Green Hydrogen

Green hydrogen is set to play a decisive role in Germany's energy transition. Carbon-neutral energy provision will also help the country realize its climate protection goals.

The National Hydrogen Strategy

In June 2020, the Federal Government of Germany adopted a National Hydrogen Strategy (NWS) presented by the Ministry of Economic Affairs and Energy. In doing so, Germany has committed itself to the pivotal importance of green hydrogen to achieve its climate protection goals and mitigate climate change.

Hydrogen: wHere wHy wHat wHo wHen and How
Webinar: Mar 23, 2021 - Mar 24, 2021

Germany Trade and Invest will guide you through today's Energy landscape, and help you uncover: partners, places, paths and potentials, which will accompany success in this critical phase of Germany's Energy transition. **Please register here** for our webinars.

- Germany Goes Whole Hog on Hydrogen
- Latest News: Smart Grid, Energy Storage & Hydrogen
- Video: Energy Storage in Germany
- Latest Publication
- Green Hydrogen Market
- Current and Future Projects in Germany
- Power-to-Gas Technology
- Testimonial Ballard Power Systems - Michael Goldstein, CCO

Germany Goes Whole Hog on Hydrogen

The German government sees hydrogen technology as the key to the country's clean energy future. It's investing billions of euros in the sector. Germany aims to become the "world number one" in clean hydrogen energy technology - with the government investing €9bn. Our new video looks at how international businesses can get involved in German environmental H2.

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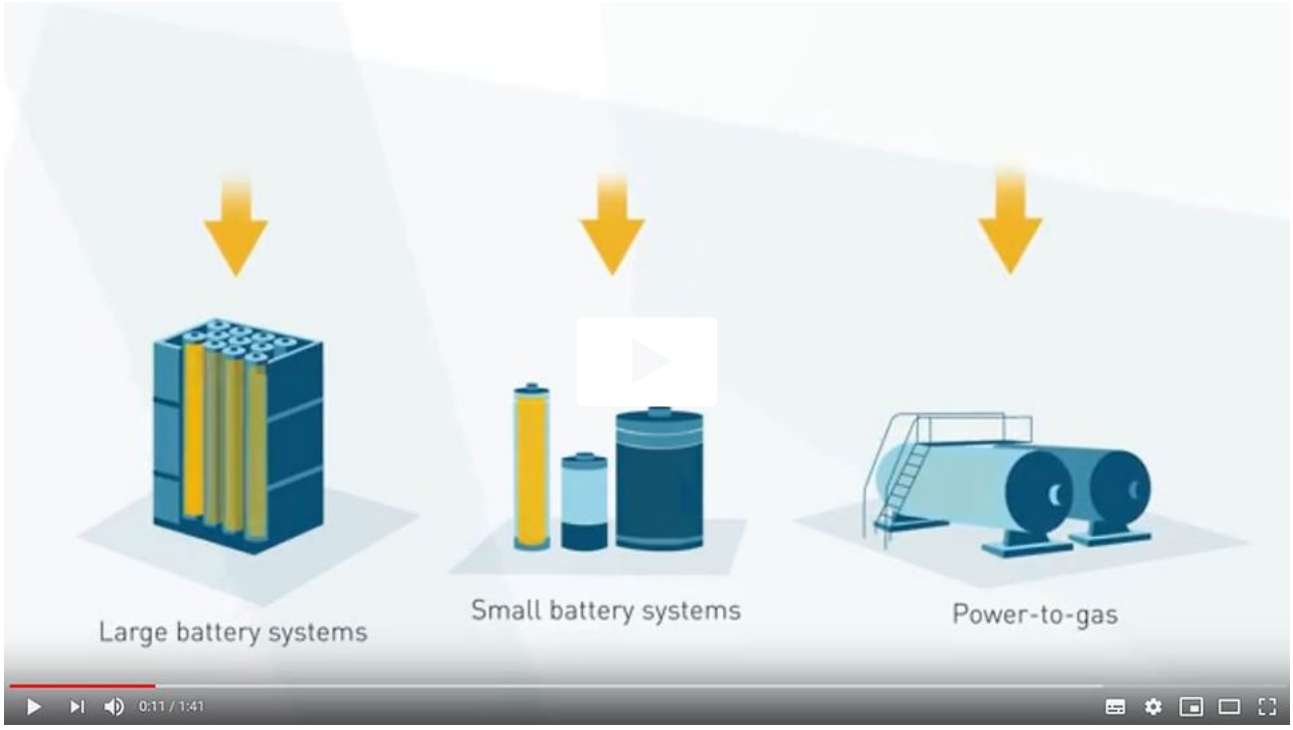
Video: Energy Storage in Germany



Latest Publication

Fact Sheet: The Energy Storage Market in Germany

As a front-runner in renewable energy development, Germany will become the lead market in the energy transition age in the years ahead. The country actively welcomes international enterprises seeking to participate in the changing energy market landscape. Read more about the opportunities for companies to develop, test, define, and market new energy storage solutions in Germany.

