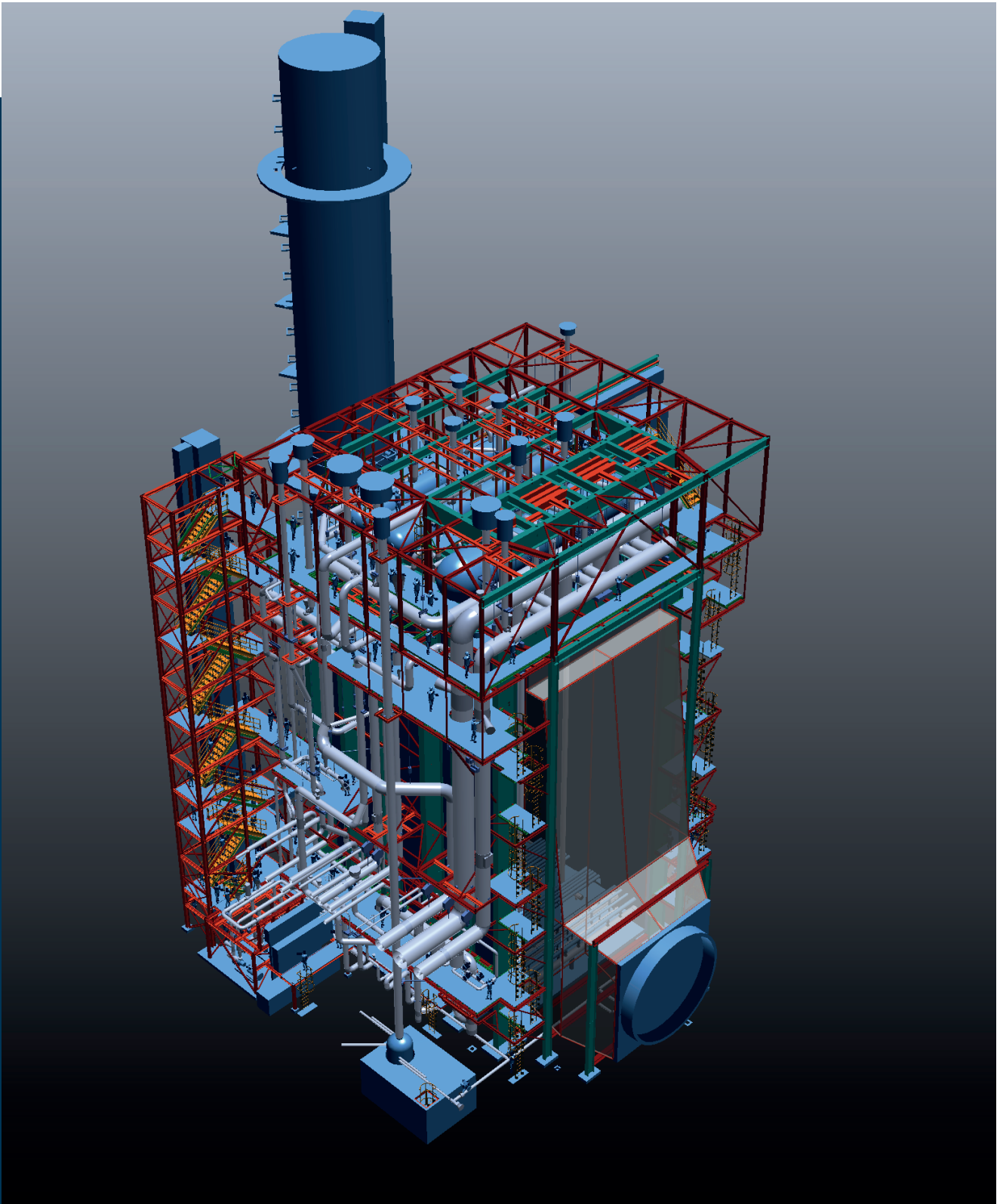


Keppel Sakra, Singapore

**600 MW**



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# Keppel Sakra Cogen, Singapore | 600 MW

First John Cockerill HRSG associated to a Class J Mitsubishi turbine in 50 Hertz

## Context of the Project

The project, located on the Jurong Island (south west of Singapore), is being developed by Keppel Energy Pte Ltd, a wholly owned subsidiary of Keppel Corporation Ltd. that provides utility services in power generation.

John Cockerill and Keppel Energy have maintained good commercial relationships for a long time. Two John Cockerill vertical HRSGs have been in operation on this site since 2007.

In 2022, our After-Sales teams carried out on this site the engineering and upgrade of 2 HRSGs of another brand. Our experts designed, supplied and manufactured 120 new harps and replaced the old damaged ones during a two month shipyard.

## The Contract

The final customer, Keppel Sakra Cogen Pte Ltd, awarded the EPC contract to the consortium between Mitsubishi Power Asia Pacific and Jurong Engineering (JEL).

This consortium entrusted John Cockerill for the design and supply of one heat recovery steam generator, triple pressure with reheat to be installed downstream of a M701JAC gas turbine, one of the largest gas turbine designed by Mitsubishi Power.

John Cockerill is in charge of the design, erection and commissioning of the HRSG.

## Plant Operation

This cogeneration plant was designed to be able to operate on a natural gas-hydrogen mix. Our boiler will produce steam for industrial processes in the energy and chemistry.

Its low emission rate and great operation flexibility makes this plant the most efficient power station in operation in Singapore.

It will be able to save up to 220,000 tons of CO<sub>2</sub> compared to Singapore's average operational efficiency for equivalent power. These CO<sub>2</sub> savings represent the removal of approximately 47,000 cars from the roads per year.

## Gas Turbine

- M701JAC
- Fuel: natural gas

## Heat Recovery Steam Generator

To withstand ultra-high steam temperatures of 600°C and above, our exchangers will be made of stainless steel. Our engineers have improved their design to meet an ever more demanding market in terms of operating conditions. This demonstrates John Cockerill's ability to adapt the technicality of its HRSGs to the needs of our time.

- 1 horizontal John Cockerill HRSG
- Triple pressure level + reheat
- Design ASME/PED stamped

## Performances

GT Outlet Data	°C		kg/s
Outlet	700		729
Steam	°C	barA	t/h
HP	579	167	435
IP	355	38	30
LP	266	6	41
Reheat	579	37	449

## Schedule

- Contract Award February 2023
- Start Boiler Erection January 2024
- Provisional Acceptance Date December 2025

John Cockerill Energy

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