

B.02.06.01 ELECTRICITY CONSUMPTION

An estimation of the electricity consumptions within the different facilities of the project is presented herein. The total auxiliary load for the facility is estimated to be 11.5 MW.

Electricity consumption of the FSU: 1.5 MW

It is estimated that the normal operational FSU electrical power demand will be approx. 1.5MW. There is an on-board back up auxiliary diesel generator which could supply this power in a failure of the ship to shore link or a disconnection event, rated at 2MW. The main electrical energy consumers of the FSU can be classified into the following main groups:

1. Machinery auxiliaries: These include FSU services power demands such as firefighting, potable water, cathodic protection system, instrumentation and service air system and dehydration of the preserved equipment.
2. LNG Cargo handling and transfer pumps including associated auxiliaries.
3. Deck machinery such as cranes, hoists and personnel elevators required for maintenance activities.
4. Heat Ventilation and Air Conditioning (HVAC) of the FSU.
5. FSU crew accommodation and lighting electrical power demands.

In the event of loss of incoming power triggering an emergency shut the FSU Emergency Diesel Generator (EDG) shall automatically operate. The FSU EDG is rated at 0.45 MWth.

Electricity consumption of the LNG Regasification plant: 3 MW

The LNG regasification plant will consume an approximate power supply of 3MW. The major electrical power consumers are listed below:

1. Boil-off gas compressors.
2. LNG cryogenic pumps.
3. Water/Glycol and propane pumps.
4. Auxiliary cooling seawater pump.
5. LNG regasification building services and HVAC.
6. Plant auxiliaries including lighting, services power

In the event of loss of incoming power triggering an emergency shut of the plant the Regas Emergency Diesel Generator (EDG) shall automatically operate. The regas EDG is rated at 0.5 MWth.

Electricity consumption of the CCGT plant: 6 MW

The new CCGT will generate approx. 211MWe of gross power output at reference conditions of which around 6 MW will be consumed within the power plant auxiliaries. The CCGT net power output at reference conditions will be 205MWe. There is an emergency diesel generator that would be used to safely shut down the plant, rated at 800kW.

The major CCGT power plant auxiliaries are:

1. Feed-water pumps.
2. Condensate extraction pumps.
3. Main cooling seawater pump.
4. Auxiliary closed loop water pumps.
5. ST and GT auxiliary systems (Lubrication, Hydraulic).
6. CCGT buildings services and HVAC.
7. Plant auxiliaries including lighting, services power

In the event of loss of incoming power triggering an emergency shut of the plant the CCGT Emergency Diesel Generator (EDG) shall automatically operate. The CCGT EDG is rated at 2.4 MWth to safely shut down the plant.

[Additional thermal generating plant installed at the facility](#)

In addition to the above there are auxiliary steam generators (boilers) on the FSU which will be in use during ship to ship off loading events to run the on board BOG compressors. These are fuelled by BOG and have a rated gross heat input, at MCR, of 16.25 MWth. And as stated earlier these will only be used during STS operations and storm mooring events and will have an estimated running time of 28 days per year.

The FSU will arrive in Malta under its own steam using the existing main boilers which have a thermal rating of 58.5MWth each. These will then be decommissioned and replaced by the new auxiliary boilers discussed above..

Refer to section B2.1 for tabulated details of the thermal ratings of the facility's equipment.