VOLTAGE C72451-A139-A3
- 1 piece - SET RK2-1, RELAY CHT11 C72451-A103-A2
- 1 piece - REGULATOR, VOLTAGE FA-1 C72451-A141-A2
- 1 piece - MODULE POWER SUPPLY Y3 ARB11-P4D 2523-2A
- 1 piece - MODULE INTERLOCKING V30 ARB11-P2D 2565-2A
- 1 piece - MODULE TIME Z24 ARB11-P2D 2577-1A
- 1 piece - MODULE, RELAY Y24-2 ARB-P2D-2573-1A
- 1 piece - MODULE DECOUPLING V23 ARB11-B2D 2514-1A
- 1 piece - MODULE COMMAND Y29A 1ARB11-P3D 2598-2A
- 1 piece - MODULE COMMAND Y29B ARB11-P3D 2599-1A

Gas Turbine Special Tools

- One (1) Generator Skid
- One (1) Generator Trolley
- One (1) set Generator Rotor Support (consisting of two pieces)
- One (1) GT Turbine Lifting Beam
- One (1) GT Turbine Bearing Shaft Support
- One (1) set GT Compressor casing transportation I-beam (consisting of two pieces)
- One (1) GT Compressor Bearing Shaft Support
- Three (3) GT Combustion Chamber Supports
- Three (3) Up-ending Clamps

3. Documentation

The following Documentation will be included in the scope of the asset sale:

- Operation and Maintenance Manuals
- GT Unit Major Overhaul Records

GT1 1st Major Overhaul, June 1990, 2nd Major Overhaul, November 1998

GT2 1st Major Overhaul, October 1992

Price on request.

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18.) 100 MW MAN Power Plant, HFO, 1992/1993

(10) x 10 MW, 11 kV, 50 Hz, 428 RPM

(10) x Diesel Engines:

Make : MAN B&W AG, Germany

Type : 9L 58/64

Rated Output : 11.925 MW @ 428 RPM

Water-cooled, In-line Engine, Exhaust Turbocharger with Intercooler

Fuel Oil Consumption : ? 205 g / kWh

Lub. Oil Consumption : ? 1 g / kWh

First Commissioned in 1992/1993 and still in Operation

Total Running Hours & Overhaul Condition : See below

(10) x Alternators:

Make : SIEMENS

Type : 1DK-5928-3DE 05-2

Excitation Mode : Brushless / Open Wind Cooling

Rated Capacity : 14500 kVA

Rated Voltage : 11 kV

Frequency : 50 Hz

Rated Current : 761 A

3-phase Synchronous

F Class Insulation

Existing Engine Performance Data:

Output : 10 MW

Fuel Oil Consumption : 213.927 g / kWh

Lub. Oil Consumption : 0.985 g / kWh

Price: 9.1 Million US\$ FOB Far-East Port. - REDUCED PRICE!!

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19.) 200 MW Diesel Power Generation Plant

The plant consists of 2 stations, one station has a capacity of 34 MW and consists of 4 diesel generators, of which three is Japanese made with diesel engine Model 16PC2-6 combined with Japanese made generator NTAKL giving an output of 8,500 kW each.

The second station has 20 units of Sulzer diesel engines packaged with Alsthom generators giving a total capacity of 200 MW.

The plant is considering to sell part or whole of the plant to have the land for other purposes.

1. The Sulzer Diesel Engines

Model 16ZAV40S

Manufacturer Sulzer, France

Rated Output 10,560kW (4 sets), 11,520kW (16 sets)

No. of Cylinders 16

Cylinder Diameter 400

Stroke Distance 560

Speed 500 rpm

Fuel Oil Consumption 205g/kWh

Lub Oil Consumption 1g/kWh

Maximum Continuous Power 10,560kW (4 sets), 11,520kW (16 sets)

Weight of Engine 132 tons

2. The Generator

Model RP256-90B (4 sets) / RP256-100 (16 sets)

Manufacturer Alsthom, France / Alsthom, France

Designed Capacity 10,238kW / 11,186kW

Output Voltage 10.5kV / 10.5kV

Designed Current 704A / 770A

Designed Speed 500 rpm / 500 rpm
 Designed Frequency 50Hz / 50Hz
 Power Factor 0.8 lagging / 0.8 lagging
 Insulation Class F / Class F
 Weight of Generator 43.55 tons / 43.55 tons

Price: 22.5 Million US\$, FOB Far-East Port. REDUCED PRICE

20.) 13 MW Diesel Power Generation Plant

The whole Plant consists of two (2) Deutsche / Siemens Diesel Generator units giving a total capacity of 13 MW @ 50 Hz

The units started operation in 1994 and have operated around 30,000 hours.

