

 www.dvgw.de

GERMANY HYDROGEN LAND

100 hydrogen projects

Hydrogen – long since put into practice rather than remaining a theory

- ➔ Hydrogen and its widespread availability are **fundamental to the energy transition** in Germany.
- ➔ Across all sectors, new gases such as hydrogen offer an **economical and efficient path to climate neutrality**.
- ➔ 100 selected projects across the country demonstrate where the **transformation of the energy supply is already becoming a reality**.



From production to application.

Across the **entire value chain**, innovative projects and facilities are being implemented or are at an advanced stage of planning in Germany.



The **100 selected projects** provide an **insight into the current status and planning** of the hydrogen transition.

Hydrogen projects Production



GREEN
HYDROGEN



© ENERTRAG



Location: Prenzlau

Start: 2011

Operator: ENERTRAG

Info: www.enertrag.de

Pioneering project generates climate-neutral electricity and hydrogen on demand

- The combined power plant provides predictable output in the gigawatt range.
- It combines wind and solar energy (622 MW/20 MW), storage, green hydrogen and heat via its own collection network to form a controllable integrated system.
- Households and industry use the electricity and heat supplied on demand. The hydrogen is fed into the future hydrogen grid.



© Stadtwerke Haßfurt



Location: Haßfurt

Start: 2016

Operator: Stadtwerke Haßfurt

Info: www.stwhas.de

Production and reconversion of 100% green hydrogen

- A PEM electrolyser (1.25 MW) converts surplus electricity from a community wind farm and other wind and solar power plants into hydrogen.
- The green hydrogen is fed into the gas grid and used for re-electrification via a hydrogen combined heat and power plant (H₂-CHP).
- Storing the hydrogen in pressure tanks enables the CHP plant to operate continuously for approximately 12 hours.



© Hy2B 2026



Location: Pfeffenhausen

Start: 2024

Operator: Hy2B Wasserstoff GmbH

Info: <https://hy2b.de>

Production, filling and delivery of green hydrogen in Bavaria

- Green hydrogen (RFNBO) is produced in Lower Bavaria using a 5 MW electrolyser.
- Deliveries are made to local public transport services in the districts as well as to other customers in the region.
- The plant also performs a grid-stabilising function as a controllable load in the heavily loaded electricity grid, helps to reduce curtailment of surplus solar power and supports the development of a stable, decentralised energy supply.

Falkenhagen power-to-gas and methanation plant



© Uniper



Location: Falkenhagen

Start: 2013

Operator: Uniper

Info: www.uniper.de

Successful demonstration project involving 27 partners from six countries produces synthetic natural gas

- The plant was one of the first industrial PtG plants in Europe and continues to serve as a technological reference project for large-scale sector coupling.
- A 2 MW electrolyser produces hydrogen from wind energy, which is converted into synthetic natural gas (SNG) by a methanation plant and then fed into the gas grid (up to 1,400 m³ per day or 14,500 kWh of energy).
- The heat generated during the process is utilised by a neighbouring veneer mill.



© AdobeStock-Engel Drone Pilot



Location: Wensickendorf

Start: 2026

Operator: ENERTRAG

Info: www.enertrag.de

Green hydrogen enables CO₂-free mobility in rail transport

- An electrolyser with a capacity of 4 MW will produce up to 380 tonnes of green hydrogen annually.
- Around 230 tonnes per year are earmarked for supplying the hydrogen trains of the Heidekrautbahn, which operate between Barnim and Berlin. The project will thus replace over one million litres of diesel annually and reduce CO₂ emissions by approximately 3,000 tonnes per year.
- It offers potential for further applications in public transport, logistics, industry and municipal energy supply.



© RVI GmbH



Location: Esslingen

Start: 2021

Operator: Green Hydrogen Esslingen

Info: <https://neue-weststadt.de/>

Production of hydrogen from surplus electricity for storage and resale

- Two electrolyzers, each with a capacity of 500 kW, produce hydrogen from surplus solar power, which is fed into the local gas network and used for reconversion to electricity in CHP units.
- The waste heat from the electrolyzers and CHP units is fed into the neighbourhood's local heating network.
- In future, the hydrogen produced is to be supplied to mobility and industrial customers via the planned H2 GeNeSiS pipeline towards Stuttgart.



© Lhyfe



Location: Schwäbisch Gmünd

Start: 2025

Operator: Lhyfe

Info: <https://de.lhyfe.com/>

Germany's largest commercial plant for the production of renewable hydrogen

- A 10 MW electrolyser with water treatment and hydrogen purification is set to produce up to 1,000 tonnes of green hydrogen per year.
- The renewable electricity is sourced from wind, solar and hydroelectric power plants.
- The hydrogen produced is distributed throughout the model region via trailers and, in the future, via pipeline connections.



© AdobeStock/polack



Location: Waiblingen

Start: 2024

Operator: Stadtwerke Waiblingen,
GP Joule

Info: www.h2rivers.de

Green hydrogen ecosystem for transport and public transport

- Construction of a 2 MW electrolyser to produce approximately 260 tonnes of green hydrogen annually from regional renewable electricity.
- Construction of a public hydrogen refuelling station and procurement of 9 public transport buses in Waiblingen as the first customers.
- The waste heat from the electrolysis is to be fed into the district heating network.



© AdobeStock/Simon Dux Media



Location: Stuttgart

Start: 2026

Operator: Stadtwerke Stuttgart

Info: www.stadtwerke-stuttgart.de

Electrolysers as a central hub for regional hydrogen supply

- Construction of three electrolysers (10 MW) to produce up to 1,200 tonnes of hydrogen per year for transport and industrial applications.
- Part of the project involves the construction of a hydrogen pipeline (H2 GeNeSiS) along the Neckar Valley.
- The overarching H2 GeNeSiS project is intended to serve as the nucleus of a regional hydrogen economy in the Stuttgart area.



© WUN H2 GmbH



Location: Wunsiedel

Start: 2022

Operator: Rießner-Gase,
Siemens Project Ventures,
Wunsiedel Municipal Utilities

Info: www.wun-h2.de

Bavaria's largest electrolyser supplies regional industrial and commercial enterprises

- The electrolysis plant, planned and operated as a joint venture, is Bavaria's largest energy storage facility.
- The plant has a rated output of 8.75 MW and produces around 175 kg of green hydrogen per hour at peak capacity and up to 1,350 tonnes per year.
- The hydrogen produced is stored on-site in tanks and delivered by lorry trailer to glass and ceramics manufacturers, a sawmill and other businesses in the region.



© Green Hydrogen Technology



Location: Ebersbach

Start: 2026

Operator: ETG Waste Management +
Transport

Info: www.du-willkommen.de

Hydrogen from waste for zero-emission lorry transport

- On the premises of ETG Entsorgung + Transport, up to 100 tonnes of hydrogen are produced annually from non-recyclable waste such as plastic and wood.
- The company hylane, which operates Europe's largest fleet of hydrogen-powered lorries, is the customer.
- The CO₂ e produced during hydrogen generation is liquefied and is to be sold to industry for material use or stored.



© Bhyo GmbH



Location: Speyer/Frankenthal

Start: 2025/2028

Operator: Bhyo GmbH

Info: <https://bhyo.de/projekt-bioh2/>

Climate-neutral heat, hydrogen and CO₂ from biogenic residues and waste

- Resource-efficient and competitive production of hydrogen from hard-to-recycle biogenic residues in a thermochemical conversion reactor.
- By storing and converting CO₂, the process can act as a carbon sink. The heat generated can also be used for district heating.
- The test plant is being used to investigate technical methods and processes for economical and sustainable production of hydrogen (~1 kg/h). A pilot plant (~50 kg/h) serves as the basis for scaled-up industrial application.

Power-to-gas plant in Pirmasens-Winzeln



© iStock/winyuu



Location: Pirmasens

Start: 2015/16

Operator: Testing and Research Institute
Pirmasens

Info: www.bioraf.de

Bacteria produce climate-neutral gas using biomass and wind energy

- Biological methanisation in a high-performance reactor that produces almost pure biomethane from CO₂ e and hydrogen using special methane-producing microorganisms.
- The CO₂ e is sourced from a biogas plant, whilst the hydrogen comes from an electrolyser that utilises wind energy.
- Up to 440,000 m³ of the biomethane produced in this way can be fed into the local gas grid each year.



© AdobeStock/Guntar Feldmann



Location: Bitburg

Start: 2027

Operator: Stadtwerke Trier

Info: www.swt.de

Biomethane production from surplus electricity and by-products

- Construction of a 1 MW electrolyser that produces green hydrogen from wind and solar energy.
- The hydrogen is converted into biomethane using CO_2 , which is produced as a by-product during biogas processing in a biogas plant.
- This will increase the feed-in of biomethane into the local gas network by more than one million kilowatt-hours per year.



© AdobeStock/Björn Wylezich



Location: Spremberg

Start: 2026

Operator: ENERTRAG, Zweckverband
Schwarze Pumpe Industrial Park,
energiequelle

Info: www.reflau.com

New hydrogen storage power plant for a green Lusatia

- Construction of a flexible, grid-friendly power plant that converts green electricity from wind and solar power into green hydrogen, stores it and reconverts it into electricity as required.
- A 12 MW electrolyser is initially set to produce 1,000 tonnes of hydrogen per year for the transport, industry and heating sectors.
- The aim is to provide flexible and rapidly controllable capacity to supplement renewable energy and ensure security of supply in eastern Germany.



