

Outline of Kawasaki Thermal Power Station

1. Outline of power station

(1) Address: Chidori-cho 5-1, Kawasaki-ku, Kawasaki-shi

(2) Plant Chief: Hiroshi Sato

(3) Site Area: Approx. 280km²

(4) Output and generation efficiency:

- Unit 1 at Group 1 Output: 500MW, Generation efficiency: approx. 59%, MACC
- Unit 2 at Group 1 Output: 500MW, Generation efficiency: approx. 59%, MACC
- Unit 3 at Group 1 Output: 500MW, Generation efficiency: approx. 59%, MACC
- Unit 1 at Group 2 Output: 500MW, Generation efficiency: approx. 59%, MACC
- Unit 2 at Group 2 Output: 710MW, Generation efficiency: approx. 61%, MACC II
- Unit 3 at Group 2 Output: 710MW, Generation efficiency: approx. 61%, MACC II

(5) Fuel: LNG (Liquefied natural gas)

(6) Outline of Unit 3 equipment at Group 2:

- Power generation system: 1,600°C-class combined cycle power generation (MACC II)
- Thermal efficiency: Approx. 61% (lower heating value)*
- Gas turbine: Open and simple cycle uniaxial type
- Air compressor: Axial compressor
- Exhaust heat recovery boiler: Natural circulation type with exhaust heat recovery and triple pressure reheat systems
- Steam turbine: Reheat and combined pressure condensation type with single current exhaust system
- Starter: Thyristor starting method
- Generator: Horizontal cylindrical revolving field type three-phase AC synchronous generator
- Smoke treatment equipment:
 - Fuel gas NOx equipment: Dry ammonia catalytic reduction method
 - Chimney: 85m, three cylinders assembly type

*Currently, rated output has been reduced from 710MW to 685MW and generation efficiency from approx. 61% to approx. 59% when comparing with the original design. This is due to emergency construction work based on another company's defective steam turbine.

2. History of Construction

July 1961	Unit 1 (output: 175MW, Fuel: Coal)	Started operation
November 1968	Units 1 to 6 (Total output: 1,050MW, Fuel: Coal)	Started operation
August 1996	Groups 1 and 2	Construction plan was announced
August 18, 1999	Group 1	Construction plan was approved
October 1, 1999	Group 1	Started construction
March 27, 2006	Units 1 to 6	Terminated
June 15, 2007	Unit 3 at Group 1	Started operation
June 4, 2008	Unit 2 at Group 1	Started operation
February 5, 2009	Unit 1 at Group 1	Started operation
July 1, 2009	Unit 1 at Group 2	Notification of construction plan
October 6, 2009	Unit 1 at Group 2	Started construction
January 17, 2013	Units 2 and 3 at Group 2	Notification of construction plan
February 1, 2013	Unit 1 at Group 2	Started operation
March 1, 2013	Unit 2 and 3 at Group 3	Started construction
January 21, 2016	Unit 3 at Group 2	Started test operation (first parallel)
January 29, 2016	Unit 2 at Group 2	Started operation
June 29, 2016	Unit 3 at Group 2	Started operation

3. Panoramic view of Power Station



(Photographed on February 2016)

[Reference] Transition of Generation Efficiency

