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**25MW POWER PLANT**  
TO SUPPLY CASSAQUE'S WATER PUMPING STATION







## 1 GENERATOR SETS

The generation plant contains 18 HIMOinsa gensets (nine model HMW-1785-T5 units and nine model HMW-2200-T5 units).

## 2 STEP-UP TRANSFORMERS

Transformers with biodegradable coolant have been installed. Each transformer contains a temperature and pressure detection system. In total, nine 1600kVA and nine 2000kVA transformers were installed, with a transformation ratio of 15/0.4 kV/ 50 Hz.

## 3 MV SWITCHBOARDS

The switching centre channels all the transformers' MV power outflows, acting as a common busbar. Two containers have been installed to group together the transformers' 18 medium voltage outflows, protect the plant, make measurements and act as the synchronization point with the load or with the grid in the future.

## 4 SUBSTATION ANCILLARY SERVICES

These comprise a 400KVA transformer with a transformation ratio of 15/0.4kV/50 Hz. A 400KVA genset was also installed to provide service when the generation plant is not running. An ATS switchboard was installed inside the control container, enabling automatic switching in the event of a breakdown in the power supply.

## 5 CONTROL ROOM

It houses all IT and control equipment for the 20MW thermal plant. From here, gensets, cells, fuel management, power exports and ancillary services are controlled.

## 6 FUEL STORAGE SYSTEM

This is made up of 11 double-walled 50m³ deposits for outside use. Nine of these 11 deposits are used to receive fuel and two are used to supply fuel (one for each branch of nine gensets).

## 7 ADMINISTRATION AND SOCIAL UNIT

The administration of the thermal plant and all employee services are carried out in this unit, located at a strategic point within the plant.

## 8 LIGHTING

This comprises lighting for the perimeter of the plant, with 10 single lighting towers, and interior lighting, with 10 double lamp lighting towers, all constructed of metal and providing sufficient illumination for the whole plant.



The project is designed to generate 25MW PRP and deliver 20MW of continuous power

PROJECT DESCRIPTION  
Award date: May 2012 | Project start date: 30/10/2012  
Project completion date: 25/07/2013  
Provisional delivery date to MINEA: 30/09/2013



Fuel Storage System 550 m3



Medium Voltage (MV) Switching Centre



Ancillary Services



Administration And Social Unit



MV Switchboards



Control Room

### PURPOSE OF THE PROJECT

The main objective of the project is the construction and start up of a substation to supply power to the Cassaque pumping station. This will provide a supply of good quality water to the town of Zango IV. The project is designed to generate 25MW PRP and deliver 20MW of continuous power to the grid, with 15,000 volts at 50 Hz.

### BENEFITS OF THE PROJECT

The Cassaque project will improve living conditions for the people of Luanda, ensuring a regular supply of clean water. Water supplied by the Cassaque pumping station accounts for 60% of treated water for public consumption in Luanda. HIMOinsa's engineering team has developed a 'Plug & Play'

system which gives the Ministry flexibility to increase the plant's generation capability, dismantle it as necessary and install power generating modules in any part of the country. The project was equipped with the most up-to-date technology and a highly-qualified technical team was onboard from the outset. HIMOinsa also organised a training programme for local personnel on the use of the technical tools required for plant maintenance to ensure quality and professionalism in the technical control of the substation.



The Angolan Ministry of Energy and Water (MINEA) appointed HIMOinsa, the internationally-recognized generator set manufacturer, the construction of 25MW energy plant to supply the Cassaque pumping station in the town of Zango IV on the Kwanza river.