© VNG



Location: Bad Lauchstädt

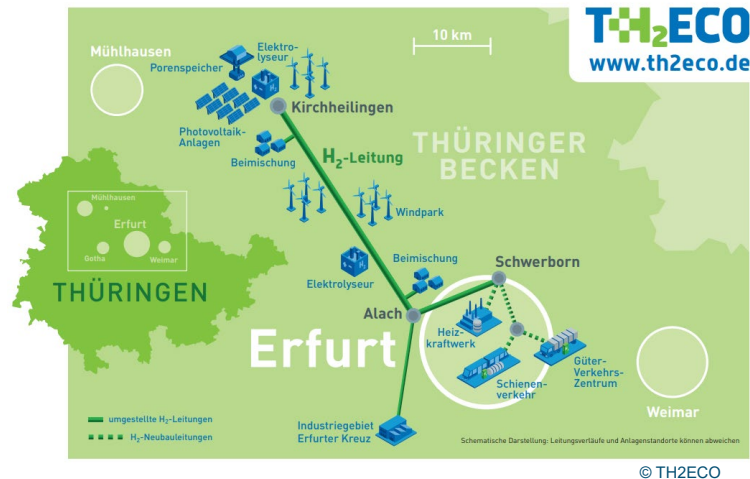
Start: 2025

Operator: VNG, DBI, ONTRAS et al.

Info: energiepark-bad-lauchstaedt.de

Large-scale production, storage and distribution of hydrogen in central Germany

- A large-scale electrolysis plant (up to 30 MW) produces green hydrogen using electricity from a nearby wind farm.
- Temporarily stored in a salt cavern specially prepared for this purpose, the hydrogen can be fed into the hydrogen network of the chemical industry based in central Germany via a converted gas pipeline.
- In the future, the hydrogen could also be used for urban mobility solutions.



Location: Erfurt area

Start: 2028

Operator: TEAG, SW Erfurt et al.

Info: th2eco.de

H₂ -Ecosystem for Thuringia

- Green hydrogen is to be produced in Thuringia and transported to the Erfurt area via an existing gas pipeline.
- There, the hydrogen will be used to generate district heating at the local combined heat and power plant and fed into the natural gas grid, directly supplying industrial companies and households.
- In addition, a hydrogen refuelling station for heavy goods vehicles will be built.
- Plans include the expansion of the H₂ infrastructure and connection to supra-regional networks for Europe-wide import and export.



© AdobeStock/Anselm



Location: Staßfurt

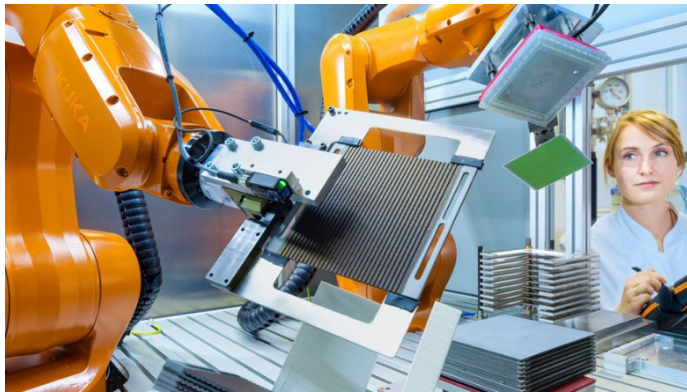
Start: 2025

Operator: EMS, SW Staßfurt, MVV

Info: stadtwerke-stassfurt.de

Hydrogen from wind energy for climate-neutral transport

- Construction of a wind farm with a total capacity of 30 MW and a 1 MW electrolyser.
- At a refuelling station in the region, the green hydrogen is to be used primarily for public buses and refuse collection vehicles. 130 tonnes of H₂ e can be produced annually, which is enough to power up to 20 hydrogen vehicles throughout the year.
- In addition, hydrogen is to be fed into the local natural gas network.



© Fraunhofer IKTS



Location: Arnstadt

Start: 2025

Operator: thyssenkrupp nucera,
Fraunhofer IKTS

Info: ikts.fraunhofer.de

Production facility for components for high-temperature electrolysis (SOEC)

- Construction of a pilot production plant for stacks used in SOEC electrolyzers.
- High-temperature electrolysis enables highly efficient H₂ production from water vapour at temperatures above 600 °C with high efficiency.
- In co-electrolysis mode, SOEC electrolyzers can also convert industrial CO₂ e and hydrogen into green synthesis gas, from which sustainable chemical feedstocks and e-fuels can in turn be produced.



© Andritz



Location: Erfurt

Start: 2025

Operator: Andritz AG

Info: www.andritz.com

Large-scale production of electrolyzers

- The plant produces key components for the production of green hydrogen, including electrolysis stacks and phase separators.
- The first customer is steel producer Salzgitter, whose 100 MW hydrogen plant is set to utilise the products.
- The Gigafactory has an initial production capacity of around one gigawatt – this corresponds to approximately 160 to 200 electrolyzers per year.



© AdobeStock/baluhh



Location: Hamburg

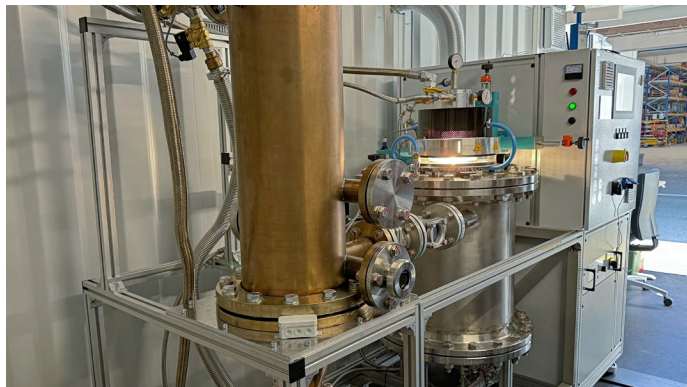
Start: 2027

Operator: Hamburger Energiewerke,
Luxara

Info: www.hggh.eu

Hydrogen production for Hamburg's industry and transport

- Construction of a large-scale electrolyser (100 MW) on the site of the former Moorburg coal-fired power station.
- Up to 10,000 tonnes of H₂ e are to be produced annually, with plans to scale the plant up to 800 MW.
- Hydrogen is to be distributed via the Hamburg Hydrogen Industry Network (HH-WIN) and via a trailer loading station for consumers without access to hydrogen infrastructure.



© Hamburger Energienetze



Location: Hamburg

Start: 2021

Operator: Hamburger Energienetze,
CC4E/HAW Hamburg, iplas

Info: www.haw-hamburg.de

Plasma cracking as a bridging technology

- Natural gas was split into hydrogen and solid carbon – a marketable by-product – using plasma cracking.
- Hydrogen production took place during trial operations to research this novel technology.
- ₂When biomethane is used, hydrogen can be produced with a negative CO₂ footprint.
- ₂Plasma cracking represents a potential bridging technology for producing hydrogen in the short term without releasing CO₂ emissions.



© AdobeStock/altitudedrone



Location: Emden

Start: 2027

Operator: EWE HYDROGEN

Info: clean-hydrogen-coastline.de

Hydrogen production on the North Sea coast on a market-relevant scale

- One of Europe's largest hydrogen production plants, with a capacity of 320 MW, is being built.
- It will be connected to the electricity grid via a high-voltage direct current (HVDC) transmission line and to the core hydrogen network.
- From the end of 2027, the first green hydrogen is to be produced and supplied to industrial customers.
- The project is part of EWE's Clean Hydrogen Coastline (CHC) programme



© AdobeStock/Igor Hotinsky



Location: Southern North Sea

Start: 2028

Operator: ONP, HR, HF Offshore,
HY5 Management

Info: northseahydrogen.de

Offshore electrolyser in the North Sea

- The first project company for the construction of an offshore electrolysis plant in Germany is planning a 10 MW demonstration plant by 2028.
- Using electricity from the Global Tech I offshore wind farm, the plant is set to produce up to 22 tonnes of hydrogen per week via electrolysis.
- Following a successful trial, a larger plant (300 MW) is planned. The hydrogen is initially to be transported to the mainland by ship. In future, a connection to a pipeline is planned, which will enable more cost-effective transport.



© AdobeStock/Sepia100



Location: Wesseling

Start: 2021/2027

Operator: Shell, ITM Power

Info: www.refhyne.eu

Green hydrogen for the decarbonisation of a refinery

- Construction of a 10 MW electrolyser to produce green hydrogen at the Shell refinery in Wesseling.
- Since 2021, the plant has been producing 1,300 tonnes of hydrogen per year, which replaces natural gas-based hydrogen and contributes to CO₂ reduction in refinery operations.
- A further 100-MW electrolyser is already planned as part of the REFHYNE II project and is scheduled to come on stream in 2027 (up to 16,000 tonnes of H₂ e per year).



