

<http://www.eon.com/de/presse/news/pressemitteilungen/2012/8/21/e-on-baut-power-to-gas-pilotanlage-in-falkenhagen.html>

## Project profile

# Converting surplus energy to hydrogen

### Project details

<b>Title</b>	Power to Gas demonstrator, Falkenhagen
<b>EIC Portfolio</b>	Energy Storage
<b>Program</b>	Power to Gas
<b>Collaborative project</b>	No
<b>Location</b>	Germany
<b>Start date</b>	Oct 2011
<b>Planned end date</b>	Dec 2015

### Opportunity

Power to Gas is a new way of storing surplus energy from renewable sources, such as solar and wind power, until it is required, balancing long-term fluctuations in generation. The conventional conversion process involves using electricity to electrolyze water, producing hydrogen. Alternatively, CO<sub>2</sub> from bio-energy facilities can be converted to bio-methane, which can then be fed into the natural gas grid without any blending limitation.

E.ON is building a pilot plant in Falkenhagen, Germany, to convert excess wind power into hydrogen by electrolysis. The hydrogen will be carried via pipeline to a connection point on the natural gas grid, where it will be injected into ONTRAS/VNG's high-pressure transmission pipeline.

Through this project, E.ON will become one of the first companies worldwide to demonstrate how surplus renewable energy can be stored within the natural gas grid, essentially removing the link between generation and demand.

### Project aims

Using innovative technology, the Falkenhagen storage plant will produce up to 360Nm<sup>3</sup>/h of hydrogen from about 2MW wind power through electrolysis. The hydrogen will be fed into the natural gas pipeline at around two percent by volume, at a maximum operating pressure of 55bar(g), effectively storing and transporting surplus renewable energy.

The work scope will include the engineering, construction, commissioning and start-up of a containerized 2MW electrolyzer and compression plant.

In addition the project will provide a power substation, metering station, hydrogen pipeline and natural gas grid access station. The diverse program of work will encompass conceptual design, detail engineering, project management, tendering, construction, commissioning, operation, optimization and standardization of the plant, right through to negotiations with all relevant authorities, as well as gas and electrical grid operators.

### Use and benefits

Although proven electrolysis technology will be used to get the Power to Gas plant up and running, the project will enable E.ON to gain a greater understanding of the technical and regulatory challenges involved in the set-up and operation of such storage plants, and to acquire valuable practical experience for application in future multiple or larger installations. Knowledge and experience gained will allow E.ON to define sound business models and place us in a strong position to win business in countries looking for proven, cost-effective and environment-friendly ways to store renewable energy.

The project will demonstrate the effective storage of renewable energy within the gas grid.

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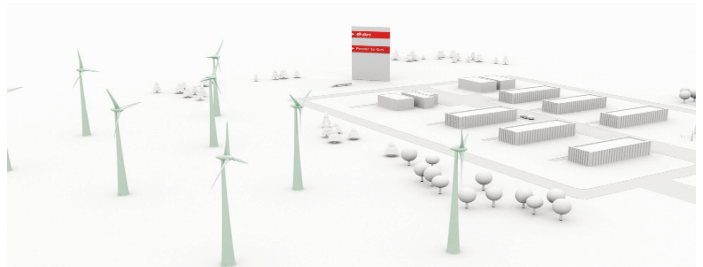


Image of the Falkenhagen storage plant