SAR GROUP



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BIOMASS CHP HÜRTH

Integrated Electrical, EMSR, and Control Technology Solutions from SAR

PROJECT OVERVIEW

The Hürth biomass combined heat and power plant was planned, financed, constructed, and commissioned by E.ON Energy Projects as a modern biomass CHP facility. With a thermal capacity of approximately 88 MW and an electrical capacity of 20 MW, the plant was originally designed to supply steam to a paper manufacturer at the Hürth site. Compared to the previous lignite-fired system, a potential CO_2 reduction of up to 190,000 metric tons per year was calculated.

The biomass power plant was designed to utilize regional biogenic waste and fuel materials and was intended to contribute to the stabilization of the public power grid by feeding renewable energy into the grid.

In this project, SAR served as the technology partner responsible for the plant's entire on-site power supply as well as key areas of automation and process control technology.

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PROJECT SCOPE AND APPROACH OF SAR

SAR took a holistic approach with the goal of integrating power distribution, automation, and process control into a high-performance, comprehensive solution.

The scope of work included, among other things:

- Complete on-site power supply for the facility
- Medium-voltage switchgear
- Transformers and low-voltage main distribution
- Uninterruptible power supply (UPS)
- Emergency power system (EPS)
- Complete cabling, including busbar system
- High-level process control technology
- Automation of balance-of-plant (BoP) systems
- Delivery and installation of the associated sensor technology

By consolidating all essential control and electrical systems, a seamless and optimally coordinated system architecture was achieved.

TECHNICAL IMPLEMENTATION

The technical solution is based on an integrated infrastructure for power distribution, process automation, and plant monitoring.

At the heart of the system is the overarching process control system, which brings together all relevant plant areas and enables centralized operation and transparent process control. This is supplemented by the automation of auxiliary and utility systems, as well as comprehensive plant instrumentation.

At the same time, SAR took over the entire electrical infrastructure for on-site power supply, ranging from the medium-voltage level through the transformers to low-voltage distribution and the safety-critical power supply systems.

The close integration of electrical engineering, automation, and control technology created a highly available foundation for safe and efficient plant operation.

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ADDED VALUE THROUGH INTEGRATION

The integration of all systems on a common technical platform offers the operator significant advantages:

- High plant availability through a coordinated energy supply
- Centralized control and monitoring of the entire plant
- Improved transparency regarding all process and operating conditions
- High operational reliability through UPS and emergency power concepts
- Optimized maintenance and service processes
- Future-proof architecture for expansions and optimizations

Particularly in modern biomass power plants with high demands on efficiency, availability, and environmental sustainability, the end-to-end integration of all systems is a decisive factor for success.

CONCLUSION

The Hürth Biomass CHP Plant serves as a prime example of how modern biomass CHP plants can be supported by high-performance electrical, automation, and control technology. The solutions implemented by SAR for on-site power generation, process control, and automation contribute to safe, efficient, and reliable plant operation.

By supplying the complete on-site power generation system as well as key components of the process control and automation systems, SAR once again demonstrated its expertise as a systems integrator for sophisticated energy and environmental technology projects.



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