© AdobeStock/AA+W



Location: Oberhausen

Start: 2024

Operator: Air Liquide, Siemens Energy

Info: de.airliquide.com/trailblazer

Renewable hydrogen for key industries and transport

- Construction of a 20 MW electrolyser for the production of renewable hydrogen and oxygen.
- Production capacity of up to 2,900 tonnes of hydrogen per year.
- Connection to the existing hydrogen pipeline to supply key industries such as steel, chemicals and zero-emission mobility in the Rhine and Ruhr regions.
- An expansion of capacity to 30 MW is planned.



© AdobeStock/Sepia100



Location: Marl

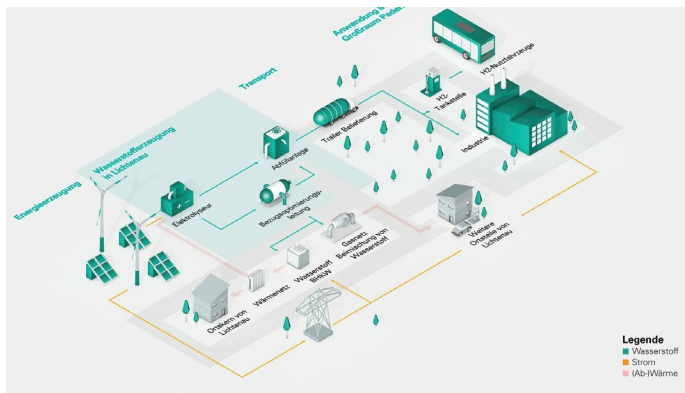
Start: 2027

Operator: Air Liquide, Siemens Energy

Info: de.airliquide.com/greenmotionsteel

Hydrogen for large industrial customers in the Rhine and Ruhr regions

- Construction of a 120 MW electrolyser at the Marl Chemical Park to produce renewable hydrogen.
- Annual production of up to 18,400 tonnes of H_2 , which is to be used in the steel and chemical industries, refineries and transport, among other sectors.
- Integration into Air Liquide's existing H_2 transmission network (240 km) and into the future European Hydrogen Backbone.



© Westfalen Weser Netz



Location: Lichtenau

Start: 2027

Operator: Lichtenau Municipal Utilities,
Westfalen Weser

Info: www.lichtenau.de

Locally produced hydrogen for industry and filling stations

- Construction of a 10 MW electrolyser to produce green hydrogen using surplus wind energy from nearby wind farms.
- Supply to, amongst others, the local steel and cement industries, which require process heat at high temperatures.
- Testing of seasonal storage of H_2 e in an existing high-pressure gas pipeline (6 km), which is being converted from natural gas to hydrogen.
- Waste heat from the electrolyser is to be fed into the local heating network.



© AdobeStock/Ralf Umer



Location: Hamm-Uentrop

Start: 2027

Operator: Stadtwerke Hamm, Trianel,
Stadtwerke Bochum, DSW21

Info: www.trianel.com

Electrolyser for regional supply to public transport, logistics and industry

- Construction of a 20 MW electrolyser on the site of the gas-fired power station in Hamm-Uentrop for the production of green hydrogen from renewable energy.
- Wind power and photovoltaic plants in the Hamm region will be used to operate the electrolyser.
- Expected annual production of around 1,500 tonnes of hydrogen for public transport, logistics companies and regional industrial enterprises.



© iStock/lukasek



Location: Bedburg

Start: 2026

Operator: RWE Generation, Town of Bedburg

Info: projekte.rheinisches-revier.de

Hydrogen production on reclaimed opencast lignite mining land

- Construction of a 5 MW electrolysis plant to produce green hydrogen from local wind and solar power.
- Due to the lack of a connection to the core hydrogen network, the hydrogen will be distributed in the region using tanker lorries.
- Construction of a filling station for tankers and an additional hydrogen refuelling station.
- Planned future expansion of electrolysis capacity to up to 15 MW.



© AdobeStock/Marcus Retkowitz



Location: Coesfeld area

Start: 2028

Operator: EMERGY, Gelsenwasser,
Stadtwerke Münster, Trianel

Info: gelsenwasser.de

Regional H₂ production and feed-in to the hydrogen backbone network

- Construction of an electrolyser (approx. 50 MW) designed to produce H₂ from predominantly regionally generated green electricity.
- The hydrogen produced is to be fed directly into the core hydrogen network, thereby supporting security of supply and the decarbonisation of industry in the Münsterland region and beyond.

Hydrogen projects Import





© AdobeStock/Sliver



Location: Yanbu, Rostock

Start: 2030

Operator: Acwa, EnBW, VNG,
ROSTOCK PORT

Info: www.enbw.de

Hydrogen from the desert to Rostock

- Green hydrogen is to be produced in Saudi Arabia and transported by ship to Rostock in the form of green ammonia (NH_3).
- The seaport of Rostock is set to become a central import hub for climate-neutral molecules. Once it has been unloaded, the ammonia will be stored, transported onwards or converted back into hydrogen using an ammonia cracker located near the port.
- In early 2026, the partners signed a memorandum of understanding to develop a long-term supply chain for green ammonia between Saudi Arabia and Germany.



© AdobeStock/snapshotfreddy



Location: Brunsbüttel

Start: 2024

Operator: Yara International

Info: www.yara.de

Import of hydrogen derivatives

- The site of the Norwegian chemical group Yara, situated on the North Sea and the Kiel Canal, offers excellent conditions for imports into Germany and onward distribution across Europe.
- Up to three million tonnes of low-CO₂ -emission ammonia or 530,000 tonnes of hydrogen can be imported into Europe annually.
- The ammonia can be delivered directly from the terminal to customers or 'cracked' into low-emission hydrogen and fed into the future hydrogen backbone network.

Ammonia import terminal at the Port of Duisburg



© Duisburger Hafen AG/Hans Blossey



Location: Duisburg

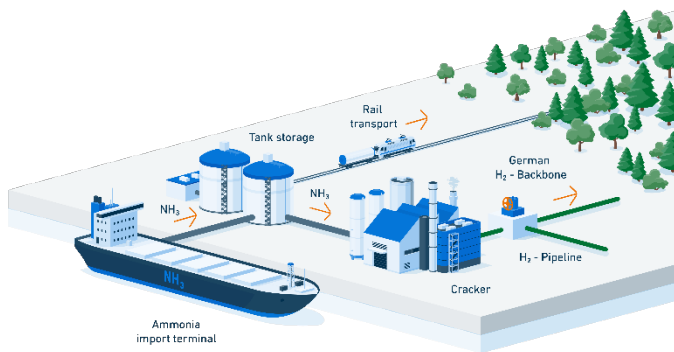
Start: by 2030

Operator: Duisburger Hafen AG,
LBC Tank Terminals Group B.V.

Info: duisport.de

Energy hub for NH_3 and CO_2

- Plans are in place to build a new terminal at Rheinkai Nord in Duisburg.
- A direct logistics link using inland waterway vessels is to be established between Vlissingen (NL), Rotterdam (NL), Amsterdam (NL), Antwerp (BE) and Duisburg.
- Imported green ammonia (NH_3) is to be received and stored in Duisburg and converted on site into hydrogen (via cracking).
- The terminal is also to receive captured CO_2 from industrial processes and prepare it for onward transport to offshore storage.



© Uniper



Location: Wilhelmshaven

Start: 2030

Operator: Uniper

Info: www.uniper.energy

Importing hydrogen using ammonia

- Plans are in place to build a hydrogen import terminal at the deep-water port of Wilhelmshaven. Ammonia will be imported by ship, then converted into hydrogen on site and fed into the German hydrogen backbone network, with a view to connecting to the European Hydrogen Backbone in the future.
- Annual capacity of up to 2.6 million tonnes of ammonia, equivalent to 350,000 tonnes of hydrogen.
- Connection to rail logistics and storage infrastructure.

Hydrogen projects Import routes





© AdobeStock/fotowunsch



Location: HE/BW/BY

Start: 2032

Operator: terranets bw

Info: www.terranets-sel.de

New natural gas pipeline facilitates the phase-out of coal and will later transport hydrogen

- The 250-kilometre-long South German Natural Gas Pipeline will initially be operated as a natural gas pipeline to supply power stations with gas.
- From the early 2030s, the SEL will transport large quantities of hydrogen through Baden-Württemberg.
- The first anchor customers are gas-fired power stations converted to hydrogen. The SEL is therefore being designed to be H₂ -ready from the outset.



