



Commissioned in 2017

# 67 MW SAINT LOUIS POWER STATION PORT LOUIS, MAURITIUS



# SAINT LOUIS POWER STATION REDEVELOPMENT

In line with the continued strategy to renew and develop the power generation capacity in Mauritius, the government-owned utility Central Electricity Board (CEB) decided to further increase its capacity. This led to the decision to redevelop the Saint Louis Power Station, located outside the town of Port Louis.

The original power plant was redeveloped by Burmeister & Wain Scandinavian Contractor (BWSC) in 2004/2006, which included demolition of the existing power hall and replacement with a modern state-of-the-art medium speed diesel power station.

In March 2016, BWSC was awarded the second redevelopment turnkey contract for the Saint Louis Power Station.

The contract comprised all services for engineering, procurement and construction (EPC) of the power plant extension, including all required training of personnel, transportation of equipment and start-up of the plant.

## Fast track EPC

Immediately after effective contract, BWSC commenced works at the Saint Louis site together with local civil works sub-contractor, PAD & CO.

BWSC's scope included demolition of existing buildings and foundations, site clearance, construction of a complete new powerhouse creating room for four Wärtsilä 18V46 HFO diesel

generation sets of a total capacity of 67.4 MW, including all necessary auxiliaries. The scope also comprised supply and erection of a 66 kV gas insulated substation (GIS), a tank farm of two 1,000 m<sup>3</sup> heavy fuel oil storage tanks and a fuel oil treatment plant.

The Saint Louis site is a brown field site which has been used for power generation since 1954. Special attention was therefore given to decommissioning and clean-up of the site before start-up of the project.

Special consideration was also given to optimisation of the limited space on site, as the redevelopment needed to be within the boundaries of the existing plant. It was crucial to CEB that the existing plant remained in operation during the entire project, and that the existing plant maintained interconnections with the new extension to ensure redundancy.

## Genset delivery

BWSC coordinated the complete shipment and local transportation of the four Wärtsilä 18V46 high-performance, medium-speed, 4-stroke HFO diesel engines, each with separate step-up transformers, switchgear and separate auxiliary transformers. BWSC was responsible for the shipment of the gensets from Europe to site, installation on the foundations, connection to auxiliary systems as well as commissioning and testing.

*Gas insulated 66 kV switchgear*



**Improved environmental impact**

The location of the power station close to residential areas prompted demanding requirements from CEB in regard to noise and emissions mitigation measures. The Saint Louis Power Station Redevelopment is therefore equipped with modern features optimised for low noise and air emissions, waste heat recuperation and waste incinerations amongst others.

The new plant has replaced old and less efficient diesel generating sets, which significantly increases efficiency and results in a reduction of CO<sub>2</sub> emissions, compared to that of the replaced power plant.

The plant is further designed as an ultra-low noise facility. The powerhouse and the GIS buildings are steel structures with cladding ensuring 40 dB noise reductions. Other buildings containing equipment are steel structure shelters, block wall buildings or containerised units.

BWSC has also designed and constructed a 10 m high and 100 m long noise abatement wall ensuring a low noise level of less than 55 dB in the residential area.



*Engine transport through the centre of Port Louis*



Four Wärtsilä 18V46 high-performance, medium-speed, 4-stroke HFO diesel engines



*Service tank farm – diesel oil, heavy fuel oil, lubricating oil and sludge*



*Noise abatement wall*

**BWSC projects in Mauritius**

BWSC has a long-lasting connection to Mauritius due to our presence as turnkey supplier of power plants over the last 20 years. During this period, BWSC has supplied 10 turnkey power plants to Mauritius and the state-owned electricity company Central Electricity Board (CEB).

The numerous contracts in Mauritius confirm the CEB’s confidence in BWSC and we appreciate the number of times CEB has appointed BWSC as preferred supplier of high quality power stations.

**Power Station**

Saint Louis (G10-G13)	67 MWe	2016/2017
Fort Victoria, phase 2	60 MWe	2011/2012
Pointe Monnier	2.5 MWe	2011/2012
Fort Victoria, phase 1	30 MWe	2009/2010
Saint Louis (G7-G9)	41 MWe	2004/2006
Pointe Monnier	4 MWe	2003/2004
Port Mathurin	1 MWe	1998/1998
Port Mathurin	1 MWe	1996/1997
Fort George	31 MWe	1995/1997
Port Mathurin	1 MWe	1994/1996

# SUMMARY

## Handover to client

On 5 October 2017, Central Electricity Board took over the redeveloped Saint Louis Power Station, now extended with G10, G11, G12 and G13. This was announced following 30 days of reliability test and well ahead of contractual take over date. The power station was constructed in less than 18 months.

## G10 to G13 powerhouse



## Turnkey EPC (G10-G13)

### Contract:

Effective contract:..... March 2016  
Handover:..... October 2017  
Scope capacity: .....67 MW  
Engines, make:..... Wärtsilä  
type:.....4 x 18V46, 4-stroke  
speed:.....500 rpm  
Gas insulated switchgear:..... Siemens

### Technical data:

#### Alternators

Make:.....ABB  
Type:.....AMG 1600  
Voltage/frequency: ..... 11 kV/50 Hz  
Rated output:..... 21,345 kVA

#### Exhaust gas boilers/auxiliary boiler

Make:.....Alfa Laval Aalborg  
Type:.....Fin-tubed, AV-6N/BH-1500L  
Heat capacity (hot water): ..... 1,430 kW for each of the four  
exhaust gas boilers/1,000 kW  
for the oil-fired auxiliary boiler

#### Step-up transformers (one per engine)

Make:.....CG Power Systems  
Type:..... Oil-immersed, ONAN (oil natural, air natural) cooled  
Ratio:..... 11 kV/66 kV  
Rated output:.....23 MVA

#### Control system

Make:.....Rockwell Automation  
Type:..... FactoryTalk View SE

#### Powerhouse building

Supplier: .....Aquila Construction A/S  
Length:..... 45 m  
Width:..... 42 m  
Height:..... 15 m  
Overhead crane, engine hall:.....32 tonnes  
Overhead crane, mechanical annex: ..... 5 tonnes  
Civil works contractor: .....Pad & Co Ltd.

#### Stack

Supplier: .....Steelcon  
Height:..... 45 m  
Number:..... 2 pcs