

**1. SCOPE OF WORK****1.1 SCOPE OF SUPPLY AND SERVICES****A) SCOPE OF OFF-SHORE SUPPLY**

Design, Engineering, Manufacture, Quality Assurance, supply, transportation upto CIF port for the following required for the Cogeneration Plant :

**1. Gas Turbine Generator Equipment ( GT10 )****Part 3****Gas Turbine - Principal components**

300

Gas Generator, ABB STAL GT 10

- Compressor inlet plenum
- Compressor inlet casing
- 10 stage, electro-beam welded compressor rotor, inner casing with vane carriers forming air path, outer casing and 2 top-mounted bleed valves for air bleed furring start-up and shutdown.
- Central casing with diffuser for compressor discharge air.
- 1 gas torch igniter, incl. 2 high energy spark plugs and 1 UV detector.
- 1 annular combustion chamber incl. burners and 1 UV detector.
- 2 stage gas generator turbine, bolted to the electro-beam welded rotor.
- Turbine casing with gas path and 2 stages of gas generator turbine vanes.
- Thrust bearing (tilting pad, forced lubrication), located in the turbine casing.
- Journal bearings (tilting pads, forced lubrication).
- Vibration detection system with accelerometers.

- Bearing temperature transducers.
  - Drain valves (manually operated) from Compressor inlet plenum, LP bleed cavity, HP bleed cavity and CC casing.
  - Instruments for control, alarm and trip.
- 310 Power Turbine, ABB STAL GT10, 7700 rpm (nominal speed)
- Power turbine casing with gas path and 2 stages of power turbine vanes.
  - stage power turbine, bolted to the power turbine shaft.
  - Thrust bearing (tilting pad, forced lubrication) combined with radial journal bearing (four lobe, forced lubrication), located in the power turbine exhaust casing.
  - Radial journal bearing (four lobe, forced circulation), located in the power turbine exhaust casing.
  - Vibration detection system with accelerometers.
  - Speed transducers, key-phase and axial position transducer.
  - Bearing temperature transducers.
  - Drain valves (manually operated) from PT casing and Exhaust casing.
  - Instruments for control, alarm & trip.
- 330 Load Gear Box ( 7700 / 1500 rpm )
- High speed side coupling.
  - Load gear box of double helical design
  - Low speed side, internal torsional shaft with stiff flange coupling.
  - Bearings

- Vibration detection system with accelerometer.
- Bearing temperature transducers and gauges.

380 Mounting Details

- Pendulum supports, spring loaded supports, fix point support and side support for the gas generator and the power turbine, down to the main base frame.

390 Lagging of the Gas Turbine Unit

- Lagging of hot surfaces for personnel safety and minimum heat dissipation, as well as lagging for noise reduction.

Part 4 Ancillary systems

402 Seal air system for bearing #2, incl. 1 x 100% water cooler.

403 Electric Starting & Bearing System ( 200 kW )

- Electric start and barring motor.
- Static Frequency Converter ( SFC )
- Driver shaft with bearing and SSS-type clutch.

410 Lubrication Oil System (water-cooled) for the Gas Turbine, the Load Gear Box and the AC Generator.

- Lube. oil tank with heaters.
- Supply & discharge piping for the lube. oil system
- 1 x 100% AC/DC driven oil mist. fan
- 3 x 50% AC/DC driven lube. oil pumps for the low pressure circuit and 3 X 50% AC/DC driven lube. oil pumps for the high pressure circuit.

These pumps constitute:

3 independent 50% pump groups, each group consisting of one low pressure and one high pressure