© iStock/ZU_09



Location: BW/FRA

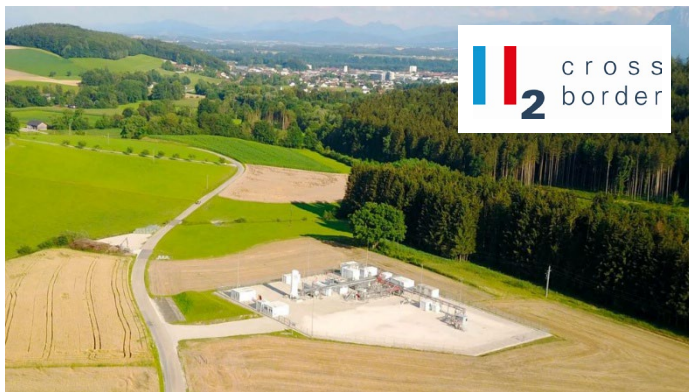
Start: from 2029

Operator: badenovaNETZE, NaTran,
terraneTS bw,

Info: www.badenovanetze.de

H₂ conversion and connection of existing pipelines to France and the European Hydrogen Backbone

- The cross-border RHYn Interco project connects Baden-Württemberg with neighbouring France to source 100% hydrogen.
- Initially, 15 km of new pipeline will be built to connect to an existing terraneTS bw pipeline, thereby supplying the Freiburg im Breisgau region with hydrogen from 2029.
- Subsequently, by 2035, the Offenburg/Kehl region will be reached through the repurposing of a further 60 km of existing pipeline.



© RAG



Location: Haiming, Burghausen

Start: 2024

Operator: bayernets, MEGGLE, RAG
Austria AG, Shell Energy
Germany

Info: www.rag-austria.at

Pipeline-based H₂ supplies from Austria to Germany from 2024

- An electrolysis plant in Pilsbach (Upper Austria) produces green hydrogen, which is blended into the local natural gas network (known as 'blending').
- As part of the project, the hydrogen is transferred to the bayernets transmission network at Haiming and Burghausen.
- The technical requirements for cross-border hydrogen transport are in place.



© OGE



Location: Germany

Start: 2028

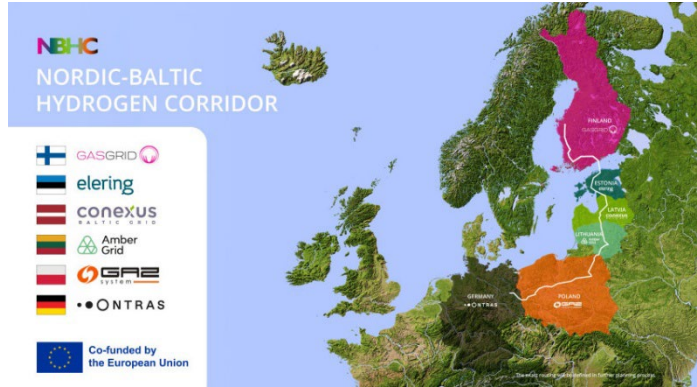
Operator: OGE, RWE, et al.

Info: www.h2ercules.com

Hydrogen from north to south

- A hydrogen network approximately 1,500 km long will be constructed using newly built and repurposed pipelines. Gas-fired power stations with a capacity of at least 2 GW and hydrogen storage facilities are planned.
- The network is due to be completed from west to north – i.e. from the Ruhr region to Wilhelmshaven – in 2028, before the southern section is finalised in 2030.
- H₂ -imports via the ports in Lower Saxony or via pipelines from neighbouring countries are to be transported to users.

Nordic-Baltic Hydrogen Corridor (NBHC)



© NBHC



Location: Finland-Germany

Start: 2033

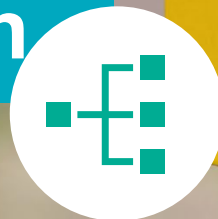
Operator: ONTRAS + 5 European TSOs

Info: nordicbaltichydrogencorridor.com

Cross-border hydrogen corridor from Finland to Germany

- Joint initiative by six European transmission system operators.
- Construction of an approx. 2,500 km long hydrogen backbone through Finland, Estonia, Latvia, Lithuania, Poland and Germany.
- The EU-funded NBHC is part of the European Hydrogen Backbone and is expected to transport around 2.7 million tonnes of hydrogen annually in the future.

Hydrogen projects Transport & Distribution



AUFBAU DES BERLINER WASSERSTOFFNETZES SOLL IN DREI PHASEN ERFOLGEN

In drei Phase von den großen zu den kleineren Verbrauchern, i.W. auf Basis von Leitungsumwidmung

Startnetz (Fertigstellung ab 2035)
I. Anbindung der Netzschlüsse >500MW



Startnetz und weiterer Ausbau
II. Anbindung der Netzschlüsse >30MW

III. Nach Bedarf Erweiterung in Wohn & Gewerbequartiere

© NBB



Location: Berlin

Start: 2035

Operator: NBB

Info: www.nbb-netzgesellschaft.de

Converted gas network to enable future H₂ e supply to large-scale consumers in Berlin

- Conversion of two existing high-pressure pipelines, totalling 60 km in length, from natural gas to hydrogen and connection to the core hydrogen network.
- The converted network is intended to connect large consumers with a demand of more than 500 MW by 2035.
- Enables the conversion of thermal power stations to hydrogen, which currently account for 50% of Berlin's total gas demand.



© GASCADE



Location: Lubmin-Bobbau

Start: 2025

Operator: GASCADE

Info: www.gascade.de

World's longest hydrogen pipeline, spanning 400 km, completed

- 400 km of existing natural gas pipelines (diameter 1,400 mm) have been converted.
- Hydrogen transport from Lubmin in Mecklenburg-Western Pomerania to Bobbau in Saxony-Anhalt has been possible since December 2025.
- The pipeline creates the conditions for transporting hydrogen from onshore and offshore production in the Baltic Sea region, as well as international H₂ e imports, southwards via the Port of Rostock.



© GASCADE Gastransport GmbH



Location: North Sea

Start: 2026

Operator: GASCADE

Info: aquaductus-offshore.de

GW-scale offshore hydrogen pipeline in the German North Sea

- The first planned offshore hydrogen pipeline in the German North Sea is set to transport green hydrogen from wind farms to the mainland and feed it into the German core hydrogen network.
- A total of around 500 kilometres of pipeline infrastructure is planned: 400 km of offshore pipeline in the North Sea and 100 km of onshore connection to the German core hydrogen network.
- In the long term, a transport capacity of up to 20 GW is planned. This makes AquaDuctus one of the largest hydrogen infrastructure projects in Europe.



© AdobeStock/fotowunsch



Location: FRA/DEU border region

Start: 2026

Operator: Creos Germany

Info: www.creos-net.de

Cross-border hydrogen network between Saarland and France

- A hydrogen pipeline is planned between Carling, Bouzonville and Dillingen; 70 per cent of it will consist of converted pipelines.
- Hydrogen production projects in the border region will be connected via the network to hydrogen consumers in Saarland.
- The isolated network could potentially be integrated into German and European hydrogen networks at a later stage, e.g. Hy4link, HYFen and MEGAL in the hydrogen core network.



© bayernets



Location: Burghausen-Gendorf

Start: 2026

Operator: bayernets

Info: www.hypipe-bavaria.com

Hydrogen transport to and through Bavaria

- Plans are in place to develop a hydrogen network by 2030, running from Austria via Munich and Ingolstadt towards Baden-Württemberg. This will open up the H2 import route from Southern and Eastern Europe for the German market.
- HyPipe Bavaria is part of the 'SouthH2 Corridor' project, which envisages a hydrogen transport corridor approximately 3,300 km long, stretching from North Africa via Italy to Bavaria.
- The first section of the pipeline in the Bayer Chemical Triangle is due to come into operation in 2026.



© H2GeNeSiS



Location: Stuttgart-Esslingen

Start: December 2026

Operator: Esslingen Municipal Utilities,
Stadtwerke Stuttgart

Info: h2genesis.region-stuttgart.de

New H₂ pipeline will transport green hydrogen along the Neckar

- Construction of an approx. 9-kilometre-long hydrogen pipeline between Stuttgart Harbour and Esslingen along the Neckar Valley.
- In particular, when combined with an electrolyser (Green Hydrogen Hub Stuttgart), this will form the basis for a green hydrogen economy in the region.
- The pipeline will serve a range of users, including residential areas, industry-related businesses and the transport sector.



© Rh2ein-Main Connect



Location: Frankfurt/Rhine-Main

Start: 2030

Operator: ENTEGA, Mainova, ESWE,
KWM, OGE, GASCADE

Info: kmw-ag.de/rh2ein-main-connect

Regional hydrogen distribution network for the Frankfurt/Rhine-Main metropolitan region

- Several connections (approx. 210 km) to the national hydrogen backbone network are intended to supply the metropolitan region with climate-neutral hydrogen.
- The first section is to be newly constructed by 2030 and will supply the first anchor customers with H₂.
- Subsequently, existing natural gas pipelines will be converted to enable the distribution of hydrogen across the region.

Main-Kinzig / Lower Bavarian Main Hydrogen Project



© PPS Pipeline Systems GmbH

Connection to the national hydrogen core network

- Connection of the Main-Kinzig / Bavarian Lower Main region to the hydrogen core network via a transport pipeline to be constructed.
- Supply of hydrogen to anchor customers (paper and cement industries) and existing natural gas areas.
- Cross-border cooperation between various utility companies and gas network operators.



Location: Main-Kinzig/Bavarian Lower Main

Start: from approx. 2028

Operator: Main Kinzig Netze, NRM, terranets BW, Gascade et al.

