

Nevinnomyssk, Russia

**450 MW**



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 **John  
Cockerill**

# Nevinnomyssk, Russia | 450 MW

6<sup>th</sup> John Cockerill HRSG in Russia.

## A 450 MW Combined Cycle Power Station on the Black Sea

### Project definition

The client and end user, OGK-5 is a Russian privatized inter-regional electricity producing company and a subsidiary of the Italian ENEL. OGK-5 has launched a vast modernisation programme of its electricity generating equipment and has decided to upgrade the Nevinnomysskaya power plant (Southern Russia), including the rehabilitation of existing generating capacity dating back to 1959. The objective was building a modern and efficient Combined Cycle Gas Turbine unit to replace two old gas-fired steam units.

The project aimed to increase energy efficiency and promote the differentiation of energy supply. The project is to contribute to meeting growing electricity demand with a lower environmental impact than other fossil fuel based alternatives.

### The Contract

In the frame of the modernisation of the Nevinnomysskaya power station, OGK-5 implements a new Combined Cycle Power Plant on the existing industrial area. It has entrusted Power Machine to supply equipment and Power Machine awarded the order for the HRSG to John Cockerill. John Cockerill supplied a vertical triple pressure Heat Recovery Steam Generator with reheat to be installed behind a Siemens SGT5-4000F turbine, on the site of Nevinnomyssk, 300 km north east of Sochi, on the Black Sea.

The scope of John Cockerill includes the design, engineering, manufacture and a DDU Russian port of import delivery. Site operations are performed under OGK-5 lead and responsibility. John Cockerill provides technical and/or engineering advice to the customer during erection, commissioning, performance guarantee tests and trial run. John Cockerill will also be responsible for onsite training.

### Plant Operation

- The plant is designed for cycling operation.
- 8000 hours per year

### Gas Turbine

- Siemens SGT5-4000F type
- ISO rated 277 MW
- Fuel: natural gas

### Heat Recovery Steam Generator

- One John Cockerill vertical HRSG with natural circulation
- Three output pressures to steam turbine with reheat

### Performances

GAS	°C	kg/s	
Inlet	570		680
Outlet	104		
STEAM	°C	barA	t/h
HP	551	125	259
IP	309	32	44
LP	285	5	49
REHEAT	545	28	301

### Schedule

- Contract signature
  - Start of erection
  - First Firing
- December 2007  
August 2009  
March 2011



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