

TECHNICAL SPECIFICATIONS OF 125MW POWER BARGES

The project consists of two Barge Mounted Power Plants, each with 127.8MW Combustion Turbine Package. Technical specifications as detailed below:

The Barge dimensions are L 300Ft x W 90Ft x D14.8Ft (91.4M x 27.4M x 4.5M) and are built to BV (Bureau Veritas), or equal, Marine Classification Society. The Power Barge will be securely moored to a mooring site, allowing for continuous year round operation. All equipment will be suitable for outdoor installation and weather protected. Noise abatement measures are included. Box Beam Foundation of a proven design for Gas Turbine application will be installed. A comprehensive Fire & Gas Monitoring & Protection System is provided onboard. Power Take Off Structure & Fuel connection to shore has been allowed for.

The Combustion Turbine is Westinghouse W701DU design, built under license by Fiat Avio, upgraded from model TG50D5. It has dual fuel capability; Natural Gas and Liquid Fuel of various types. Nominal Power Output 127.8MW, heat rate 2,664 kcal/kwH (10,565 BTU/kwH) at ISO conditions, Base Load, Dry, Natural Gas.

The Turbine & Generator Package is currently available in Italy. It was previously installed in Italy with 30,000 running hours completed. After dismantling, it has been factory overhauled in 2009; zero hours rated and upgraded by the original manufacturer, through Turbocare (Ethos Energy), a unit of the Siemens Group. All major parts have been renewed or replaced as per manufacturer requirements. The units are ready for deployment and integration onto the Power Barge upon project confirmation.



Illustration: Typical Power Barge

TURBINE SPECIFICATIONS

1. Gas Turbine Westinghouse W701DU

- GT Engine -Dual Fuel Standard Combustion System
- Turbine Bearing
- Rotor Air Cooling System
- Upgraded DCS Control Package with all instrumentation, including Vibration monitors

3. Starting Package & Gearing

- Static Frequency Converter for GT start up
- Starting System Board and Transformer
- SSS Clutch & Gearing
- Turning Gear

5. Inlet Air System

- Inlet Manifold
- Filter Room
- Inlet Silencer

7. Mechanical Packages

- Common Lube Oil System for the Gas Turbine and Generator
- Gas Fuel System Skid
- Liquid Fuel System Skid
- Fuel Atomizing Air System
- Cooling Water Skid
- Water Injection Skid
- Compressor Water Wash Skid

9. Miscellaneous Systems

- Fire Fighting Systems for all Enclosed Spaces
- Fire & Gas Monitoring System
- Communication & CCTV System
- Maintenance & Special Tools

2. Generator (ABB) 140MVA, 15kV, 50hz

- Hydrogen Cooled Generator
- Rotor Jacking Oil System
- Hydrogen Oil Sealing System
- Generator Excitation System

4. Electrical Packages

- Generator Protective Relay Panel
- Generator Circuit Breaker & Neutral Cubicle
- Excitation Board & Transformer
- Insulated Bus Bar Duct to Generator terminals
- Station Transformers
- Motor Control Centre & Lighting Boards
- Battery Charger with Batteries and UPS