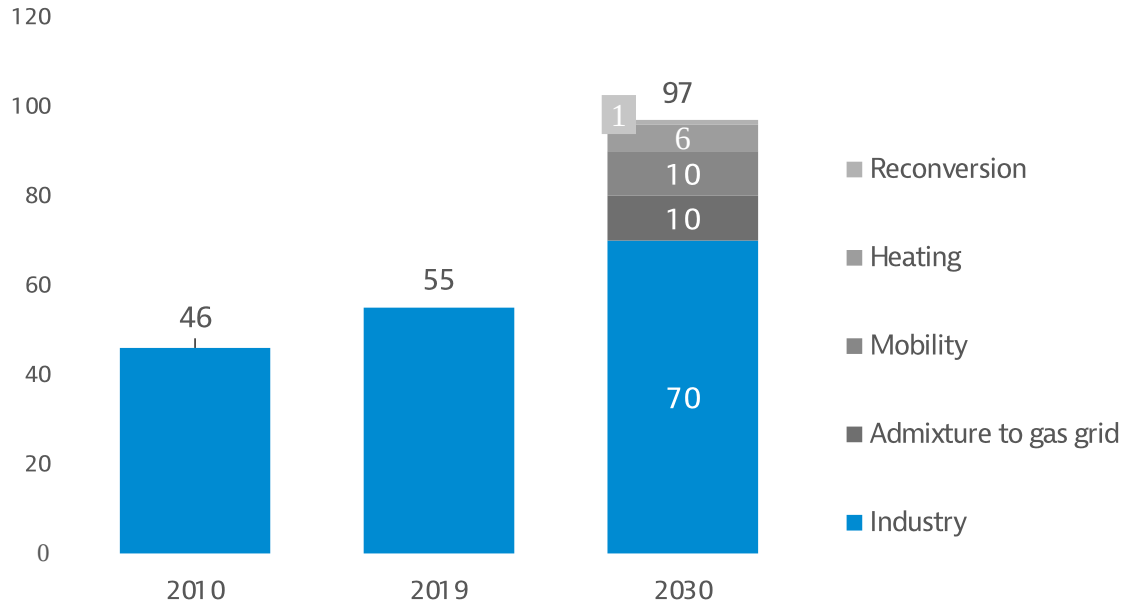
Green Hydrogen Market

Germany currently produces 42% (2019) of electricity by renewable energy sources. A figure that will increase to at least 80% by 2050 according to Germany's ambitious energy transition plan. Green hydrogen will play a fundamental role In the resulting energy storage challenge. Similarly, green hydrogen will also be essential in the process of decarbonizing industries.

As the demand for hydrogen in industrial applications is expected to increase from a current level of 55TWh to 90-110TWh by 2030, it will take significant investment to switch from grey to green hydrogen while increasing supply at the same time. The National Hydrogen Strategy therefore includes the establishment of 5 GW generation capacity by 2030 and an additional 5 GW by 2035 and 2040 at the latest. Government-funding programs for companies that deploy hydrogen-related operation are expected in the near future.

Hydrogen Utilization in Germany (in TWh)