Since the land has to be cleared for other usage, the plant is now under dismantling process and will be stored pending for a Buyer.

Engine

Model : BV16M640

Manufacturer : Deutsche Diesel, Germany

Rated Output : 6590 kW

Speed : 600 rpm

Generator

Model : IDK4733-3 BE05-Z1994

Manufacturer : Siemens, Germany

Designed Capacity : 7950 kVA

Stator Output Voltage : 10 kV

Designed Speed ; 600 rpm

Designed Frequency : 50 Hz

Power Factor : 0.8 lagging

List of Auxiliaries

Mechanical	Electrical
Main Controller - VTR354-11	10kV Station Transformer Cubicle
Oil Filter, Oil Purifier	Electrical Control Panel
Fuel Oil Pump, Fuel Oil Heater	Main Transformer Panel
Fuel Oil Systems (Pipings)	Low Voltage Supply Panel
Lub Oil Pump, Lub Oil Cooler	DC Supply Panel
Lub Oil Tank, Lub Oil Purifier	Diesel Engine Control Panel
Sealing Oil Pump	Diesel Auxiliaries Control Panel
Sealing Oil Tank	Generator Control Panel
Heat Exchanger	Security Alarm System Panel
Steam/Water Separator	Heat Exchanger Control Panel
Water Cooler	Exciter Control Panel
Cooling Water Pump	
Cooling Water Tank	
Water Circulating Pump	
Water Tower	
Pure Water Generator	
Air Filters	
Air Compressor	

This is a general list of supply.

Full details will be provided for potential Buyers.

Price: 2,140,000.00 US\$ (for both sets)...This price includes:

1. The unit itself with all auxiliaries
2. Dismantling, re-conditioning, packaging and delivery to alongside ship at the nearest SEA-Port (far-east).

21.) (2) x 8.47 MW MAN Power Plant, HFO, 1993

10.5 kV, 50 Hz, 600 RPM

(2) x Diesel Engines:

Make : MAN B&W AG, Germany

Type : 14V40/45

Rated Output : 8.47 MW @ 600 RPM

Mean Effective Pressure : 21.4 Bar

(4) x Turbochargers, MAN NA40/TM8128

Governor : Woodward UG40

First Commissioned in 1993 and Overhauled in 2005

In 2005, all Engines were already Overhauled in accordance with MAN services / technical requirements / instructions.

Total 15980 / 16120 hours used until Overhaul, 4650 / 4670 hours used after last Overhaul in 2005

(2) x Alternators:

Make : SIEMENS

3-phase Synchronous / Brushless Excitation

Type : 1DK-5037-3DE05-Z

Rated Capacity : 10270 kVA

Speed : 600 RPM

Power Factor : 0.8

Rated Voltage / Frequency : 10.5 kV / 50 Hz

F Class Insulation

Station Service Transformer : Chinese made, 1600 kVA, 50 Hz

- Below-mentioned Scope of Supply is subject to Final Re-confirmation of the End-user during Inspection
- All Sub-station Equipment / Transformers are not included in this Scope of Supply
- Please see attached 'Mechanical Part' and 'Electrical Part'
- Photos will follow separately

<< Mechanical Part >>

(2) x Fuel Oil Supply Systems:

Heavy Oil Daily Tank, 5 m³

Diesel Oil Daily Tank, 5 m³

Fuel Oil Mixing Tank, 300 liters

Fuel Sludge Tank, 250 liters

Fuel Oil Pre-heater

Fuel Viscosity Transducer / Measuring Devices

Fuel Oil Self-flushing Filter, Boll & Kirch, Type : 6.24.4DN40

Fuel Oil Separator, Alfa-Laval, Type : FOPZ609T-FD-24-50

Oil Feed Pump

Oil Heater

Supply Pump

(2) x Lub. Oil Supply Systems:

Lub. Oil Storage Tank, 15000 liters

Lub. Oil Circulating Tank, 12000 liters

Cylinder Jacker Lub. Oil Tank, 1000 liters

Sludge Lub. Oil Tank, 1000 liters

Plate Heat Exchanger, GEA

Lub. Oil Self-flushing Filter, Boll & Kirch, Type : 6.61 DN200

Lub. Oil Duplex Filter, Boll & Kirch, Type : 2.05.5.340.750 DN150

Lub. Oil Separator, Alfa-Laval, Type : LOPX710 SFD-34-50

Cylinder Jacker Lub. Oil Separator, Boll & Kirch, Type : 1.03.2.195.250 DN65

Pumps, Motor and relevant Devices

(2) x Cooling System:

Cooling Tower & Raw Water Pump

Plate Heat Exchanger, GEA, VT402

Pumps, Motor and relevant Devices

(2) x Water Supply Systems:

