

Termocandelaria, Colombia

**566 MW**



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# Termocandelaria CCGT, Colombia | 566 MW

## Conversion of an Open Cycle Gas-Fired Plant into a Combined Cycle Power Plant

### Context of the Project

The power plant of Cartagena de Los Indias (Colombia) has been used in simple dual-fuel cycle. This plant was developed and built by KMR Power Corporation of Arlington and then acquired by AES Corporation. Its conversion into a combined cycle power station was decided end of 2019. The owner and end-user, Termocandelaria SCA ESP, a member of the Termocandelaria Power Ltd Group of companies, decided to boost the plant efficiency and enhance its production with this conversion. This 232 million dollars investment project will allow Termocandelaria to meet the increasing regional and national energetic demand in Colombia. It will increase the capacity from 314 MW to 566 MW which includes an enhancement of efficiency of more than 35% and will reduce its production costs by 40%, which represents a significant jump in the economic efficiency of thermal backup, and great associated environmental benefits for the country.

### The Contract

John Cockerill's proven experience in Latin America, its competitiveness, and its ability to meet short delivery schedules are the main assets highly valued by the client, the EPC Tecnicas Reunidas. John Cockerill was awarded this contract for the design, supply, construction and commissioning supervision of 2 HRSGs with supplementary firing. The large bore piping of these recovery boilers is 3D-prefabricated; piping supports are also prefabricated with an integration of LB valves to 3D spools. As this power plant is located close to the seashore, all the equipment supplied by John Cockerill has to be protected against marine corrosion.

Moreover, the structural design has to be in accordance with Colombian standards (NSR-10). The John Cockerill boilers will largely contribute to the power plant efficiency.

### Plant Operation

- Configuration: 2 x 2 x 1 (Mitsubishi steam turbine generator)
- By-pass diverters
- Conversion from single cycling to combined cycling

### Gas Turbines

- 2 upgraded Westinghouse W501FC gas turbines
- Fuel: natural gas, oil

### Heat Recovery Steam Generators

- 2 horizontal HRSGs
- Three pressures with reheat and supplementary firing
- Natural circulation

### Performances

Gas	°C		kg/s
Inlet	626.7		447.2
Outlet	87.7		447.2
Steam	°C	barA	t/h
HP	587.2	157.5	296.8
IP	363	41	20
LP	331.5	6	19.1
Reheat	577.3	38.6	246.5

### Schedule

- Contract award February 2020
- First firing August 2022
- Full commercial operation December 2022