Info: www.nrm-netzdienste.de



© DBI



Location: Bitterfeld-Wolfen

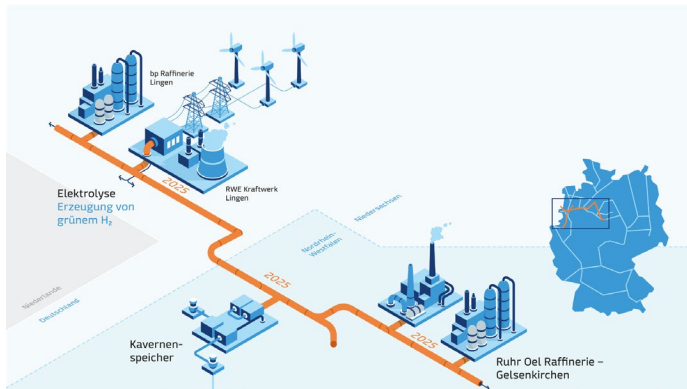
Start: 2019

Operator: MITNETZ GAS, DBI, HTWK
Leipzig

Info: mitnetz-gas.de/green-gases/hydrogen-test-field

Hydrogen testing under real-world conditions

- Using a test infrastructure (including a 1,400 m long distribution network) across a test area of 12,000 km², research is being conducted under real-world conditions to investigate how 100% hydrogen can be distributed safely, cost-effectively and in an environmentally friendly manner.
- Assessing the H₂ -readiness of products and technologies for use in commercial and domestic settings.
- Practical experience is being gained and the foundations laid for the conversion of the existing gas infrastructure to hydrogen.



© GET H2



Location: Lingen-Gelsenkirchen

Start: 2025/2030

Operator: bp, Evonik, Nowega, OGE, RWE

Info: www.get-h2.de

Green hydrogen from the Emsland region for large-scale industry in the Ruhr area

- An electrolyser (300 MW in three expansion phases) is to be used to produce hydrogen on an industrial scale in Lingen.
- A network approximately 130 kilometres long, stretching from Lingen to Gelsenkirchen, connects the hydrogen production facility with industrial consumers in the Ruhr region.
- The network will be commissioned in stages from 2025, with connection to the cavern storage facility in Gronau-Epe by 2026 and to the hydrogen core network.



© AdobeStock/fotowunsch



Location: Northern Lower Saxony

Start: 2027

Operator: EWE NETZ / GTG NORD

Info: clean-hydrogen-coastline.de

Regional connection to the core hydrogen network in Lower Saxony

- 239 km of pipelines will be upgraded (62%) or newly constructed, thereby connecting the regional infrastructure to the German core hydrogen network.
- The new transport infrastructure in north-west Germany links electrolyzers, H₂ -import terminals and storage facilities.



© Uwe Trölle



Location: Northern Lower Saxony

Start: 2032

Operator: Gasunie

Info: www.hyperlink-gasunie.de

Central hydrogen infrastructure in north-west Germany

- Conversion of a total of 1,000 km of pipelines to hydrogen.
- Key industrial regions will be connected to hydrogen storage facilities, electrolyzers and import hubs in Denmark and the Netherlands.
- Connection
 - Netherlands – Greater Hamburg and Salzgitter
 - Denmark – Hamburg/Stade
 - Bremen region – GET H2/Ruhr region
 - Bremen – Wolfsburg and the East German hydrogen core network



© AdobeStock/Marco2811



Location: Hamburg

Start: 2024–2027

Operator: Hamburger Energienetze

Info: hamburger-energienetze.de

Hydrogen Industry Network for Hamburg

- Construction of a 60 km hydrogen distribution network to supply energy-intensive industry in the Port of Hamburg with hydrogen.
- Pipelines will initially connect customers from industry, transport and mobility with the electrolyzers at the Green Hydrogen Hub on the former Moorburg coal-fired power station site.
- In addition, the planned Hamburg network will be connected to the core hydrogen network.



© AdobeStock/Tobias Arhelger



Location: Arnsberg region

Start: 2027

Operator: Westnetz, a consortium of 21 companies and institutions

Info: hydronet.energy

Hydrogen economy powered by renewable energy in the Sauerland

- Major project to develop a hydrogen economy in the Sauerland region with a complete value chain.
- Use of an 11 km-long natural gas pipeline, which is being converted for hydrogen, as well as testing of H₂ e production using electrolysis and plasmalysis.
- Focus on medium-sized industrial companies (including paper, metal and automotive suppliers) that require hydrogen for process heat and production.
- The project is intended to serve as a blueprint for other regions.



© Westnetz



Location: Holzwickede

Start: 2022

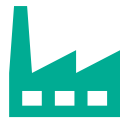
Operator: Westnetz, DBI

Info: www.westenergie.de

100 per cent hydrogen in the German natural gas network for the first time

- A research and development project unique in Germany.
- Conversion of an existing approx. 500 m long medium-pressure natural gas pipeline to 100 per cent green hydrogen by disconnecting it from the distribution network and connecting it to an H₂ storage facility.
- Supply to three connected commercial customers who generate part of their space heating using hydrogen condensing boilers.

Hydrogen projects Industry





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Location: Dillingen, Völklingen

Start: 2023/2028

Operator: SHS – Stahl-Holding-Saar

Info: pure-steel.com/power4steel

Saarland's steel industry is focusing on hydrogen-based direct reduction

- Construction of a direct reduction plant in Dillingen, where 2 million tonnes of sponge iron will be produced using green hydrogen for the two steelworks in Dillingen and Völklingen.
- With two new electric arc furnaces at the plants, 3.5 million tonnes of crude steel can be produced annually in future, and CO₂ emissions can be reduced by up to 55% by the early 2030s.
- From 2045, climate-neutral production of around 4.9 million tonnes of steel is planned.



© AdobeStock/alpegor



Location: Bremen

Start: 2022

Operator: swb, EWE, ArcelorMittal

Bremen, APEX

HAW Hamburg, iplas

Info: hybit.org

Green hydrogen for Bremen steelworks

- The focus is on the transformation of large-scale industrial infrastructures (so-called hydrogen hubs) in Bremen and northern Germany.
- The central starting point for the project in Bremen's industrial port is the ArcelorMittal steelworks, the region's main emitter, and its transition to climate-neutral hydrogen.
- An electrolyser (10 MW) is being built at the power station site in Bremen-Mittelsbüren and connected directly to the steelworks' existing hydrogen network.



© AdobeStock/Sándor Kotyrba



Location: Salzgitter

Start: 2020

Operator: Salzgitter Flachstahl, Sunfire

Info: salzgitter-flachstahl.de

Hydrogen for low-CO₂ -emission steel production in Salzgitter

- Operation of a high-temperature electrolyser based on solid oxide electrolyser cells (SOEC) with the commercial objective of producing >100 tonnes of green H₂ e for less than €7/kg.
- Much of the required infrastructure was already in place on site – from waste heat to the hydrogen pipeline and the green electricity supply.
- The project serves as a feasibility study to produce hydrogen in the most energy-efficient way possible, replacing coal in the conventional blast furnace process.



© AdobeStock/DedMityay



Location: Salzgitter

Start: 2022

Operator: Salzgitter Flachstahl

Info: salcos.salzgitter-ag.com

Steel production using a direct reduction plant powered by hydrogen and natural gas

- The world's first direct reduction plant (DRI plant) capable of flexible operation using hydrogen and natural gas within an integrated steelworks.
- The plant offers the flexibility to use both natural gas and hydrogen in varying proportions (0–100%).
- CO₂ emissions from crude steel production can thus be reduced by up to 95% in future.
- The plant's own production of green hydrogen is being tested in the GrInHy 2.0 project to supply the DRI plant.



© iStock/sykono



Location: Hamburg

Start: 2024

Operator: AURUBIS

Info: www.aurubis.com

Energy-intensive copper production to be converted to hydrogen

- As one of the first copper smelters worldwide, the Hamburg plant of the multi-metal and recycling company will in future be able to use hydrogen instead of natural gas for reduction in its anode furnaces.
- To date, the processing of raw copper has been carried out using natural gas. Operating the anode furnaces with hydrogen offers a potential saving of 5,000 tonnes of CO₂ e per year.



© iStock/deepblue4you



Location: Leipzig

Start: 2027

Operator: BMW Group Leipzig Plant,
ONTRAS, MITNETZ GAS

Info: www.ontras.com

World's first car manufacturing plant with a hydrogen pipeline

- Construction of an approx. 2 km long pipeline for connection to the core hydrogen network.
- At the BMW plant in Leipzig, hydrogen is already being used in intralogistics (including forklift trucks) and in the paint shop.
- The future connection pipeline is intended to replace the delivery of hydrogen in pressurised cylinders by lorry.
- The BMW Groups Regensburg Plant is also gradually switching its intralogistics to hydrogen by 2031.



© AdobeStock/Govert Nieuwland



Location: Duisburg

Start: 2016–2028

Operator: thyssenkrupp Carbon2Chem,
Fraunhofer UMSICHT

Info: [thyssenkrupp-decarbon-
technologies.com](https://thyssenkrupp-decarbon-technologies.com)

Conversion of industrial waste gases into chemical feedstocks

- Development of CCU technologies to reduce industrial emissions whilst simultaneously producing commercially viable precursors for fuels, plastics or fertilisers.
- Climate-neutral hydrogen is used to generate synthesis gas from steel production waste gases, which is then utilised to manufacture key products such as methanol, ammonia or other valuable feedstocks.
- In addition to steel production, the technologies developed are set to be used in other industrial sectors in the future.