Booster

Treatment & Dosing Pump (Dosing Tank)

(2) x Compress - Air Systems:

Air Compressor

Air Receiver

De-compressor

(2) x Exhaust gas Systems:

Exhaust gas Boiler

Capacity : 1400 kg/h
 Pressure : 13 bar
 Steam Temperature : max. 1700 degrees C
 Relevant Pump & Devices

<< Electrical Part >>

(2) x Three-Phase Synchronous Generator

Type : IDK5037-3DE05-Z
 Rated Capacity : 10270 kVA
 Rated Voltage : 10.5 kV
 Frequency : 50 Hz
 Power Factor : 0.8
 Stator Current : 565A
 Rated Rotation Speed : 600
 Excitation Mode : Brushless
 Connection : Y
 Exciter Type : RGM240/15

(2) x 10 kV Switchgear Cabinet & Starpoint Earthing Equipment

Main Outgoing Feeder, Bus-coupler, Siemens, 3AF 1762-3
 Generator Cabinet & Station Service Transformer Cabinet, Siemens, 3AF 1766-3
 PT Cabinet (including Bus Measure & Overvoltage Depressor, Siemens, 3CG 4053/5/1993/3158182

(2) x Low-voltage Distribution Panels

Switchgear for 380 V Station Service Transformer, Siemens, S05+S13+K02, VDE 0660(P-2), BS 4752/IEC 947-2,
 Type : 3WNI
 Distribution Panel for 380 V
 Distribution Panel for Engine auxiliaries
 Distribution Panel for Common auxiliaries

(2) x Control, Measuring & Protection Panel

Used for Main Outgoing Feeder, Bus-coupler, Generator, Station Service Transformers & Local Outgoing Feeder
 etc...
 The Alarm Signals are processed by SIEMENS Programmable Controller

(2) x Engine Control & Monitoring System

The Operating situation is monitored by SIEMENS Programmable Controller

(2) x DC 110 V & 24 V Equipment

The DC Equipment consists of total 24 x 6 V batteries, Charger and Distribution Panels

Price: 3,600,000.00 US\$ for both sets, including dismantling & packing

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22.) 2 TYPE S.E.M.T. - PIELSTICK 18 PC3V DIESEL - GENERATOR SETS

Spares Package Included

Engine Power 12,6 MW each unit
 Condition Mint -- Total running hours 55,000
 Used as a back up unit to Grid and to deliver energy to heating.
 Manufacturer: Lindholmen Gteborg/Pielstick
 Manufactured: 1974 and installed 1975-76
 2 complete sets of diesel-generators incl. spareparts.

Engines

4-stroke, 18 cylinders, V-built turbocharged medium speed diesel type S.E.M.T. –
 Pielstick 18 PC3V, manufactured by Lindholmen Motor in Gteborg.
 Engine performance at 20C cooling water temperature, air 27C and 750 mm Hg
 pressure:

Max output	12580 kW
Speed at max output	428 rpm
Weight	164 tons
As fuel	diesel oil or HFO can be used

Alternators

Alternators are fully encapsulated 3-phase synchronous Strmberg design, provided

with water/air cooler and with following main data:

Max output	12250 kW
Voltage	10500 V
Current	793 A
Frequency	50 Hz
Speed	428 rpm

Transformers

ASEA manuf. 70/10 kV, 30 MV

Additional info

If above units kept warm, each engine can produce power to common grid in less than 10 min after starting order.

Engine Power 12,6 MW each unit

Condition Mint -- Total running hours 55,000

Used as a back up unit to Grid and to deliver energy to heating.

Manufacturer: Lindholmen Goeteborg/Pielstick

Manufactured: 1974 and installed 1975-76

2 complete sets of diesel-generators incl. spareparts.

Engines

4-stroke, 18 cylinders, V-built turbocharged medium speed diesel type S.E.M.T. –

Pielstick 18 PC3V, manufactured by Lindholmen Motor in Goeteborg.

Engine performance at 20C cooling water temperature, air 27C and 750 mm Hg pressure:

Max output	12580 kW
Speed at max output	428 rpm
Weight	164 tons
As fuel	diesel oil or HFO can be used

Alternators

Alternators are fully encapsulated 3-phase synchronous Strömberg design, provided with water/air cooler and with following main data:

Max output	12250 kW
Voltage	10500 V
Current	793 A
Frequency	50 Hz
Speed	428 rpm

Transformers

ASEA manuf. 70/10 kV, 30 MV

Additional info

If above units kept warm, each engine can produce power to common grid in less than 10 min after starting order.

Alfa Laval HFO Oil Treatment Plant

Air Compressor and Aux.

HFO Day Tank

Asking Price: Euro 650,000.00 EURO for the complete Powerplant.

