Hydrogen projects in the E.ON Group

For E.ON, hydrogen is a fundamental component of the future energy system. E.ON is ready to support the development of a hydrogen economy in Germany and Europe competently and actively.

We will significantly expand our commitment in this field and plan to invest in rolysers, gas grid infrastructure and renewable energies for the production of n hydrogen close to our customers. We are already developing our H2 project ine along the entire value chain and are always examining the implementation of project ideas.

ection of already realised projects can be found on this page.

rddeutsches Reallabor

iding green hydrogen for decarbonisation of industrial and mobility ications

Living Lab of Northern Germany is a transnational joint project that aims to test the holistic transformation of the energy system and thus demonstrate the path to rapid decarbonisation

energy-efficient neighbourhood solutions, primarily in the heating sector.

The model region includes the federal states of Hamburg and Schleswig-Holstein, western Mecklenburg-Vorpommern and Bremerhaven. The Project bundles different sector coupling projects in geographical "hubs", which are oriented towards the grid topology of the electricity and gas grids.The large-scale project is part of the funding initiative "Reallabore der Energiewende" (Energy Transition Living Labs) and is funded with around 52 million euros by the Federal Ministry of Economics and Climate Protection (BMWK). The total investment volume of the partners involved is around 300 million euros.

Behind the project is an energy transition alliance of 23 funding partners, 25 associated partners and 6 associated authorities and ministries of the state governments.HanseWerk AG is one of the founding members of the " Living Lab of Northern Germany " consortium and plans to build and operate a large-scale electrolyser in the Hamburg port area as part of the project. With a size of 25 MWel, the planned plant comprises more than half of the electrolysis capacity to be realised in the " “Living Lab of Northern Germany ". The plant is to function as a central production hub for green hydrogen and serve the growing demand for hydrogen in the Hamburg area. The goal is to gradually open up various consumption sectors, especially in the areas of industry and mobility. With an annual production volume of around 2900 t, around 33,600 t of CO_2 per year can be saved compared to conventional hydrogen production from natural gas.

Project data

ReVU/ReG	Hansewerk AG
Project partner	Diverse
Project location	Hamburg (Hafen)
Project start & end	04/2021 - 03/2026
Status	Implementation (funding approved in April 2020)
Funding program	Reallabore der Energiewende (BMWi)

→ **Please also visit www.norddeutsches-reallabor.de to learn more***

Windwasserstoff Salzgitter

Step towards a hydrogen-based, decarbonised industry in Salzgitter

In a joint project between Salzgitter Flachstahl GmbH, Linde AG and Avacon Natur GmbH, Salzgitter Flachstahl has been operating a PEM electrolysis plant with a capacity of approx. 450 standard cubic metres on the plant premises in Salzgitter since 2021. In this context, Avacon Natur has erected seven wind turbines with a capacity of approx. 30 megawatts in the immediate vicinity and supplies the steelworks and the PEM electrolysis plant with renewable energy via the shortest route. The project and cooperation partner Linde is responsible for providing the additionally required hydrogen. The first hydrogen supply and the commissioning of the wind turbines in Salzgitter took place in 2021.

View of the Salzgitter AG site with the first industrial sector coupling in Germany at one location

→ **Learn more about the Salzgitter project**

→ **Please also visit www.avacon.de for more info about wind power for Salzgitter***

* Please note: content on this page is only available in German

Project data

ReVU/ReG	Avacon (Natur)
Project partner	Saltzgitter, Linde
Project location	Salzgitter
Project start & end	2018-2036

HyMAT-SH

(Hydrogen for Mobility and Transport in Schleswig-Holstein)

HanseWerk & Hypion* are planning a network of H2 mobility hubs across Northern Germany to support decarbonization of heavy-duty road transport. The objective of the project HyMAT-SH is to supply these refuelling stations with green H2.

HanseWerk will develop and operate a 10 MWel electrolyser that will use renewable energy (wind & PV) to produce green hydrogen. To increase overall efficiency of the hydrogen production process, we plan to re-use waste heat of the electrolyser and to support decarbonization of heat supply.

Green hydrogen will be supplied to Hypion's heavy duty refuelling stations in e.g. Neumünster, Lübeck, etc.

In total, annual CO_2 savings of almost 15,000 t CO_2 can be reached in comparison to hydrogen produced from natural gas.

HanseWerk will develop and operate a 10 MWel electrolyser.

* HanseWerk owns a share of 25% of Hypion GmbH

Project data

ReVU/ReG	HanseWerk
Project partner	Hypion, others
Project location	To be specified
Project start & end	2022-2026 (planned)
Status	Idea/Planning
Funding program	Reallabore der Energiewende (project draft submitted in 09/21)

European CEO Alliance „Green hydrogen value chain“

Building a European green H2 value chain with an electrolyser capacity of 1 GW by 2032

In Italy, renewable electricity is generated with own PV and wind power plants and transferred to Germany to feed electrolysers located close to industrial customers. In Spain, renewable energy is generated, converted by electrolysis into green hydrogen and finally into ammonia, which is then exported to Germany to be fed into ammonia crackers and replace grey ammonia. The development of a green H2 pipeline infrastructure that connects directly to B2B customers in the Rhine-Ruhr region is taking place, as well as the development of an ammonia terminal, an ammonia cracker and an electrolyser to feed H2 into the pipeline.

→ **Learn more about the H2.Ruhr project**

Project data

ReVU/ReG	E.ON, Westenergie / Westnetz
Project partner	Iberdrola, Enel, ABB, SAP
Project location	Spain, Italy, Germany (North Rhine-Westphalia region)
Project start & end	2022-2032
Status	Planning and approval phase
Funding program	IPCEI for German project part, EU Funding calls

H2-Quarter Kaisersesch (SmartQuart)

In the "SmartQuart" project, which was launched at the beginning of 2020 as the first of the BMWK's "Reallabore der Energiewende" (Energy Transition Real Labs), smart quarters are being created at three locations in Germany that supply themselves with energy in an almost completely climate-neutral manner.

In the municipality of Kaisersesch in Rhineland-Palatinate, E.ON plans to build and operate a 1MW electrolyser and a local hydrogen network. Locally generated green electricity will be converted into hydrogen by the electrolyser and fed into a high-pressure H2 pipeline with storage function. From there, the hydrogen is made available to end customers in the transport, industry, electricity and heating sectors.

In addition to the hydrogen network, the construction of a heating network is planned, which will be supplied with green heat by an H2 CHP plant. The use of LOHC technology will also create the possibility to use the green produced hydrogen far away from the accessibility of the H2 pipeline.

The system solution offers the possibility to implement sector coupling in a real environment in order to gain experience with H2 production, storage and distribution including end applications and to increase knowledge regarding the legal and regulatory challenges of an H2 infrastructure, thus creating a blueprint for sector coupling in quarters.

E.ON SE is the consortium leader of the project consortium with 11 partners and responsible for project development and management.

The technical and regulatory planning of the H2 grid infrastructure as well as its operational management is carried out by Westnetz.

E.ON's responsibility

- Manage / steer the overall project
- Build & operate H2 pipeline
- Build & operate electrolyser
- Build & operate NH3 terminal & NH3 cracker
- Connection with & supply to local off-takers

Project data

ReVU/ReG	Westnetz
Project partners	Viessmann, RWTH, Hydrogenious, GridX, VG Kaisersesch, H2 Mobility

Status	Implementation
Funding program	Real Labs of the Energy Transition (BMWK)

Learn more about hydrogen

Hydrogen facts

Learn more about hydrogen

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