© AdobeStock/tbarth



Location: Münster

Start: 2024

Operator: Janinhoff GmbH & Co. KG

Info: einer-geht-voran.de

Climate-neutral clinker production using hydrogen at a family-run business

- Janinhoff is the first brick and clinker plant in Germany to switch its entire production from natural gas to 100% green hydrogen.
- The production conversion is taking place whilst operations continue – including the extension of the kiln, efficiency measures and preparation of the grid connection for hydrogen.
- In the long term, the use of hydrogen is expected to save over 100,000 tonnes of CO₂ e per year.



© Wilo



Location: Dortmund

Start: 2022

Operator: Wilo

Info: wilo.com

Modular system for electricity and heat supply

- Development of a modular system as a pilot plant for the production, storage and use of green hydrogen.
- Produces up to 10 tonnes of green hydrogen per year from solar power and treated rainwater, which can be converted back into electrical energy via a fuel cell. Waste heat is used for heating or to generate cooling.
- Series production of the system for decentralised energy supply in industrial and private applications is planned.



© AdobeStock/Maren Winter



Location: Duisburg

Start: 2025

Operator: Duisburger Hafen AG,
SW Duisburg, Fraunhofer
UMSICHT, et al.

Info: green-terminal.ruhr

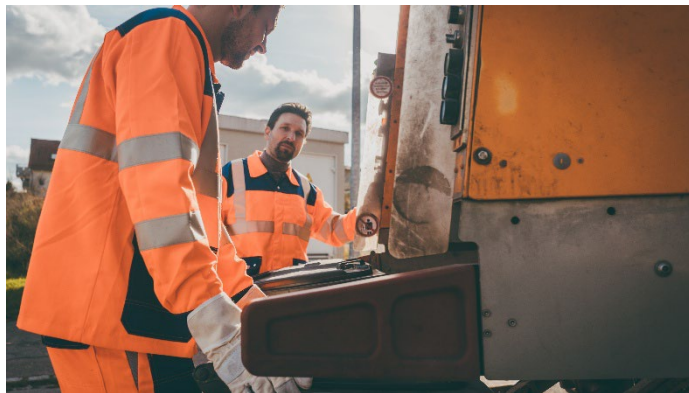
Green electricity & hydrogen for Duisburg container terminal

- A local, hydrogen-based energy system that provides both electricity and heat for cranes, buildings, shore power facilities and charging points.
- Use of photovoltaics (1.3 MWp), battery storage (1.5 MW / 1.6 MWh), hydrogen-powered combined heat and power units (2× 931 kW electrical) and two PEM fuel cells (2× 600 kW).
- Offers options for connecting the energy system to surrounding neighbourhoods or industrial enterprises.



Hydrogen projects Mobility





© AdobeStock/kzenon



Location: Freiburg

Start: 2026

Operator: Waste Management and
City Cleaning Freiburg

Info: www.remondis-aktuell.de

Climate-neutral waste collection in Freiburg using green hydrogen

- By the start of next year, Freiburg im Breisgau will be operating its entire waste collection fleet in a CO₂ -neutral manner using 22 fuel cell vehicles.
- A newly built electrolysis plant produces 140 tonnes of green hydrogen annually. The electricity required is generated by a 2.4-hectare PV plant with a capacity of 2.6 MWp.
- The City of Freiburg, ASF and badenova have built a hydrogen refuelling station at Eichelbuck.



© AdobeStock/polack



Location: Heidelberg/Mannheim

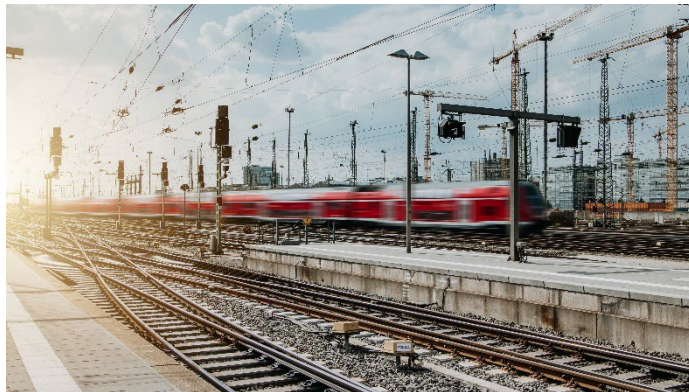
Start: 2025

Operator: Rhein-Neckar-Verkehr

Info: www.h2rivers.de

The entire articulated bus fleet in Mannheim and Heidelberg is running on hydrogen and is climate-neutral

- Construction of two hydrogen refuelling stations in Heidelberg and Mannheim.
- Replacement of existing diesel vehicles as part of the regular fleet renewal with 40 buses powered by fuel cells.
- The new vehicles can easily cover distances of around 400 km and operate for over 19 hours.



© AdobeStock/MKS



Location: Berlin-Barnim

Start: 2024/2026

Operator: Niederbarnimer Eisenbahn,
ENERTRAG, Barnimer
Kreiswerke

Info: www.neb.de/wasserstoffzug

Zero-emission H₂ -powered rail service between Berlin and Brandenburg

- Replacement of five diesel-powered trains with zero-emission hydrogen-powered trains on the non-electrified regional railway line 27, the “Heidekrautbahn”, from Berlin to the northern Barnim/Oberhavel area.
- From 2026, ENERTRAG’s Wensickendorf hydrogen plant will produce green hydrogen from wind and solar energy using an electrolyser.
- A hydrogen refuelling station is being built by Kreiswerke Barnim to refuel the trains.

H₂ -trucks in the “Pegasus” project



© AdobeStock/photoschmidt

Development, production and testing of 100 heavy-duty fuel cell trucks

- Daimler Truck is the first European manufacturer to produce a series-production truck that runs on liquid hydrogen.
- 100 fuel cell lorries for long-haul transport are being developed, produced and tested in real-world customer operations.
- Demonstrates the technical and operational feasibility of zero-emission, hydrogen-based long-haul lorries.



Location: Stuttgart, Mannheim, Gaggenau, Wörth

Start: 2024

Operator: Daimler Trucks

Info: www.daimlertruck.com



© AdobeStock/brudertack69

Hydrogen refuelling station and H₂ -bus fleet enable emission-free transport

- Construction and commissioning of a public hydrogen refuelling station in the city centre, which will be used to refuel the municipal utility's fleet as well as vehicles belonging to regional logistics companies.
- Stadtwerke Aschaffenburg has 12 buses and one refuse collection vehicle powered by fuel cells (a quarter of the entire fleet).



Location: Aschaffenburg

Start: 2024

Operator: Aschaffenburg Municipal Utilities

Info: www.stwab.de/wasserstoff



© iStock/rasica



Location: Alb-Donau district

Start: 2024–2027

Operator: H2-Wandel, IVECO,
Ulm University of Applied Sciences,
ZSW

Info: www.h2-wandel.de/leuchttuerme

Hydrogen for fuel cell powertrains in lorries and light commercial vehicles

- Focus on the use of green hydrogen in heavy commercial vehicles, particularly in articulated lorries, as well as in light commercial vehicles, such as those used in the trades.
- Construction of a hydrogen refuelling station in an industrial estate.
- Deployment of ten tractor units at logistics companies in the Mittlere Alb – Danube – East Württemberg region



© TU Berlin/EBMS

World's first zero-emission push boat uses hydrogen and batteries

- The power for the ship's engine is supplied solely by the batteries and/or the fuel cells. Depending on the operating conditions, the energy supply and the feed-in from the energy sources are optimised.
- With 750 kg of hydrogen in its tanks and a battery capacity of approximately 2,500 kilowatt-hours, the vessel has a range of at least 400 kilometres when in operation, with a bollard pull of 1,400 tonnes.
- The vessel is primarily intended for use in freight transport between Berlin and Hamburg, as well as for inner-city transport in Berlin.



Location: Berlin-Hamburg

Start: 2021

Operator: ELEKTRA-Konsortium

Info: www.tu.berlin/ebms/



© GP JOULE



Location: North Frisia
Start: 2025
Operator: GP JOULE
Info: www.efarm.nf

Hydrogen refuelling station and production in North Frisia

- The largest sustainable hydrogen mobility project in Germany to date, using exclusively renewable hydrogen.
- Five electrolyzers supply two H₂ filling stations in Husum and Niebüll, serving public transport, amongst other things.
- In Bosbüll, the waste heat generated during electrolysis is also fed into a local heating network.



© GP JOULE



Location: Bremerhaven

Start: 2022

Operator: Hy.City.Bremerhaven

Info: efarm.nf/hycitybremerhaven

Regional hydrogen ecosystem for clean mobility

- An electrolyser (2 MW) converts electricity from regional wind turbines into green hydrogen.
- H_2 Hydrogen storage and transport to a hydrogen refuelling station via mobile storage containers.
- The amount of hydrogen produced is sufficient to refuel up to 34 buses or over 190 cars daily.