23.) 10.5 MW CATERPILLAR Diesel Power Plant, HFO, 1994

<< General Information >>

(3) x 3500 kW Caterpillar 3616 Diesel Generator Sets, 6.6 kV, 50 Hz

(2) ran continuous at 85 % loading and (1) kept as standby until 1999.

Plant is in perfect working order and now runs only in grid power outages.

D.G. Sets are designed for operation on Heavy Fuel Oil (Bunker "C").

Average gross kWh/liter of Bunker C as fuel achieved was 4.05 during continuous operation.

Power Plant is equipped with:

Associated Auxiliaries

Electrical Control

Power Switchgear with adequate standby units for reliable operation.

Plant does not have Waste Heat Recovery System although possible to install.

All scheduled Maintenance, minor & major, were carried out under the supervision of authorized

manufacturer representatives.

Set 1 (11881 hrs), Set 2 (18724 hrs), Set 3 (24909 hrs)

Tools & Tackles required for Maintenance are available

Manual for Operation & Maintenance, Specifications of all Equipments available

All Maintenance was done under Supervision of Dealer as per recommended schedule

Detailed Technical Specification and Photos attached

<< Terms & Conditions >>

The price quoted herein is for immediate acceptance and is subject to prior sale.

Equipment is quoted "as is where is", subject to inspection and prior sale" unless otherwise indicated.

Payment must be made in full, prior to shipping, unless other arrangements are made and agreed to prior to receipt of order.

Equipment is not warranted to be merchantable or fit for any particular purpose whatsoever.

Scope of Supply must be verified by customer during inspection.

Not responsible for errors or emissions

The description of all property listed herein is based on available information which is believed to be reliable, but Seller makes no warranty or guaranty as to its reliability.

Removal is at buyer's risk and expense.

Buyer acknowledges the goods described herein are used goods, neither designed, manufactured, nor altered by Seller.

As Seller has no knowledge of the specific application of the equipment by Buyer, Buyer acknowledges it is Buyer's responsibility to provide proper safety devices for the intended application or use so as to protect operator and others from harm and to comply with all federal, state, and local government laws, rules and regulations relating to safety standards and all industry safety standards.

Buyer agrees to indemnify, hold harmless and defend Seller from and against any and all claims and liabilities arising out of the use of, or in any way involving injury or accident to person(s) or property(s) occasioned by, said equipment.

<< Detailed Technical Information >>

Engines (3 nos.)

Make : CATERPILLAR

Model : 3616

Year of Manufacture : 1994

Year of Installation : 1995

Power : 4828 Hp, 3600 KW

Fuel Timing : 119.08 mm

Operating Speed : 750 rpm

Idle Speed : 350 rpm

Number of Cylinders : 50 degrees, Vee-16

Bore : 280 mm

Stroke : 300 mm

Type : 4-stroke, Cycle Turbocharged-Aftercooled

Compression Ratio : 13 : 01

Displacement : 296 L (18,036 cubic inches)

Rotation (Viewed from Flywheel) : CW Optional

Injection Method : Unit Injectors

Fuel : Diesel/ Bancker C

Cooling System : Two Gear Driven Pumps separate Circuit

Coolant Static Head : 7 m, H2O ext. restriction @ 900 rpm

Allowable Exhaust : 250 mm, H2O

System Back Pressure

Maximum Inlet System Restriction : 380 mm, H2O

Air Cleaners : Remote Unit

Engine Weight : 29982 kg (Dry with Attachments)

Engine Weight : 31 615 kg (With Fluid & Attachments)

Displacement : 18.47 L

Cylinder : 1,127.3 cubic inches

Mean Piston Velocity : 9 m/s

Total Hours logged till Date : 11870 / 18687 / 24876 Hours.(D.G.no No 1, 2, 3 respectively)

Last Major Maintenance : 6196 / 15865 / 1465 Hours (D.G No 1, 2, 3 respectively)

Alternators (3 nos.)

Make : LEROY SOMER

Type : LSA 56 , VL 10/8P

Year of Manufactue : 1996, 1994, 1994 (Set no 1, 2, 3 respectively)

Synchronous : 3 Phases

No of Pole : 8
 Connections : Star
 Rated Output : 4375 kVA
 Voltage : 6600 V
 Frequency : 50 Hz
 Power Factor : 0.8
 Speed : 750 Tr / min
 Protection : IP 23
 Inlet Filters : Yes
 Insulation : CI : F
 Temperature Rise : CI : F
 Ambient Temperature : 40 °C
 Cooling : IC 01
 Excitation : Brushless
 Voltage Regulation : R.B.S.
 Equipment Plate : Short Circuit Comp.
 Construction Type : Double Bearing
 Bearing Type : Sleeve Bearing
 Weight of Rotor : 6275 kg
 Total Weight : 15300 kg
 Stator Heat Protection : SME 202 (Quantity : 6)
 Bearing Heat Protection : SME 202 (Quantity : 1)

Purifier Lun Oil (3 nos.)

