



Energy Storage

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ADS-TEC high-performance battery with 2.5 MW online in Schleswig-Holstein

The storage system is used for grid regulation, for primary regulation energy and for research into smart grid functionality and is connected to the power supply network of the Brunsbüttel public utility company.

In order to complete a long-term changeover to renewable energy sources, it is necessary to stabilise the energy flow from volatile generators in the public grid. In Schleswig-Holstein there is a lot of renewable energy generated from wind. This in particular requires intelligent and highly flexible energy storage systems in order to protect future power supply networks from shortages and overloading.

The storage power plant is operated by the energy company Wind to Gas Energy GmbH & Co. KG which was founded just two years ago and which operates its own 15 megawatt wind farm. Its key objective is to utilise energy storage through conversion into gas and to forge ahead with the market optimisation of storage technologies. Unlike gas storage, lithium-ion battery technology has the advantage of being extremely flexible. Within milliseconds, power can be collected from the grid and fed into the grid again just as quickly. Wind to Gas works for the grid operator Tennet, which requires this service for a stable electricity flow. The plant is a research project sponsored by Germany's Federal Ministry of Economics. It is part of North Germany's energy revolution 4.0 and one of the first large-scale grid stabilisation projects to be realised through an initiative by the federal government in the north of the country.

ADS-TEC's new StoraXe battery power plant at its site in Brunsbüttel is a high-performance system with a capacity of 2.5 MWh and a power output of 2.5 MW. It can be completely charged and discharged within one hour and collects/feeds large amounts of power from/into the grid in milliseconds. This provides a highly dynamic buffer in order to smooth energy peaks in the power supply network and to make the volatile generation of power from renewable energy sources available at all times. To illustrate the scale of the storage plant, its capacity can be compared to that of about one million mobile phone batteries.

The plant is a complete system including a transformer, inverter, control unit and climate control technology. It is connected directly to the power supply network of the Brunsbüttel public utility company. In just 8 months, the plant from ADS-TEC was ready to use and integrated in the control centre of the Brunsbüttel public utility company. Like all previous battery storage systems from ADS-TEC, it was prequalified straightaway. "We are pleased that we were able to realise the plant in such a short time and that it could be handed over for regular operation without problem," says the delighted ADS-TEC project manager Helmut Söldner.

The battery power plant is used for research into the smart grid of the future. Together with Fraunhofer ISIT from Itzehoe, alternative operating concepts for battery storage systems are being tested. Wind to Gas is thinking about further battery storage power plants: "Industrial companies could also benefit from these batteries as a way of compensating their peak loads", says Tim Brandt, managing director of Wind to Gas Energy.



New large-scale storage system with two megawatt power output at the Wind to Gas Energy GmbH & Co. KG site in Brunsbüttel.

Photo: ADS-TEC

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ADS-TEC is a medium-sized, family-run business with headquarters in Nürtingen near Stuttgart and a current staff of 240. The company develops and produces high-quality and industrial IT systems with long-term availability as well as scalable lithium-ion battery storage solutions including energy management systems for the home, industry and infrastructure sectors.

ADS-TEC CEO Thomas Speidel is president of the German Energy Storage Association (BVES) e.V. and a board member of StoREGio Energiespeichersysteme e.V. Through initiatives in numerous projects funded by the federal and state governments, ADS-TEC maintains close relations to businesses and research institutes along the entire value chain.

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