6. Exhaust System

- Horizontal Diffuser
- Silencer
- Vertical Stack with Diverter Box

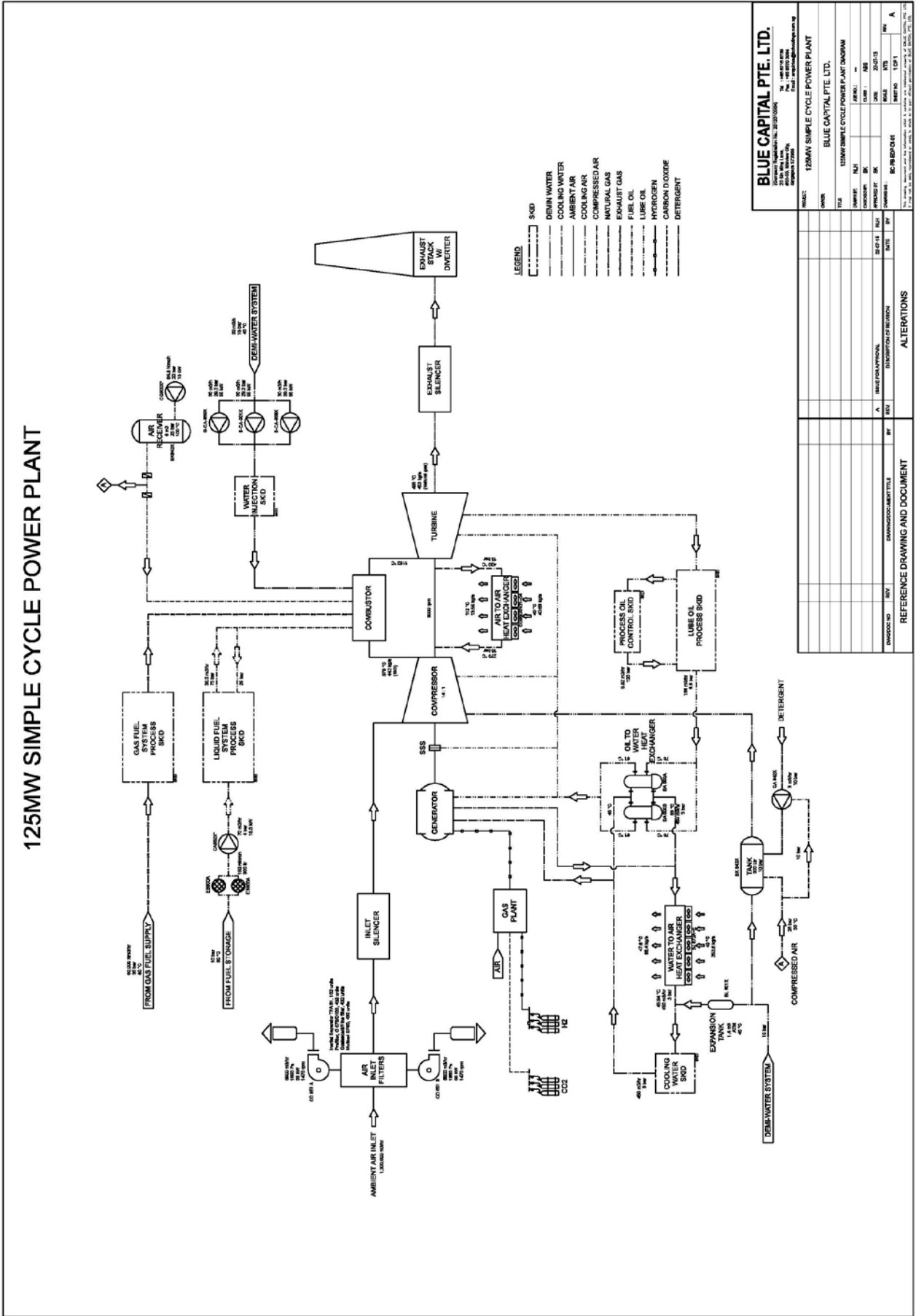
8. Cooler Assemblies

- Air to Air Cooler for Rotor Cooling
- Water to Air for Water Cooling System
- Oil to Water Cooler for Lube Oil Cooling

10. Enclosures with Ventilation & Lighting

- Gas Turbine Enclosure
- Generator Enclosure
- Mechanical Package Room
- Electrical Package Room
- Control Room
- Battery and DC Distribution Room

PROCESS DIAGRAM OF POWER PLANT



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PROJECT: 125MW SIMPLE CYCLE POWER PLANT

OWNER: BLUE CAPITAL PTE. LTD.

TYPE: 125MW SIMPLE CYCLE POWER PLANT DESIGN

DESIGNER: N/A

CLIENT: N/A

PROJECT NO.: N/A

DATE: 20/01/13

SCALE: N/A

REV: N/A

BY: N/A

CHECKED BY: N/A

DATE: N/A

APPROVED BY: N/A

DATE: N/A

NO.	DATE	DESCRIPTION OF REVISION	BY	APP'D BY
1		ISSUE FOR APPROVAL		
2		FOR APPROVAL		

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1		ISSUE FOR APPROVAL		
2		FOR APPROVAL		

REFERENCE DRAWING AND DOCUMENT

ALTERATIONS

POWER BARGE GENERAL ARRANGEMENT (ILLUSTRATION)