Make : ALFA-LAVAL
 Rated Capacity throughput : 2900 l/hr
 Lub Oil throughput R&O Type : 1000 l/hr
 Running up Time : approx. 2 min
 Stopping Time : approx. 15-20 min
 Electric Motor : 3 kW
 Speed:
 Drive Motor : 3000 rpm
 Bowl Spindle : 9510 rpm
 Sludge & Water Space : 1.05 litres
 Power Consumption:
 Idling : 0.9 kW
 Running (HFO) : 1.8 kW
 Running (MDO) : 2.0 kW
 Operating Water:
 Pressure : 150 - 600 kPa (1.5 - 6 Bar)
 Total Consumption : 3 l (per Discharge)

Injector Tip Module

Make : ALFA-LAVAL
 Motor : 2.2 kW
 Max Work Pressure : 10 Bar

Purifier Bunker C (2 nos.)

Make : ALFA-LAVAL
 Throughput Rated Capacity : 5600 l/h
 Heavy Fuel Oil : 3500 l/h (throughput Capacity at Viscosity cSt/30 °C)
 Speed @50 Hz:
 Drive Motor : 1420-1500 rpm
 Bowl Spindle : max.7605 rpm
 Starting-up/Stopping Time:
 Starting Time : approx. 2 minutes
 Stopping Time : > 4 minutes
 Sludge & Water Space : 1.3 litres
 Built-on Feed Pump Capacity : 2420 l/h
 Suction Lift : max. 40 kPa
 Delivery Head : max. 150 kPa
 Built in Oil Outlet Disc Pump:
 Electric Motor (at 50 Hz) : min. Size 4 kW
 Power Consumption : 2.4 kW (running, Heavy Fuel Oil)
 Total Water Consumption : 6 litres (per Discharge)

Cooling System (3 nos.)

Cooling Tower : CMB-W-300, COOLING MAN make
 Motor : 10 HPX 4 Pole
 Fan Ass'y : 2400 mm Dia. X 4 Blades
 Sprinkler Head : CSH-200
 Air Volume : 2200 mm /min (CFM)
 Nominal Water Flow : 3900 l/min
 Raw Water Pump

Booster Module (1 no.)

Make : ALFA-LAVAL
 Module Type : SBM 45N-25N EE
 Alfa Laval Oy Module No. : 280860-65
 Total Power : 7400 kW
 Max Fuel Consumption : 1600 l/h
 Heavy Fuel Viscosity : 280 cSt/50°C
 Heavy Fuel Day Tank Temp. : 60 °C
 Heavy Fuel Flow to Engines : 8260 l/h
 Electric Power Supply : 380 V / 50 Hz
 Heating Medium : Electrical
 EL. Consumption : 72 kW

Viscochief:

Make : ALFA-LAVAL
 Model : EVT-10C
 Power Supply : 24/48VAC
 Power Consumption : maximum 8VA
 Ambient Temperature : maximum 70 °C
 Working Pressure : maximum 4 Mpa (40 Bar)
 Testing Pressure : maximum 6 Mpa (60 Bar)
 Enclosure : IP55
 Output : 4-20 mA
 Measuring Range : 0-50cSt
 Material : Housing-Modular Cast Iron
 Mounting Style : Avoid Air Pocket
 Flange Connections : according to DIN2633 or JIS B2210(20K)

Viscosity Control Unit (Remote/Local):

Make : ALFA-LAVAL
 Model : VCU-160 R/L
 Power Supply : 110, 127, 220 VAC; 50/60 Hz
 Power Consumption : maximum 75 VA
 Ambient Temperature : 55 °C
 Enclosure : VCU-160 R:IP20, VCU-160 l:IP54

Electric Preheater:

Make : A/S VESTA
 Model : EO 72
 Working Pressure Shell : 10 Bar
 Working Temperature Shell : 150 °C
 Power Rate : 72 kW
 Power Supply : 3 x 380 V, 50 Hz
 Intended for : Alfa-Laval ind.PL-51 SF-02271-Espoo Phu

Air Compressors

Electric Compressor : ATLAS COPCO, Type.LT55 30U, S/N.AIW046442, 1500 rpm, 5.5 kW, 30 Bar
 Electric Driven : LELOY SOMER Motor, S/N.756501JA014, 5.5 kW, 380 V, 50 Hz, 1420 rpm
 Engine Compressor : ATLAS COPCO, Type.LT730, S/N.AM295298, 1800 rpm, 30 Bar
 Engine Driven : YANMAR Engine, Model.TF110, S/N.014188, 7.5 kW, 2400 rpm

Auxiliary Tank Capacity

Daily Tank : 20000 liters
 Setting Tank No.1 : 20000 liters
 Setting Tank No.2 : 20000 liters
 Setting Tank No3 : 20000 liters
 Diesel Tank : 5000 liters

Lube oil Tank : 5000 liters
 Air Compressor Tank No.1, 2, 3 : 30 Bar
 Lube Oil Injector : 600 liters

Control Panel

Generator Control Panel: UNILIB make (3 nos.)