© Stadtwerke Nienburg

Hydrogen refuelling station with its own electrolyser and solar park

- Construction of an H₂ station supplied by its own on-site electrolyser (using a newly built solar park (approx. 2 MW, approx. 20,000 m²).
- 130 kilograms of hydrogen can be produced per day.
- The aim is to supply public transport and heavy goods vehicles with green hydrogen.



Location: Nienburg

Start: 2025

Operator: Stadtwerke Nienburg

Info: www.h2-nienburg.de



© EWE



Location: Cuxhaven

Start: 2023

Operator: Turneo

Info: www.turneo.de

Green electricity from hydrogen powers transport vessel

- An electrolyser (2 MW) produces hydrogen in Cuxhaven, which is transported in tank trailers to the supply vessel Coastal Liberty.
- On board the ship, the hydrogen is converted into electricity using a fuel cell. The electricity is stored in batteries, which power the ship's electric motor.
- In the future, the electrolyser is also set to produce hydrogen for other ships and a hydrogen refuelling station in Cuxhaven.



© Adobe/Boris Franz



Location: Rotterdam-Basel

Start: 2019

Operator: Province of South Holland,
Ministry of Economic Affairs of
North Rhine-Westphalia

Info: rh2ine.eu

Cross-border infrastructure for hydrogen in inland waterway transport

- An international initiative involving over 40 partners from six countries aimed at decarbonising inland waterway transport along the Rhine.
- The aim is to establish a comprehensive hydrogen ecosystem comprising H₂ vessels, port infrastructure, refuelling solutions, logistics and an integrated supply chain.
- Deployment of the first hydrogen-powered inland vessels, including the H₂ long-distance vessel MS Laetitia, which operates regularly between Rotterdam and Duisburg.



© AdobeStock/Dusan Petkovic



Location: Cologne/Bonn area

Start: 2020

Operator: Regionalverkehr Köln RVK

Info: www.rvk.de

Europe's largest hydrogen bus fleet, with over 100 vehicles in operation

- CO₂-free public transport in the Cologne/Bonn region with 160 hydrogen buses from various manufacturers.
- Fuel cell-powered buses meet the requirement to achieve a range of 350 km per day all year round, even in topographically challenging areas.
- Establishment of a dedicated hydrogen refuelling infrastructure (refuelling stations, compressor stations, trailer logistics) that supplies the buses with 100% green hydrogen.



© AdobeStock/Christian Schwier



Location: Rhine-Ruhr region

Start: 2024

Operator: over 100 hauliers, H2
networks, local authorities and
research institutions

Info: www.rvk.de

Development of multiple infrastructure systems for H₂ -powered mobility in the metropolitan area

- Construction of electrolyzers and refuelling stations at key junctions and transport hubs in Düsseldorf, Wuppertal, Essen, Gelsenkirchen and Dorsten.
- H₂ Hydrogen refuelling facilities are to be networked to create the infrastructural conditions for climate-neutral heavy goods transport and public transport.
- Plans include the construction of an H₂ refuelling station at Düsseldorf Airport to supply H₂ commercial vehicles, as well as the construction of electrolyzers at the waste incineration plants in Wuppertal and Düsseldorf for H₂ bus fleets.

Hydrogen projects Power generation





© Stadtwerke Kiel



Location: Kiel

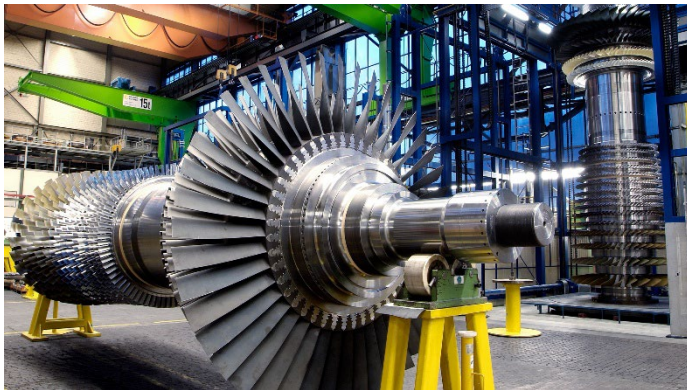
Start: 2035

Operator: Stadtwerke Kiel, INNIO

Info: www.stadtwerke-kiel.de

Electricity and district heating from hydrogen

- Stadtwerke Kiel's coastal power station supplies district heating to more than 73,500 households and generates electricity for the region.
- Stadtwerke Kiel and INNIO are working on converting the world's first 190 MW large-engine combined heat and power plant in Kiel to run on 100% green hydrogen.
- 20 gas engines in four units are being converted from natural gas to hydrogen.



© SIEMENS AG



Location: Leipheim

Start: by 2030

Operator: LEAG

Info: www.leag.de

Grid stability on demand with a modern gas-fired power station – future H₂ -ready

- The Leipheim gas-fired power station has an electrical output of 300 megawatts (MW) and is used exclusively for grid stabilisation and security of supply on demand.
- Plans are in place to expand the existing power station, which went into operation in 2023, with a hydrogen-compatible unit of a similar scale.
- The future H₂ -ready power station is to generate electricity on a regular basis using a gas and steam turbine and feed it into the grid.



© AdobeStock/S. Külli



Location: Stuttgart

Completion: April 2025

Operator: EnBW

Info: www.enbw.com

Hydrogen-compatible power station for regional security of supply

- Conversion of the Stuttgart-Münster combined heat and power plant, initially from coal to natural gas.
- Two hydrogen-compatible gas turbines (124 MW electrical output / 370 MW district heating output) have been installed. The power station is thus one of the first in Germany capable of generating electricity from hydrogen.
- The turbines are used to supplement the existing waste incineration plant should it be unable to produce sufficient heat.



© AdobeStock/mmmuenzl



Location: Altbach

Start: 2027

Operator: EnBW

Info: www.enbw.com

Historic power station site to become H₂-ready with a combined cycle gas turbine plant

- Conversion of the power station from hard coal to natural gas as a bridging technology.
- ²The new combined cycle gas turbine plant (665 MW electrical output / 180 MW district heating output) reduces CO₂ emissions by more than 50% compared to the previous coal-fired operation.
- ²The power station is already 20% hydrogen-ready and can later be operated entirely on hydrogen to generate climate-neutral electricity and district heating.



© AdobeStock/Andreas Gruhl



Location: Heilbronn

Start: End of 2026

Operator: EnBW

Info: www.enbw.com

H₂-ready combined cycle power station replaces coal-fired unit

- Conversion of the power station from hard coal to natural gas as a bridging technology.
- ²The new combined cycle gas turbine plant (710 MW electrical output / 190 MW district heating output) is already 20% hydrogen-ready and can be fully converted to hydrogen at a later date.
- The combined cycle plant ensures the district heating supply for 300 industrial customers and commercial enterprises, including Audi AG in Neckarsulm, as well as approximately 150 residential buildings.
- The district heating network is being modernised in parallel from steam to hot water operation



© Uniper



Location: Gelsenkirchen-Scholven

Start: Ongoing

Operator: Uniper

Info: www.uniper.energy

Coal-fired power station transformed into a modern energy hub

- The Scholven 1 combined cycle power station (140 MW) was commissioned in 2024 and forms the basis for the phase-out of coal at the Scholven site. It supplies electricity, process steam and district heating to industrial customers and the regional heating network.
- Planning for an H₂-ready combined cycle power station (870 megawatts) Scholven 2.
- A demonstration plant for ammonia cracking is currently under construction; it will be capable of producing up to 4 tonnes of hydrogen per day from approximately 28 tonnes of ammonia, with commissioning scheduled for the end of 2026.

Hydrogen projects Heating





© Avacon

**Location:** Schopisdorf**Start:** 2019–2023**Operator:** Avacon, DVGW, EBI, GWI**Info:** www.dvgw.de/h2-20

Blending of up to 20 per cent hydrogen into the gas network possible

- In the pilot project, up to 20 per cent hydrogen was blended into an existing and representative gas distribution network (approx. 35 km) in Saxony-Anhalt over two heating seasons.
- Compatibility with existing appliances (over 350 in the project) was demonstrated without any need to alter the appliance settings.
- The scientifically monitored field test demonstrated that gas application technology is suitable for blending and serves as a model for the future use of climate-neutral hydrogen in gas distribution networks.



© NetzeBW



Location: Öhringen

Start: 2025

Operator: NetzeBW

Info: www.netze-bw.de

Climate-neutral heat supply using 100 per cent hydrogen in the gas network

- Conversion of a natural gas network operating in island mode to pure hydrogen, produced using an EnBW electrolyser.
- The hydrogen is used to heat buildings.
- Is continuing the NETZlabor Wasserstoff-Insel Öhringen project, in which 30 per cent hydrogen has already been successfully fed into the grid.
- The complete conversion to hydrogen demonstrates that safe and reliable operation of the natural gas network remains possible even with hydrogen.



