

Shoaiba II, Saudi Arabia

1200 MW



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10 HRSGs particularly well adapted to turbines burning light crude oil

A 1200 MW Combined Cycle for the Saudi Electricity Company

Project Description

Saudi Arabia Kingdom's population is characterized by very rapid growth. Consequently the electricity demand grows very fast, reaching more than 6% in 2011. The country therefore requires additional power generation to cope with this power demand. Shoaiba II is a new combined cycle power plant due to serve the Western region of the kingdom, near Jeddah. The Saudi Electricity Company (SEC) opted for crude oil, instead of conventional natural gas. This new plant of 1200 MW is a green field power plant composed of two blocks of 5 gas turbines and 5 HRSGs each. Gas turbines are Siemens STG6-2000E run on crude oil and low NOx burners.

The Contract

Following an international tender in September 2011, Daelim International Company (DIC) from South Korea was chosen by SEC to be the EPC Contractor of this project. Daelim then placed the order for the HRSGs to John Cockerill Energy in December 2011. John Cockerill designed and supplied ten vertical HRSGs, with hot ducting externally insulated, on-line sootblowers, valves, instrumentation, the structure with all access platforms and gas by-pass (in option).

John Cockerill's long lasting experience and its high-performance vertical boilers, particularly well adapted to gas turbines burning crude oil or heavy fuel oil, were determining factors in the choice of the boiler specialist. This contract brings the quantity of John Cockerill HRSGs installed in Saudi Arabia to 37.

Plant Operation

The Shoaiba II combined cycle power plant is designed for semi base load, requiring daily start-up.

Gas Turbines

- 10 Siemens SGT6-2000E
- Fuel: light crude oil

Heat Recovery Steam Generators

- 10 vertical unfired John Cockerill HRSGs
- 1 pressure level + LP saturated steam production
- Boiler Stress Evaluator
- By-pass stack (optional)

Performances

GAS	°C	t/h	
Inlet	540	1155.6	
Outlet	173	1155.6	
STEAM	°C	barA	t/h
HP	523	75	142
LH	149	5	29

Schedule

- Contract Award December 2011
- Start (first) boiler erection December 2012
- Hydrotest Block 1 November 2013
- Hydrotest Block 2 January 2014
- 1st HRSG ready for PAC July 2014
- Full Commercial Operation August 2014



CMI becomes John Cockerill

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