The Panel have full Protection Device:

Deferential Transformer : Basler Electric Model.BE1-87T

Deferential Alternator : Basler Electric Model.BE1-87G

Ground Fault : Basler Electric Model.BE1-50G

Reverse Power : Basler Electric Model.BE1-32R

Reverse Reactive Power : Basler Electric Model.BE1-32R

Under/Over Voltage : Basler Electric Model.BE1-27/59

Over Current on each Phase : Basler Electric Model.BE1-50/51B-103

Frequency Relay : Type.252-Phuw, CROMPTON make

The Control is by PLC : Idec FA-2Junior

Governor : KG30-04-FB, FRITZ HEINZMANN make, Range 1500-4250 Hz, 24V.

Synchronizer Load Sharing : LMG03, FRITZ HEINZMANN make, Range 115/220 V, STG30-01

Actuator : STG30-01, FRITZ HEINZMANN make

Automatic Voltage Regulator : RBS600, LEROY SOMER make, 3 phase,100 W, 380/400-100/110V , 50/60 Hz

Fault/Alarm Annunciator : 38 Nos

Master Control Panel : UNILIB make (1 no.)

Over Current : Basler Electric Model.BE1-50/51B-103

Frequency Relay : Type.252-Phuw, CROMPTON make

The Control is by PLC : Idec FA-2Junior

Fault/Alarm Annunciator : 33 Nos

Switchgear

Generator Switchgear (3 Nos):

ABB make

SF6 CB

1250 A, 25 kA , 24 kV, 50 Hz

Sace Ha2/ZC-24-12-25 ABB

O/V Relay

K2CA-D03-R2 Omron

Feeder Switchgear (1 No):

ABB make

SF6 CB

1250A,25 KA ,24 kV, 50 Hz

Sace Ha2/ZC-24-12-25 ABB, O/V Relay

K2CA-D03-R2 Omron

Station Switchgear (1No):

ABB Make

Load Break SW. 16 kA, 630 A

Battery Charger

110 VDC Battery : Valve regulated Lead Acid Battery, NP65-12 ,12 V, 65AH, YUASA make, 9 Nos

24 VDC Battery : Valve regulated Lead Acid Battery, NP65-12 ,12 V, 65AH, YUASA make, 2 Nos

Transformer

Step up transformer:

Make : TIRA THAI

Rating : 4500 kVA

Primary Voltage : 6600 V

Secondary Voltage : 22000 V

Cooling : ONAN

Connection : Yd1

Auxiliary Transformer (Step down)

Make : TIRA THAI

Rating : 800 kVA

Primary Voltage : 22000 V

Secondary Voltage : 400/230 V

Cooling : ONAN

Connection : Dyn11

MDB

Feeder List:

Cooling Pump Starter : 160 A, 4 nos.
 Heater : 80 A, 3 nos.
 Water Booster Pump Starter : 15 A, 1 no.
 HFO Pump Starter : 63 A, 2 nos.
 Cooling Fan Starter : 63 A, 4 nos.
 Lube Oil Pump Starter : 15 A, 4 nos.
 Air Compressor : 25 A, 2 nos.
 Ventilation Fan Starter : 25 A, 4 nos.
 Vokes Filter : 25 A, 4 nos.
 Jacket Water Heater : 80 A, 4 Nos.
 Lub Oil Module : 25 A, 4 nos.
 Tip Cooling Module : 15 A, 4 nos.
 HFO Booster : 200 A, 1 no.
 HFO Separator : 250 A, 1 no.
 Lighting Panel : 250 A, 1 no.
 Spare : 250 A, 2 nos.

CT/PT Panel

Potential Transformer (PT) : 6.6 kV/110 V, 200 VA, MITSUBISHI make
 Diff Transformer CT : 500/5 A, 20 VA, Class 1, NITECH make
 Diff Gen CT. : 500/5 A, 20 VA, Class 1, NITECH make
 CT. Rod : 1250A, ABB make

Registor Panel (3 nos.)