© Thüga



Location: Hohenwart

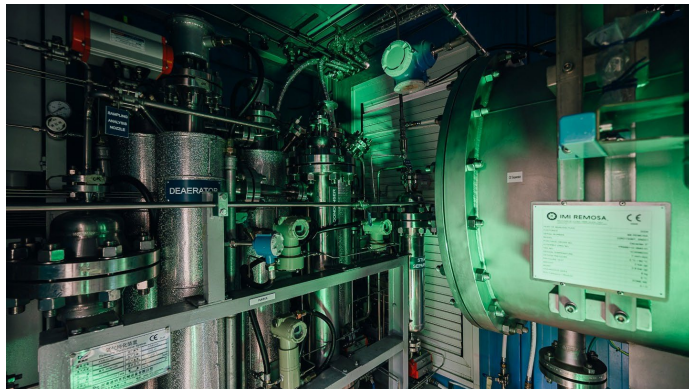
Start: 2023/2027

Operator: Energie Südbayern, Thüga,
Energienetze Bayern

Info: <https://www.esb.de/h2direkt>

100% hydrogen for heating with local production

- The initially temporary pilot project “H2Direkt” is being continued under the new name “H2Dahoam”.
- Successful conversion of a gas distribution network to 100 per cent H₂. Ten private households and one commercial business have been heating with green hydrogen since 2023.
- Plans are underway to build an on-site electrolyser to produce hydrogen directly on site. Previously, hydrogen was delivered by lorry.



© Paul Glaser/Fraunhofer IEG



Location: Zittau

Start: 2025

Operator: Zittau Municipal Utilities,
Fraunhofer IEG

Info: www.ieg.fraunhofer.de

Harnessing heat and oxygen as by-products of electrolysis

- Utilising waste heat from electrolysis offers potential for cost reduction.
- The electrolyser is coupled with a large-scale heat pump (max. output 105 kW), which raises the temperature of the waste heat and enables it to be fed into the district heating network (up to 240 megawatt hours per year).
- In addition, the production of oxygen for use in the medical or chemical industries is being investigated.



© Stadtwerke Flensburg



Location: Flensburg

Start: 2028

Operator: Stadtwerke Flensburg

Info: www.stadtwerke-flensburg.de

District heating and electricity from climate-neutral hydrogen

- The combined heat and power plant is to be converted to run on hydrogen instead of natural gas in order to generate climate-neutral district heating and electricity via combined heat and power generation.
- Gas and steam turbine plants meet all the technical requirements but must be adapted for use with H_2 .
- The hydrogen is to be produced in an electrolysis plant in Esbjerg, Denmark, using electricity from offshore wind farms, among other sources, and transported to Flensburg via a cross-border hydrogen transport network.



© AdobeStock/getti



Location: Emden

Start: 2027

Operator: Statkraft

Info: www.statkraft.de

Integration of green hydrogen and green district heating production on an industrial scale

- Planned construction of a 10 MW electrolyser to be integrated into the existing infrastructure at the power plant site (20 MW biomass combined heat and power plant, 450 MW gas-fired combined cycle power plant).
- The green hydrogen is to be used in the local transport sector.
- An additional 200 MW electrolyser with a connected heat pump (50 MW) is planned for the production of H₂ e on an industrial scale and the use of waste heat for district heating.

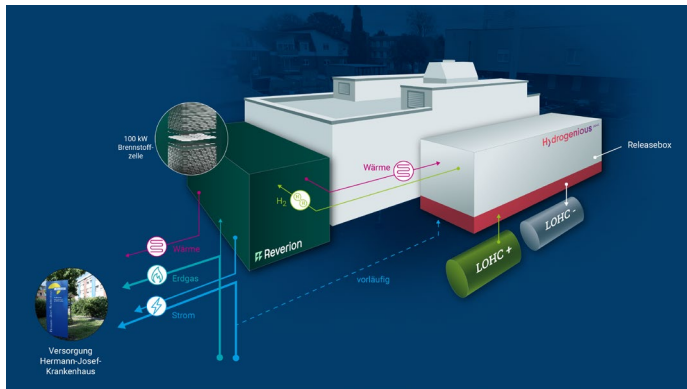


© Hamburger Energienetze

**Location:** Hamburg**Start:** 2020–2022**Operator:** Hamburger Energienetze,
enercity Contracting**Info:** hamburger-energienetze.de

Heat from hydrogen in a Hamburg residential area

- 273 homes in a Hamburg residential area receive heating and hot water via two natural gas-fired CHP units and two peak-load boilers.
- During the project, the system was operated with a hydrogen blend of up to 30 per cent without any technical restrictions.
- Important insights into the operational behaviour of the energy generation plant were gained.



© Forschungszentrum Jülich GmbH



Location: Erkelenz

Start: 2024

Operator: Hermann-Josef Hospital,
Bosch, Hydrogenious, LOHC
Technologies, HC-H2

Info: hch2.de

Climate-friendly energy supply in hospitals using a combination of technologies

- Installation of a decentralised, energy-efficient solid oxide fuel cell system powered by a natural gas-hydrogen mixture (up to 20% H₂).
- In a second step, the system will be combined with LOHC technology, enabling the delivery of hydrogen in liquid form by tanker rather than in gas cylinders.
- The waste heat generated during the system's electricity production is to be used to release the hydrogen from the carrier medium or hydrogen derivative LOHC.



© Gelsenwasser



Location: Linnich

Start: 2022

Operator: Gelsenwasser Energienetze

Info: gelsenwasser.de

Heat supply via the existing gas network using 100% hydrogen

- A 130-metre-long gas distribution network dating from the 1990s has been converted to run on pure hydrogen.
- 100% hydrogen is used to supply heat to a warehouse and workshop hall as well as an office building.
- The project provides valuable insights into the decarbonisation of the heating market using hydrogen and H₂ -condensing boilers.

A photograph of an industrial hydrogen storage facility. Large white pipes with labels like 'K-7', 'K-8', and 'K-11' are prominent. Two workers in blue uniforms are standing on a metal platform in the background. The ground is covered in gravel, and the sky is blue with scattered clouds.

Hydrogen projects Storage





© EWE

Hydrogen storage in salt caverns is technically feasible

- Construction and operation of a 500-cubic-metre test cavern near Berlin.
- The project has demonstrated that the safe storage of hydrogen in an underground cavern storage facility is possible.
- Important findings and experience regarding operation, as well as the quality and purity of the hydrogen, have been gained.



Location: Rüdersdorf

Start: 2019

Operator: EWE GASSPEICHER

Info: clean-hydrogen-coastline.de



© Uniper Energy Storage



Location: Bierwang

Start: 2023/2025

Operator: Uniper Energy Storage,
OGE, RAG Austria, SEFE,
NAFTA

Info: www.uniper.energy

Investigation of porous storage sites for suitability and integrity for future hydrogen storage

- A smaller former natural gas reservoir – independent of the existing Bierwang natural gas storage facility – is being filled with various natural gas/hydrogen gas mixtures in order to determine the biogeochemical processes taking place underground.
- Predictions regarding the longevity and integrity of the underground storage site can be made.
- The results are to be applied to other underground storage systems.



© Ambartec/Frank Graetz

Storage and transport of hydrogen in iron nuggets

- The storage process is based on the oxidation and reduction of iron oxide to iron. Hydrogen reacts with iron oxide to form iron. To release the hydrogen, steam is introduced into the storage unit, causing hydrogen to be produced again.
- The storage units filled with iron nuggets can be easily transported in containers. In future, the nuggets are also to be transported as bulk cargo in cargo ships or trains.
- Suitable for use in companies that are not connected to the hydrogen network.



Location: Dresden

Start: 2026

Operator: Ambartec

Info: www.ambartec.de



© Storengy



Location: Harsefeld

Start: by 2032

Operator: Storengy

Info: www.salthy.de

Expansion and conversion of a gas storage facility to hydrogen

- Expansion of the natural gas storage facility to include additional salt caverns and associated surface facilities for the underground storage of hydrogen.
- The storage capacity of the two new caverns is 14,000 tonnes.
- From 2035 onwards, the two existing salt caverns, which are currently still used for natural gas storage, are to be converted for hydrogen storage.
- Connection to the core hydrogen network and the 'Hyperlink' and 'Hamburg Green Hydrogen Hub' projects.



© EWE

Conversion of gas storage facilities to hydrogen in the Wesermarsch region

- Conversion of an existing salt cavern for the storage of green hydrogen (70 GWh)
- The storage facility will be connected to the core hydrogen network and the European Hydrogen Backbone.
- The project is part of the EWE Clean Hydrogen Coastline programme.



Location: Huntorf

Start: 2027

Operator: EWE GASSPEICHER

Info: clean-hydrogen-coastline.de

Epe-H2 hydrogen cavern storage facility



© RWE Gas Storage West



Location: Gronau-Epe

Start: 2027

Operator: RWE Gas Storage West

Info: rwe-gasstorage-west.com

Large-scale storage for renewable hydrogen in the GET H2 network

- Construction of a hydrogen cavern storage facility in the Gronau-Epe cavern field (North Rhine-Westphalia) comprising two salt caverns at a depth of approximately 1,000 metres.
- Storage capacity of 38 million cubic metres of hydrogen.
- Connection to the GET H2 network via the HEP (Heek–Epe) hydrogen pipeline, making it part of the emerging core hydrogen network.

DVGW – Stronger together

This compilation was prepared on the basis of the project information available as of August 2026. We accept no liability for the completeness or accuracy of the information provided.
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