

Bouchain, France

605 MW



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 **John
Cockerill**

Bouchain, France | 605 MW

A revolutionary combined cycle for EDF

Project Description

The Bouchain project (Northern France) was part of a large scale development program initiated by Electricité de France (EDF) with the combined power plants of Blénod (430 MW) and Martigues 5 & 6 (930 MW) for which John Cockerill supplied the HRSGs. The aim of this program was to strengthen base/semi-base capacity with improved technical and environmental performances.

The existing coal plant of Bouchain has then be replaced by a new single-shaft combined cycle.

The plant of Bouchain is a reference plant whose performances are exceptional. With a capacity of 605 MW, this power station is equipped with the latest GE 9HA.01 gas turbine and the latest generation of John Cockerill boiler. The plant provides an outstanding worldfirst in fuel efficiency of 62.22%, which has been registered in the Guinness World Records book.

The Bouchain plant has also a rapid response time (100% load after 30 minutes) and a high operational flexibility. It is designed for heavy concept has a highly standardized design and allows the integration of renewable energy in the combined cycle (solar or wind).

The Contract

In March 2012, GE awarded an order to John Cockerill for the first HSRG to be installed in this new combined cycle concept. John Cockerill designed and supplied one horizontal HRSG, triple pressure plus reheat. Erection and commissioning were not within John Cockerill's scope.

Plant Operation

With a rapid response, the plant of Bouchain is capable of one hour warm starts from around the mid-point of the warm period, and two-hour cold starts. The plant is designed for heavy cycling. The John Cockerill HRSG's high pressure drum provides the storage volume necessary for successful start of the back-up boiler feed water pump in the event of an on line pump failure.

Gas Turbine

- GE 9HA.01
- Fuel: natural gas

Heat Recovery Steam Generator

This latest generation John Cockerill horizontal flow boiler is triple wide, triple pressure drum-type designed to ASME standards, with reheat and SCR provision.

John Cockerill designed a HRSG with very demanding requirements: high temperature and heavy cycling. The John Cockerill HRSG is equipped with stainless steel tubes for the superheater and the reheater.

Performances

GAS	°C		t/h
Inlet	623.1		2709
STEAM	°C	barA	t/h
HP	584.3	157.4	325
IP	319.6	29.5	56
LP	315.1	5	49
Reheat	583	28.7	376

Schedule

- Contract Award
- Start of boiler erection
- PAC

July 2012
January 2014
May 2016