Neutral Grounding Resistor
 System Voltage : 6.3 kV
 Line to Neutral Voltage : 3637 V
 Initial Amp : 300 A
 Max Time on : 10 \diamond C
 Ohms @25°C : 12.1 Ohms
 Max Temperature Rise : 750 \diamond C
 Ground CT : 60/5 A, 15 VA, 5P5
 Protection/Metering CT : 500/5 A, 40VA, 5P10
 Diff Gen CT : 500/5A 20VA Class1

Earth Box

Ground CT : 60/5A ,15VA, 5P5, NITECH make

ALL **SERIOUS** OFFERED WILL BE CONSIDERED

24.) Make : Nihon Kokan (NKK), Japan

Model : GDF4335T07
 5000 kW (6250 kVA), 3450 V, 514 rpm, HFO
 Two (2) units available.
 New in 1995, 6300 hours used.....
 Price & Further details available on request.

25.) Make : Niigata, Japan

Model : 18V32CLX
 6200 kW (7750 kVA), 6.6 kV, 600 rpm, HFO
 Two (2) units available.
 New in 1998
 Price & Further Details available on request

26.) 480 MW (120MW X 4) Power Units

Technical data of Plant A

1. Steam turbine
Horizontal, Close couple, Reheating, Impulse :
Manufacturer: AEI (Associated Electrical Industrial Ltd.)
Output capacity:120MW
Series : H.P Case--- 11
 M.P Case---13
 L.P Case---6 double discharge
Rotary speed : 3000rpm
Main steam working condition before mail valve :124.1bar(1800bsi) at 1000°F;
Reheat steam working condition before reheat steam valve:23.9bar(346bsi) at 1000°F ;
Condenser vacuum : 848mBar at 77°F of circulating water temperature.
2. Extraction
H.P heater No. : 3
L.P heater No. :2+(gland, water cooler)
3. Condenser
Type : Double body, Rectangular,
Capacity :754,242Lb/Hr,
Pressure : 200 inch Mercury column(abs.),
Design cooling water temperature : 77°F
Water flow : 7000Gallon,
Face area : 80000²ft,
Cooling water pipe (brass); 1 inch out diameter,12200,
No. of air vent : 2
Speed of cooling water in pipe : 6.9ft/sec
Head lose of cooling water in pipe: 15ft in water-level gage
4. Auxiliaries of steam turbine
 - 4.1 Condensate pump
Horizontal,Centrifugal,2 Stages,
Manufacturer : Mather &Platt Ltd.,
Suction pressure :2 inch pump column (Abs.),
Total head;: 235 ft,
Capacity : 1170 Gallon/min,
Electrical motor : 3Phase,50 Hz, Squirrel-cage induction motor,
 Voltage—415V
 Rated current—170A
 Power—101kW (135 Horsepower)
 Speed---985rpm.
 - 4.2 Air pump
Type Rotary, Le-Blanc,
Capacity 80Lb/Hr,
Electrical motor : 3Phase,50 Hz,Squirrel-cage induction motor,
 Voltage—415V
 Rated current—140A
 Power—82kW (110 Horsepower)
 Speed---1465rpm.
 - 4.3 Cooling water pump
60 Inch, Sigel stage, Vertical, Pendant mounted, Mix flow, Impeller type,
Manufacturer : Mather & Platt Ltd.,
Head 40 Inch,
Flow rate (sea water) : 5.57M³/min (73500Gallon/min),
Pressure :1.3 Bar(18.4Lb/in²,
Electrical motor : 3Phase,50 Hz, Squirrel-cage induction motor,
 Voltage—3300V
 Rated current—2045A
 Power—1000kW (1340 Horsepower)
 Speed---300rpm.
5. Electrical equipment
 - 5.1 Generator
Double pole, Cylindrical rotor, Coaxial coupling, 3000rpm,50Hz ,3 phase ,
Manufacturer: AEI (Associated Electrical Industrial Ltd.)
Output capacity :120MW,

Power factor 0.8,
Stator voltage : 13800V Cooling way : Hydrogen cooling.

5.2 Mai transformer

Manufacturer:: ENGLISH ELECTRICITY (EE)
Rated capacity : 145MVA ,
Voltage ratio at no load :154.5/13.8kV,
Neutral point wiring (HV /LV Y/ Δ),

5.3 Unit transformer

Manufacturer:: ENGLISH ELECTRICITY (EE)
Rated capacity : 9MVA ,
Voltage ratio at no load :13.8kV/3.47kV,,
Neutral point wiring (HV /LV Δ /Y),

5.4 Plant transformer (HV transformer)

Manufacturer:: ENGLISH ELECTRICITY (EE)
Rated capacity : 15MVA ,
Voltage ratio at no load :132kV/3.435kV,,
Neutral point wiring (HV /LV Δ /Y),

