

# PipeLine

## HOBAS® CC-GRP Pipes for Industrial Applications

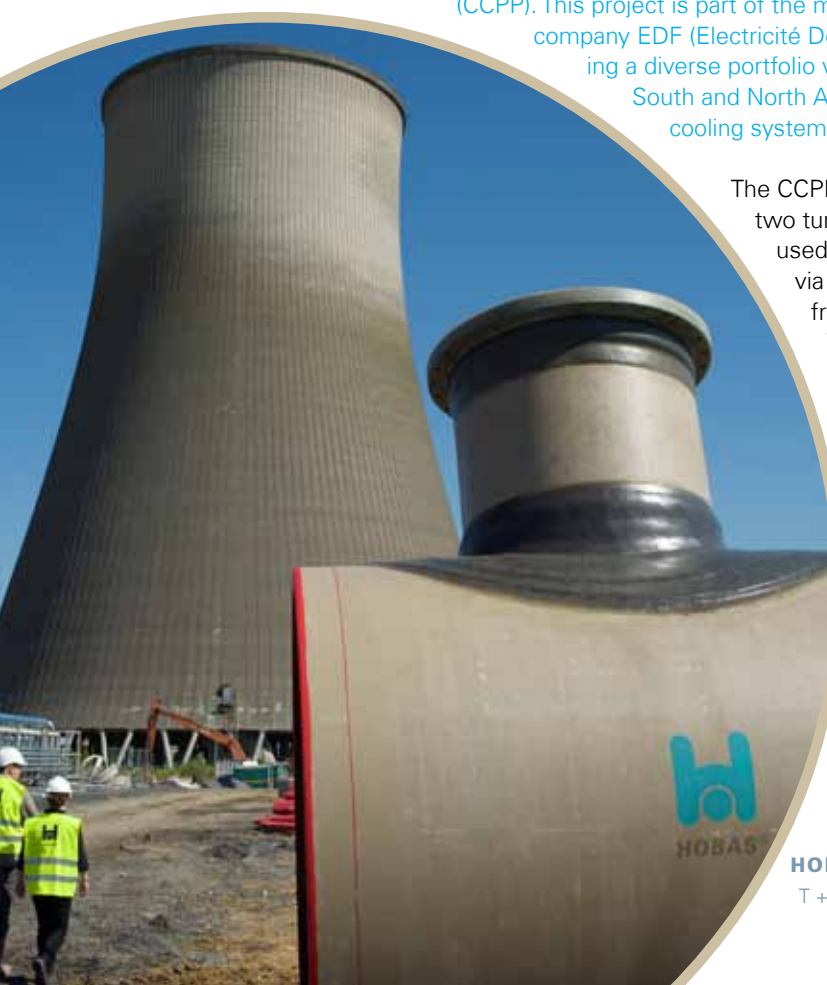
- 1 | HOBAS® CC-GRP Pipes Transport Cooling Water at Combined Cycle Power Plant in Bouchain, FR
- 3 | Interview with Laurent Hesters, Application Engineer at HOBAS France
- 4 | CC-GRP Tank and Pipeline Installed for Dry Dock in Saint-Nazaire, FR
- 5 | Installation of HOBAS® Drainage Pipes for Coal Power Station Opole, PL
- 7 | Cooling Water and Protective Pipes for Copper Ore Mine in Rudna, PL
- 8 | HOBAS® Air Pipes Help Rehabilitate Contaminated Soil in Tiszavasvári, HU
- 9 | HOBAS® Pipes Provide Mine in the Atacama Desert with Process Water, CL
- 10 | Renovation of Industrial Sewer with HOBAS® Pipes DN 1100 in Hallein, AT
- 11 | Fertilizer Production Facility Equipped with New Wastewater Pipeline, UA
- 12 | The HOBAS® TechCenter: A Successful Independent Testing Facility

## HOBAS® Pipes Do a Power of Good CC-GRP Pipes Transport Cooling Water at Combined Cycle Power Plant in Bouchain, FR

After 45 years of operation, the coal-fired power generating station of Bouchain, located in France's northernmost region Nord-Pas-de-Calais, has been replaced by a combined cycle power plant (CCPP). This project is part of the modernization plan of all fossil-fired power plants of the French company EDF (Electricité De France). EDF is the world's largest energy producer, operating a diverse portfolio with more than 120,000 MW of generation capacity in Europe, South and North America, Asia, the Middle East, and Africa. The sophisticated cooling system of the new CCPP has been realized with HOBAS CC-GRP Pipes.

The CCPP Bouchain operates on the basis of an efficient combination of two turbines: A gas turbine generates electricity and the waste heat is used to produce steam, which in turn generates additional electricity via a steam turbine. This way, about 50% more power is produced from the same fuel compared to a traditional simple cycle plant. The turbines are equipped with a cooling system, which connects the condenser to the cooling tower in a closed cycle. This system allows the removal of the heat produced in the turbines by natural gas combustion.

For the realization of this huge project, EDF wanted to work with top-quality contractors and products. HOBAS France provided a detailed design and feasibility study for the implementation of the sophisticated cooling system with HOBAS Products, including production and installation assistance on site. Thanks to their high chemical resistance, corrosion and abrasion resistance, light weight and easy handling, long lifetime, as well as the possibility to produce tailor-made fittings, HOBAS Products met the high demands of EDF and represented an ideal solution for this application.



Year of Construction

**2014**

Construction Time

**1 year**

Total Length of Pipe

**700 m**

Diameter

**DN 1400 and DN 2200**

Pressure Class

**PN 6**

Stiffness Class

**SN 10000**

Application

**Cooling pipes for power****plant**

Client

**EDF**

Building contractor

**Montaron**

Advantages

**High chemical resistance, corrosion and abrasion resistance, light weight and easy handling, long lifetime, possibility to produce tailor-made fittings**

At the beginning of 2014, 700 meters of HOBAS GRP Pipes DN 1400 and DN 2200, 11 bends DN 2200, 9 tees, and a custom-made Y 2200/1400 mm were delivered to the new CCPP in Bouchain. Since the pipeline installation was part of a bigger project, the schedule had to be strictly observed – penalties for delays would have been very expensive. The logistics on site were also very challenging: The construction area was strictly guarded, and deliveries could only be made at fixed times.

The pipeline was laid in open trench under the constant supervision of HOBAS Engineers. Due to the rather mediocre soil conditions on site, the cooling loop had to present a longitudinal flexibility at some key points. The use of short pipes and the admissible angular deflection of the HOBAS FW Coupling enabled the necessary flexibility and helped avoid high stresses.

Some laminating also had to be realized on site. Four lamination experts from HOBAS Germany were entrusted with this since they have the necessary skills, safety know-how, and equipment to work in confined spaces. They did an excellent job in building laminates with a very high load capacity, which also passed the final pressure test with flying colors.

After the successful completion of the project in August 2015, the Bouchain CCPP ranks among the most efficient power plant systems in the world. It avoids more than 50% of CO<sub>2</sub> emissions in comparison to a coal-fired power plant and it features 2/3 less nitrogen oxide emissions and no sulphur oxide emissions. Its capacity of 510 megawatts equals the energy consumption of 600,000 houses. And the efforts of HOBAS France also paid off in further respects: The organization obtained a special certification by EDF, which authorizes it to be one of EDF's suppliers and entitles HOBAS Engineers to bring in their expertise at EDF's plants.

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