# Grati II, Indonesia

**450 MW**

**johncockerill.com/en/energy**

John Cockerill

# Grati II, Indonesia | 450 MW

## Add-on project for P.T. Indonesia

## Context of the Project

In 2016, the decision was taken to transform the existing open cycle of Grati (Indonesia) in a combined cycle power plant, adding heat recovery steams 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 Surubaya, 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 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 are installed on the site of Grati (Indonesia) behind M701D2 gas turbines of the Mitsubishi brand. John Cockerill also supplied gas by-pass diverters.

This HRSG order was Doosan Heavy Industries' first one awarded out 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

- Mitsubishi M701D2
- Fuel: natural gas

## Heat Recovery Steam Generators

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

## Performances

| Gas | °C | | kg/s |
|---|---|---|---|
| Inlet | 539 | | 392 |
| Outlet | 97 | | 392 |
| **Steam** | **°C** | **barA** | **t/h** |
| HP | 525 | 130 | 169 |
| LP | 274 | 6.3 | 51 |

## Schedule

| | |
|---|---|
| ▪ Contract Award | January 2017 |
| ▪ Start (first) Boiler Erection | December 2017 |
| ▪ First Firing | December 2018 |
| ▪ Full Acceptance Certificate | February 2020 |



**John Cockerill Energy**
Tel : +32 4 330 22 41 - Belgium
heat.recovery.systems@johncockerill.com • **johncockerill.com/en/energy/heat-recovery-steam-generators**