

13.4 MW Combined Heat and Power (CHP) Plant

The CHP plant was installed and commissioned in 1997 providing steam and electrical power. Due to economic factors and internal rationalisation of production assets the owners have now deemed this excellently maintained Plant surplus to their requirements.

Major items of the plant comprise of: one Alstom Tornado Gas Turbine Package, one Aalborg Waste Heat Recovery Boiler and one Siemens NG5 Steam Turbine Package. The Tornado Turbine which was overhauled in 2006 is capable of producing a minimum of 6.2 MW of electrical power at 10,500 volts.

The Aalborg Waste Heat Recovery Boiler is equipped with auxiliary firing thereby having the capacity to operate independently during Gas Turbine shut down periods.

Utilizing the Eclipse auxiliary burner the unit is capable of producing steam up to 45t/h.

The Steam Turbine Generator is rated to produce an additional 7.2 MW of electrical power at 10,500 volts.

The simplified process involves the exhaust heat from the Tornado Gas Turbine being passed through the Aalborg Waste Heat Recovery Boiler, which in turn produces steam for the production processes as well as for the Steam Turbine Generator.

The Tornado Gas Turbine, which is of a robust manufacture providing excellent full and part load operating efficiency, is configured for operation on natural gas and has accumulated very few running hours since last overhaul.

The Tornado Gas Turbine Package has been serviced throughout its operational life under a maintenance contract provided by the Original Equipment Manufacturer (OEM).

The Heat Recovery Boiler and Steam Turbine have also been subjected to regular inspections.

A full compliment of Operational Manuals, together with original documentation pertaining to service records/ inspections is available for perusal to all interested parties.

Since the CHP plant was decommissioned in 2006 the equipment continues to be well maintained and preserved. Conservation procedures include regular barring of the Tornado Gas Turbine to ensure the preservation of internal components.

The complete CHP Plant is available for immediate purchase.

Co-generation plant, combined-cycle

COUNTERPRESSURE STEAM

45 t/h , 0,25 MPa, 200 °C

HIGHPRESSURE STEAM

45 t/h , 6 MPa, 485 °C

COMBUSTION GAS

475 °C , 62MW10kV

HIGHPRESSURE BOILER GENERATOR

7,2 MW, 10 kV

STEAM TURBINE GENERATOR

6,2 MW, 10 kV

GASTURBINE / AIRCOMPRESSOR

1 x TORNADO GAS TURBINE GENERATION PACKAGE

Turbine Type : Tornado
Power Rating ISO : 6.2 MW
Efficiency : 31.5%
Fuel Configuration : Natural Gas
Acoustics : Enclosure with CO2 Fire Protection
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Main Gearbox

Manufacturer : GEC / Alstom
Type : Planet
RPM : 1500

Alternator

Manufacturer : GEC / Alstom
Power Output kVA : 6871
RPM : 1500
Hertz : 50 Hz
Insulation Class : F
Power Factor : 0.9
KW : 6200
Amps : 378
Volts : 10,500

Balance of Plant

Turbine Control System : PLC Rustronic Mark 2
Air Filtration : Cullum Pulse Filters
Air Ducting : GEC/Alstom supply
Exhaust : GEC/Alstom supply
Fire & Gas System & Detectors : Howfire

1 x WASTE HEAT RECOVERY BOILER

Manufacturer : Aalborg
Type : AX4 - WHR
Auxiliary Burner : Eclipse
Steam Production : WHRB with AF firing; 11t/h unfired and 45t/h AF, 60 Barg, 485 Deg C

1 x STEAM TURBINE GENERATION PACKAGE

Manufacture : Siemens
Type : NG 5
Output : 7.2 MW