



Made efficient: Saint-Gobain Glass Deutschland GmbH

Stolberg and Herzogenrath Factories

Saint-Gobain is one of the hundred largest industrial groups in the world. Their activities focus on five main fields: flat glass, high-performance substances, construction products, professional building materials for the construction trade and packaging. Saint-Gobain Glass is a globally operating company, represented by sites in Asia, America and Europe. Although Saint-Gobain Glass is number two amongst the internationally placed flat glass producers, the company is still recognised as the leading producer of flat glass in Europe. Saint-Gobain Glass Deutschland GmbH, based in Aachen, supplies the German market with its workforce of approx. 2,800 employees. The company offers a comprehensive and diverse range of glass products for all requirements, from the basic product to a wide spectrum of ready-for-use products for building construction and automotive assembly.

Saint-Gobain Glass Deutschland operates four float plants with fully automatic baths, with precise temperatures down to a fraction of a degree: in Herzogenrath, Köln-Porz, Stolberg and in the Saxony town of Torgau. The fully continuous process running in each facility produces up to 900 tonnes of glass each day – with a 4 mm glass thickness this is around 90,000 square metres. This float glass, also known as basic glass, is then further processed to multifunctional glass for the automotive and construction industries. The media supply at the Stolberg and Herzogenrath sites is managed by HOCHTIEF Energy Management.

Reduced energy consumption Reduced operating costs Reduced CO₂ emissions



Increased liquidity

Saint-Gobain Glass Deutschland GmbH

Requirement

In the producing industry, the energy supply acts a brake on growth, due to outdated systems and rising prices. Saint-Gobain Glass Deutschland GmbH, based in Aachen, was dissatisfied with this development and performed a comprehensive optimisation of its processes, primarily achieving an improvement in energy efficiency. In order to reduce the energy consumption systematically, the producer of flat glass relies since 2004 on the support of energy specialists HOCHTIEF Energy Management. After conducting a detailed analysis, this service provider has purposefully modernised the energy supply facilities.

Results

After two years of extensive redevelopment work at the sites in Herzogenrath and Stolberg, the waste heat produced during the melting of glass can now be used to the best possible purpose. In Herzogenrath the heat consumers profit most from these changes. The optimum connection allows the office areas to be heated to 99 percent with waste heat. This was previously only 25 percent. The consumption of natural gas for heating purposes has now been virtually eliminated. During the summer, the excess waste heat, which is not needed for heating purposes, is converted into electricity so that less electrical power needs to be purchased. In this manner, Saint-Gobain Glass Deutschland has already been able to cover a third of its electricity requirement with its own supply during the first two years.

The consumption of natural gas has also been reduced at the Stolberg factory. A total of 50 percent has been saved by installing a new counterpressure-steam turbine for the combined heat and power plant. These measures have saved the Saint-Gobain glass factory 20 percent of its supplied primary energy consumption. Saint-Gobain Glass Deutschland did not need to invest its own capital in the modernisation of the supply systems. The energy service provider involved invested a total of 5.1 million euros at the two sites after assuming management of the energy facilities in 2004. This investment is refinanced through the cost savings which the contracting partners share over the 15-year contract period.

Services

- Assumption of media supply services at the Stolberg and Herzogenrath factories as of June 1, 2004
- System optimisation
- System redevelopment and reconstruction
- Supply of effective energy
- Operation of systems

Individual measures

- Takeover of seven staff at each site and transfer in accordance with German Civil Code (BGB 613a)
- Transfer, partial renewal and operation of effective energy and media supply systems at both factories
- General overhaul and financing of supply facilities during the general repair phase at the Herzogenrath factory
- Installation of new, performance adapted steam turbines at both sites (with 700 kW or 1 MW electrical power produced).
- Renewal of three water treatment systems (2 x 600 l/h fully desalinated water)
- Modernisation of heat supply for heating purposes
- Renewal of control technology for entire supply facility
- Partial renewal of electrical systems

Media

- Heat, cooling water, electricity, water, compressed air, technical gasses, waste water



Investment

- EUR 5.1 million, contract period 15 years

Savings

- Approx. 10,000 t CO₂/a)

Targets achieved

- Reduction of operating and energy costs for supply of media by 15-20 % per annum

Efficient energy – perfect workflow

