



Energiepark Mainz

World's largest PEM electrolysis facility in 2015

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Brief description

Energiepark Mainz is a joint project of Stadtwerke Mainz AG, the Linde Group, and Siemens AG, and was created under the scientific supervision of RheinMain University.

Since July 2015, three SILYZER 200 PEM electrolysis systems have been converting wind energy to hydrogen and making the hydrogen storable. The hydrogen generated on site from renewable resources is fed into the local gas grid or delivered to surrounding industry and hydrogen filling stations via tank trailers – with green certification on request.

3.75 MW

6 MW maximum temporary
power consumption

“Power-to-gas is the essential key technology for utilizing renewable energy in the heating and transport sectors.”

Jonas Aichinger, project manager at Stadtwerke Mainz

“As operators, we’re very satisfied with the plant and service from Siemens.”

Christoph Stiller, project manager at Linde AG

Use case

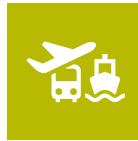
Energiepark Mainz uniquely demonstrates the concept of sector coupling. The power-to-gas plant produces sustainable hydrogen for mobility and industry and is able to provide reserve power in the event of bottlenecks in the power grid.

The combination of feeding hydrogen into the natural gas grid (Mainzer Stadtwerke) and utilizing it by filling tank trailers (Linde) is worth highlighting.



Industry

Delivery to surrounding industrial companies, with "green" certification on request.



Mobility

Provision of highest-quality hydrogen to regional hydrogen filling stations.



Energy

Feeding of green hydrogen into the local natural gas grid.

Challenge

Provision of hydrogen in industry standard 5.0

- Installation of world's first PEM electrolysis plant in the multiple megawatt range
- Provision of balancing energy
- High degree of automation

Solution

Installation of PEM electrolysis

- Installation of three SILYZER 200 with a maximum power consumption of 6 MW
- Highly dynamic power consumption
- State-of-the-art process control based on the Siemens SIMATIC PCS 7 controller
- Hydrogen processing, condensing, and storage (provided by Linde)

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