Hydrogen will become central pillar in achieving Germany's energy transition



Source: BMWi, 2020; e.venture, 2020

Current and Future Projects in Germany

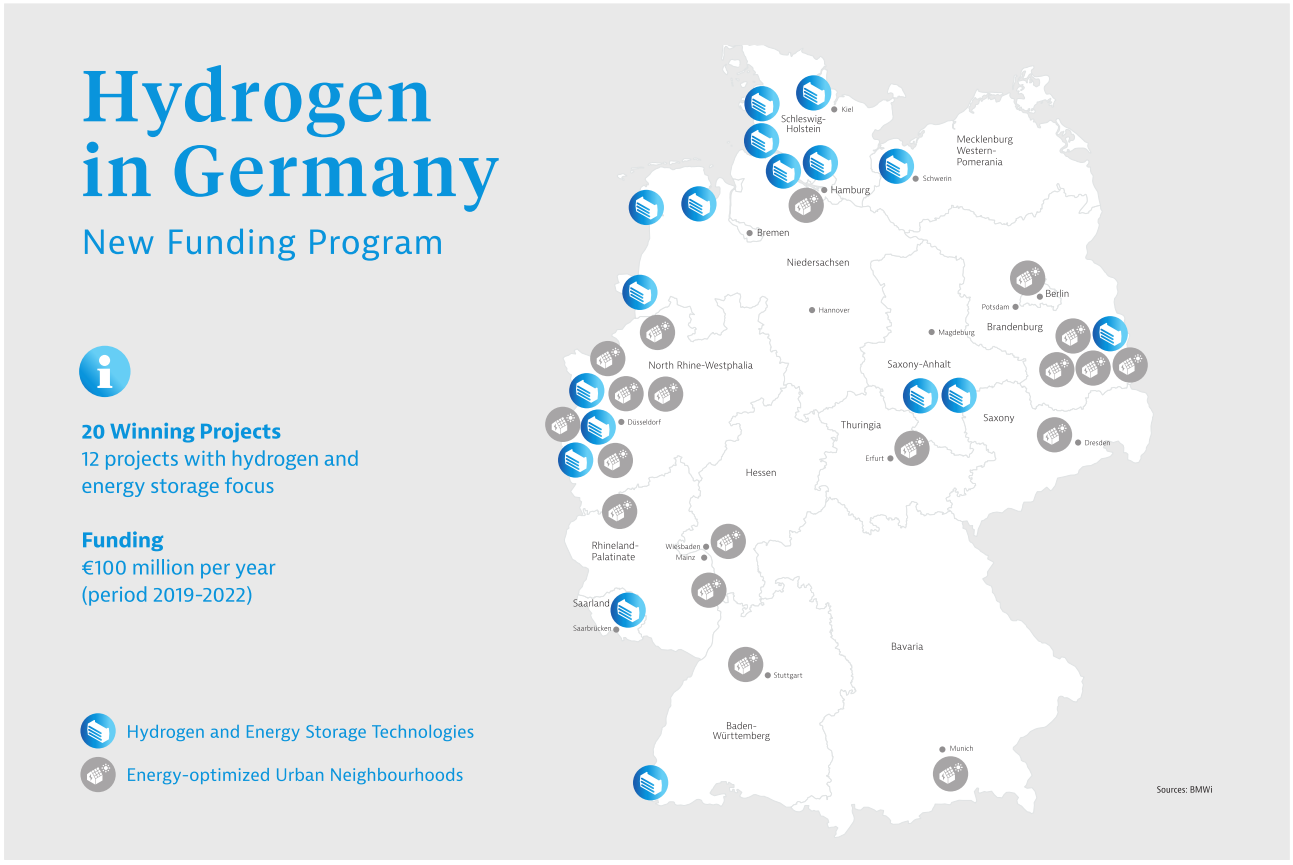
There are currently 30 small-scale pilot projects that use renewable energy to produce green hydrogen operating across Germany. Funding measures such as the National Innovation Programme for Hydrogen and Fuel Cell Technology (NIP), now continued under the National Hydrogen Strategy, will bolster similar projects.

In the framework for the government's "Regulatory Sandboxes for the Energy Transition," Germany is striving to scale up and quicken the innovation process. Demonstration plants enable technological testing under real-life conditions – permitting a speed up of innovation transfer from the lab to the market. Of the 20 projects, 12 deploy hydrogen technologies including "Westküste 100," the first project to receive funding approval of EUR 30 million in August 2020. The electrolysis plant plans on a green hydrogen production capacity of 700 MW by 2030.

Power-to-Gas Technology

Power-to-gas (P2G) technologies will play a fundamental role In Germany's energy transition. This is due to an increased seasonal and geographical fluctuation in energy production as a result of higher share of energy from renewable sources. Power-to-gas technologies represent a method to cope with these fluctuations by stabilizing grid frequency and optimizing grid usage. Through electrolysis, surplus energy from fluctuating renewable sources can be stored as hydrogen gas in the extensive German gas grid. The extension of P2G facilities across Germany is inevitable as the German government seeks to meet its climate targets and reduce primary energy demand in the transportation sector.

Investment potential exists along the entire supply chain: from long-term storage, production and trading to electrolyser production, gas compression, and smart gas metering amongst other things. Within Europe, Germany alone has the majority of European fuel cell and hydrogen technology demonstration projects. Thanks to internationally recognized certification institutions, the large number of players, and regional and international activities, Germany is developing and setting tomorrow's global technical framework and standards.



Testimonial Ballard Power Systems - Michael Goldstein, CCO

"Ballard Power Systems has been putting fuel cell products to work in applications throughout the European Union. The expertise we found at Germany Trade and Invest has led us to the best matched partners and investment opportunities in the German marketplace." (2011)

Contact Us

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