

HEAT RECOVERY
BIOMASS
PRIMARY FUELS
SOLID RESIDUES
LIQUID & GASEOUS RESIDUES

DK6 COMBINED CYCLE PLANT DUNKIRK, FRANCE



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Energy Source	GT Exhaust Gas
GT-Exhaust Gas Flow	536 kg/s
GT-Exhaust Gas Temperature	527 °C
GT-Electrical Output	2 x 160 MW
ST-Electrical Output	2 x 240 MW
Steam Capacity HP / RH	535 / 530 t/h
Steam Temperature HP / RH	566 / 566°C
Steam Pressure HP / RH	145 / 32 bar
Feed Water Temperature	105 °C
FG Temp Boiler Outlet	120 °C
RTI Aux. Firing System	345 MW _{th}
Fuel for Auxiliary Firing	Coke Oven Gas, Blast Furnace Gas, Natural Gas
Type of Boiler	Natural Circulation
Year of Commissioning	2004

THE TASK

Gaz de France placed an order with the former Alstom Power as the general contractor for the construction of a combined gas and steam turbine plant in the French city of Dunkirk. Within the scope of the project, Standardkessel Baumgarte was entrusted with the task of developing a solution for the power station mode of operation of the gas and steam process using a fuel/electricity management system. The two combined gas and steam turbine power plant lines are to generate, at full load, 2 x 400 MWe_l.

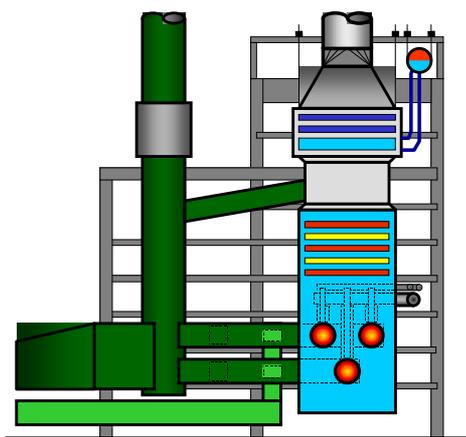
THE SOLUTION

The power plant mode of operation of the combined gas and steam turbine process with a fuel/electricity management system, which is unique world-wide, was made possible by the special design of Standardkessel Baumgarte's special heat recovery steam generator.

Unlike the otherwise usual mode of operation of combined cycle gas and steam turbine plants, in the case of this power plant, the major share of the electricity is generated by the steam turbines. The gas turbines are switched on and off fully automatically each day. For the unusual new mode of operation, a special heat recovery steam generator had to be developed.

The flying take-over between gas turbine and fresh air operation with the fuels coke-oven gas and blast-furnace gas requires a flexibly responding boiler with change-over devices which are not only based on the company's many years of design experience, but as regards their size and number are unique throughout the world.

The boiler plant is designed in a suspended vertical type of construction and is arranged in natural circulation. The burners are of staggered opposed arrangement as a so-called 'combed' opposed firing system. The delivery time for the engineering, manufacturing, and erection of both boilers was 26 months.



SCOPE OF SUPPLY

- Boiler Plant
- Firing System for:
 - Coke Oven Gas, Blast Furnace Gas, Natural Gas
 - Flue Gas Ducts incl. Flaps and Dampers
 - Stack
- Auxiliary Equipment

ENGINEERING SERVICES

- Engineering
- Assembly
- Commissioning