



## INTERNATIONAL PARTNERSHIP FOR HYDROGEN AND FUEL CELLS IN THE ECONOMY

### IPHE Country Update April 2023: Germany

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#### 1. New Initiatives, Programs, and Policies on Hydrogen and Fuel Cells

The Federal government of Germany is currently working on revising the hydrogen strategy in order to anchor the targets from the coalition agreement (e.g. increasing the electrolyser capacity to 10 gigawatts by 2030). The revision of the hydrogen strategy is expected to be published in the first half of 2023.

In December 2022, the German Federal Ministry of Economics and Climate Protection (BMWK) [started the tendering process](#) for the import of green hydrogen derivatives under the [H2Global mechanism](#). Through a competitive process, hydrogen derivatives will be purchased for this purpose by an intermediary, HINT.CO, at the lowest possible price under 10-year contracts. The large-volume purchase contracts are meant to incentivize investment in renewables for hydrogen production via electrolysis and the production of hydrogen-based ammonia, methanol, and sustainable aviation fuels. The first shipments of green hydrogen derivatives to Germany and Europe are planned for the end of 2024. The H2Global award process is the first global bidding process for the purchase of hydrogen or its derivatives. The foundation is endowed with €4,4 billion (approx. USD 4,77 billion) by the German government.

In late 2022, the National Hydrogen Council (NWR) as an independent advisory board presented an action [plan for future hydrogen storage facilities](#) in Germany. Converted natural gas caverns are to play a central role. By 2030, the NWR expects a storage demand of at least 5 terawatt hours.

#### 2. Hydrogen and Fuel Cell R&D Update

In late 2022, the [R&D project KIONHyPower-48V](#), funded by the [National Innovation Programme Hydrogen and Fuel Cell Technology](#) (NIP II), was approved. The aim of the project is to develop and industrialize a 48V fuel cell system for counterbalanced trucks. The new development will take place at KION subsidiary Linde Material Handling GmbH in Germany.

Project AppLHy!, a sub-project of the German flagship project [TransHyDE](#), presents the possibilities of liquid hydrogen (LH2) in a white paper. According to the authors, a high degree of maturity speaks for the use of liquid hydrogen.

#### 3. Demonstration, Deployments, and Workforce Developments Update

The German chapter of Dutch transmission system operator Gasunie is entering the implementation phase of the hydrogen project "[HyPerLink](#)". Between Bremen and Hamburg, the company is starting to convert the first 54-kilometer-long natural gas pipeline section for transporting hydrogen. The grid operator is making advance



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payments of around €10 million (approx. USD 10,95 million). HyPerLink was nominated as a German project for European IPCEI funding in May 2021. However, Gasunie announced that the EU has not yet committed to fund the project. In total, the pipeline will reach a length of around 660 kilometers and connect the Netherlands with Germany and Denmark.

As part of the H2CAST Etzel research project, STORAG ETZEL GMBH, together with its project partners, has begun the first gas-tightness test using hydrogen on a cavern in Etzel. A total of 280 kilograms of gaseous hydrogen from sustainable, green production was stored into the project cavern.

In December 2022, the [roll-out of series production fuel cell trucks](#) in Germany started. The “XCIENT Fuel Cell” from manufacturer Hyundai represents the start for the HyLane fleet, which will initially consist of 44 trucks. The handover of the vehicle to the mid-sized client mitea GmbH in Baden-Württemberg and the commissioning are a milestone for the decarbonisation of heavy road transport.

The deadline for the [application in the HyLand competition, category HyPerformers II](#), ended in late January 2023. 13 projects applied, a total of 45 million Euros (approx. USD 49,1 million) is available from the market activation guideline of the NIP II. In HyPerformer regions, the first hydrogen networks, infrastructures and projects have already been established. The HyPerformer funding is therefore aimed at regional project consortia that already have detailed concepts for the use of hydrogen technologies and are now aiming for a rollout of the technology. The [winning regions in the HyPerformer category of the 2nd HyLand phase](#), which were announced in late April 2023, are Rügen-Stralsund (H2-Projektregion Rügen-Stralsund), Erfurt (TH2ECO-Mobility) and Rhine-Ruhr (HyPerformer Rhein-Ruhr).

#### 4. Events and Solicitations

In December 2022, NOW GmbH launched [a new website for the overall concept of renewable fuels](#) on behalf of the Ministry for Digital and Transport (BMDV). It offers information on funding opportunities, projects, events, and general knowledge on the topic.

#### 5. Investments: Government and Collaborative Hydrogen and Fuel Cell Funding

In February 2023, the [European Commission assessed and approved](#) a €55 million (approx. USD 60,05 million) direct funding for a green hydrogen project of steel company ArcelorMittal Hamburg GmbH by the federal government under EU state aid rules. The measure is intended to support the construction of a demonstration plant for the production of steel using renewable hydrogen.

In February 2023, NOW GmbH, on behalf of the BMDV, started a [funding call for electrolysis plants](#) for the production of hydrogen for the transport sector. Eligible for funding is the construction of electrolysis plants with a minimum electrical output of 1 megawatt for the entire plant. The subsidy rate for electrolysis equipment is up to 45 percent of capital expenditures. Applications had to be submitted by 28.04.2023.

The latest funding call within the programme Export Initiative Environmental Protection – facilitated by NOW GmbH funded by the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection– was



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open until 1 April 2023. The next call for funding is scheduled to open in the beginning of 2024. The programme is intended for applications from German companies, as well as research institutions and their international projects for the use of green hydrogen and fuel cell technologies in decentralized energy supply, mainly in developing countries and economies in transition.

In March 2023, NOW GmbH, on behalf of the BMDV, started a [funding call for publicly accessible hydrogen refuelling stations for heavy duty vehicles](#). To be qualified for funding, refuelling stations must have a minimum capacity of 2 t/day and at least one 700 bar dispenser. In addition, the service station must be able to refuel heavy duty vehicles. Applications must be submitted by 10.05.2023.

### **6. Regulations, Codes & Standards, and Safety Update**

At the start of 2023, a consortium of six German stakeholders (DIN, DKE, DVGW, VDI, NWB, VDMA) initiated the project "Standardisation Roadmap Hydrogen Technologies", funded by the BMWK. Together with experts from all areas of the hydrogen value chain, the project partners will provide an overview of the status quo of standardisation in the field of hydrogen technologies. Additionally, the project aims to identify requirements and challenges for the entire value chain and, based on this, formulate practical requirements for future standards. On the basis of these proposals, the project will initiate and implement ongoing concrete standardisation projects.

In November 2022, NOW GmbH, on behalf of BMDV, put out to tender and awarded a cross-technology study on fire and explosion protection in the use of BEV and FC buses. Thematically, the study will address the safety aspects in the different phases of use (driving, parking, waiting, charging/fueling) and develop safety concepts for users. The contract for the study was awarded to the company EMCEL, which, together with the company brandwerk GmbH as fire experts, will develop the study by the middle of next year.