6. Boiler

4 stage overheating, 1 stage preheating, Natural circulating, Vertical water wall, Oil fired type
Manufacturer:: ICL (International Combustion Ltd.)
Working pressure of steam drum :149.3Bar(2165Lb/in²) standard metering ,
Outlet pressure of over-heater : 131.0Bar (1900 Lb/in²) standard metering,
Outlet temperature of over-heater :1005°F (540.56°C) ,
Inlet pressure of pre-heater : 28.2Bar(410 Lb/in²) standard metering,
Inlet temperature of pre-heater :628°F (331°C) ,
Outlet pressure of pre-heater : 26.9Bar(390 Lb/in²) standard metering,
Outlet temperature of pre-heater :1005°F (540.56°C) ,
Gasifying ratio : 105.5kg/s(840000Lb/Hr) (379.80T/H),
Flow rate of pre-heater : 9.8kg/s(776000 Lb/Hr) (332.08T/H),
Oil consumption : 7.4kg/s (58720 Lb/Hr) (26.64T/H),
Boiler's efficiency at full load : 87.1% as environment temperature is 60°F ,

7. Boiler's auxiliaries

7.1 Induced draft fan

Double suction, Constant speed, Win type, Damper control type,
Manufacturer:: ICL (International Combustion Ltd.)
Head : 11.38 Inch (289.052mm) water column,
Working temperature : 148.9°C(300°F),
Capacity : 86.8 M³/s(1840000Ft²/min)(312480 M³/Hr),
Electrical motor (AEI): 3Phase,50 Hz, Squirrel-cage induction motor,
Voltage—3300V
Rated current—65A
Power—309kW (415 Horsepower)
Speed---980rpm.

7.2 Forced draft fan

Double suction, Constant speed, Win type, Damper control type,
Manufacturer:: ICL (International Combustion Ltd.)
Head: 13.92 Inch (335.28mm) water column,
Working temperature : 26.7°C(80°F),
Capacity : 60.0M³/s(127200Ft²/min)(216000 M³/Hr),
Electrical motor: 3Phase,50 Hz, Squirrel-cage induction motor,
Voltage—3300V
Rated current—56A
Power—216kW (350 Horsepower)
Speed---980rpm.

7.3 Flue gas circulating fan

Single suction, Constant speed, Damper control type,
Manufacturer:: ICL (International Combustion Ltd.)
Head : 7.59 Inch water column,
Working temperature : 310°C(590°F),

Capacity : 28.3M³/s(59900Ft²/min),
 Electrical motor: 3Phase,50 Hz, Squirrel-cage induction motor,
 Voltage—415V
 Rated current—155A
 Power—89kW (120 Horsepower)
 Speed---985rpm.

7.4 Water-feeding pump

Manufacturer : Mather & Platt Ltd.,

Head : 29.3Lb/in²

Feeding water temperature :121°C(249.5°F),

Capacity :111.5kg/s(885000Lb/Hr),

Feeding water pressure : 159.6Bar(2315Lb/ in²) standard metering,

Electrical motor (AEI): 3Phase,50 Hz, Squirrel-cage induction motor,

Voltage—3300V

Rated current—504A

Power—2535kW (3400 Horsepower)

Speed---2980rpm.

Running records of 120mw units

NO. of Unit	Time of Completion	Total Running Hours	Times of Hot Start	Times of Warm Start	Times of Cool Start	Total Start Times	Remark
T1	April,17,1969	101,052	999	416	260	1,675	
T2	Nov.,26,1969	102,506	1,025	459	234	1,718	
T3	Feb.,6,1971	87,631	1,497	487	272	2,256	
T4	Jul.,8,1971	83,999	1,456	465	270	2,191	

Price: 130 Million US\$

The price comprising the Following Packages:

- 1) Dismantling, Re-conditioning , Refurbishing , Repacking & Relocation .
- 2) Replacing all the 4 boilers with 4 brand new Boilers .
- 3) Transporting all the equipment & machinery to (CIF) Any Port . Owner have to pay for all local transporting charges from their Port to the Plant's location in their country and local duties.
- 4) Installing and Fabricating the 4 units of Second Hand Power Plant units Under 1 building structure (built by the Owner) until fully commissioning and generating of electricity at your plant location.
It will take about 9 to 12 months to fully complete the installation .
- 5) Standby 2 to 3 Engineers for at least 6 months to 9 months (during the Warranty Period) after the commissioning to make sure the plants are running properly.
- 6) To transfer technology and to oversee and hand over the plants to the Owner's local technicians and engineers during the 6 to 9 months of Commissioning of the plants.
- 7) Payment: To be discussed on the payment formula to be presented by the Seller.

Best regards

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