

Grati II, Indonesia

450 MW



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Grati II, Add-on project for P.T. Indonesia Power

Project Description

In 2016, the decision was taken to transform the existing open cycle of Grati (Indonesia) in a combined cycle power plant, adding heat recovery steam generators (HRSGs) and a steam turbine to the installation so as to boost the plant capacity and bring a solution to a shortage of electricity production in Java. The Grati plant located on the island of Java, at 90 km east of Surabaya, is operated by PT Indonesia Power, a sister company of PLN, the Indonesian utility, that has a monopoly on electricity distribution in Indonesia.

This project is part of a vast development plant of 35 GW for new combined cycle and coal power stations launched between 2015 and 2017 in Indonesia. The Indonesian government had the will to increase its electricity production capacities. Other projects were decided in the frame of this huge plan. There had been no investment in combined cycles for years in Indonesia due to a lack of gas, that used to be exported abroad but a change has occurred around 2015.

For the record, John Cockerill Energy had designed and supplied 3 vertical HRSGs for the same site in 1994 for a consortium composed by Mitsubishi and Siemens. These 3 John Cockerill boilers are still in operation today.

The Contract

In January 2017, Doosan Heavy Industries, EPC branch of the Doosan Group (Korea), entrusted John Cockerill Energy with an order for the design and supply of 3 outdoor vertical dual pressure HRSGs. They have to be installed on the site of Grati (Indonesia) behind M701D2 gas turbines of the Mitsubishi brand. John Cockerill will also supply gas by-pass diverters.

This order was Doosan Heavy Industries's first one awarded for HRSGs outside of their own Group.

This add-on project and the new John Cockerill HRSGs allow the Grati power plant to improve its production capacity from 300 MW to 450 MW.

Plant Operation

The Grati combined cycle power plant is designed for semi base load.

Gas Turbines

- M701D2 gas turbines
- Fuel: natural gas

Heat Recovery Steam Generator

- 3 vertical John Cockerill HRSGs
- Dual pressure
- Natural circulation

Performances

GAS		°C	kg/s	
Inlet		539.3	392	
Outlet		97	392	
STEAM		°C	BarA	t/h
HP		525	130	169
LP		274	6.3	51.15

Schedule

- Contract Award January 2017
- Start (first) boiler erection December 2017
- First Firing December 2018
- Full Acceptance Certificate February 2020



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