



International Partnership  
for Hydrogen and Fuel Cells  
in the Economy

## *Germany* Update

40<sup>th</sup> IPHE Steering Committee Meeting

4 – 5 October 2023

Washington DC, United States

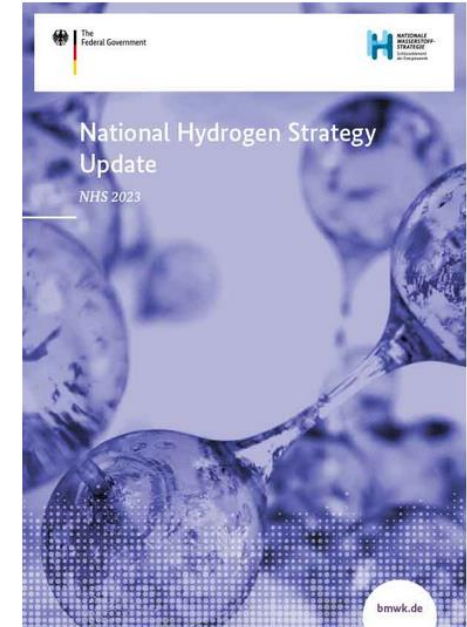
# Announcements / New Initiatives *Germany*



## Policies/Initiatives

In July, the German Federal Government published its updated [National Hydrogen Strategy](#). Selected highlights of the updated strategy:

- National electrolysis deployment target doubled to 10GW in 2030 (5GW in 2020 strategy)
  - Total hydrogen demand (incl. derivatives) of 95-130 TWh by 2030 (2.85-3.9 million tonnes), of which 40-75 TWh (1.35-2.7 million tonnes) new additional demand
  - Between 45-90 TWh of hydrogen (or derivatives) in 2030 will be covered by imports
  - Creation of initial H2 pipeline network (“H2 core network”) by 2028
  - Implementation of applications across industry, transport, power generation and heat
  - Creation of framework conditions for the hydrogen economy as key priority
- + Government has announced the intention to publish a dedicated **hydrogen import strategy** later in 2023



# Announcements / New Initiatives *Germany*

## Investments/Funding

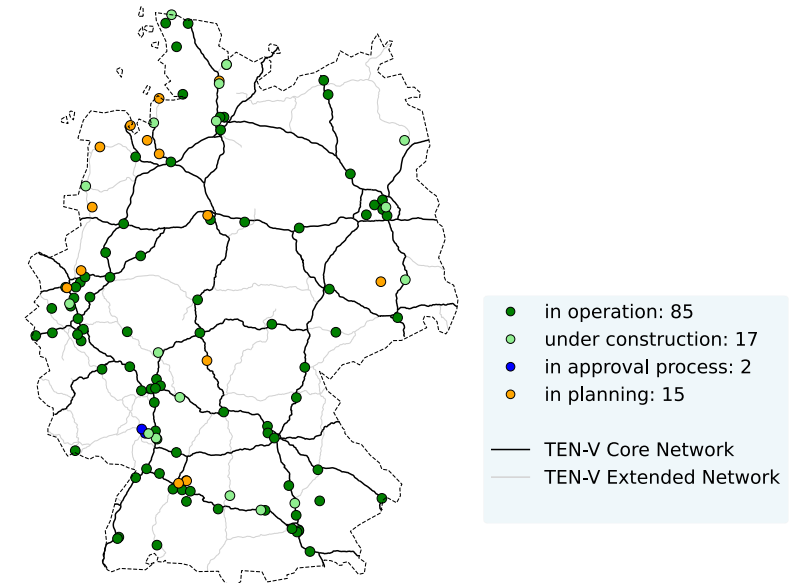
- Government announced in May its decision to provide funding to energy-intensive industries via so-called “climate protection contracts”, i.e. carbon contracts for difference (CCfD). Hydrogen-related projects are eligible.
- In June, EU Energy Commissioner Kadri Simson and Federal Minister for Economic Affairs and Climate Protection Robert Habeck agreed to interlink the new European Hydrogen Bank with the H2Global instrument.
- Government announced in August plans to support 24 GW of hydrogen power plants. Tenders are planned to start in 2024.
- Between May and August, the EU Commission approved German funding for several IPCEI projects:
  - 1 billion euro for Salzgitter AG’s green steel production project "SALCOS“
  - 2 billion euro for Thyssenkrupp’s green steel production project "tkH2Steel"
  - 161 million euros for Robert Bosch GmbH for the production of stationary fuel cell systems
  - 162 million euros for Sunfire GmbH in Dresden for construction of industrial production capacities for both alkali and high-temperature electrolyzers

# Announcements / New Initiatives *Germany*

## Funding / New Deployment Activities (in transport)

- Currently 2346 FC cars, 127 FC buses, 95 FC trucks on the road
- Funding approval for 43 trains
- Outcome of call for AFIR-compliant HRS: 63 HRS selected, to be built by 2026.
  - All selected HRS will offer at least 2 tonnes of H<sub>2</sub>/day dispensing capacity, and 350 bar for heavy duty vehicles and 700 bar for light duty vehicles.
  - Four HRSs will also offer liquid hydrogen (LH<sub>2</sub>)
- Total funding for these 63 stations: €383 million (€311 million federal and remainder from states (“Länder”))
- The next HRS call is planned for end 2023 / early 2024, with the goal of a demand-following roll-out of infrastructure
- Website "Tankstelle der Zukunft" (“Refueling Station of the Future”) was launched, incl. results of the study by the same name

700 bar (for Light-Duty Vehicles) HRS in Germany  
(state of knowledge 09/23)



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## Funding / New Deployment Activities

In late April 2023, the winning regions in the HyPerformer category of the 2nd **HyLand** phase were announced:

- Rügen-Stralsund (H2-Projektregion Rügen-Stralsund)
- Erfurt (TH2ECO-Mobility) and
- Rhine-Ruhr (HyPerformer Rhein-Ruhr).



Winning Region Erfurt, photo credit: Franz Josef

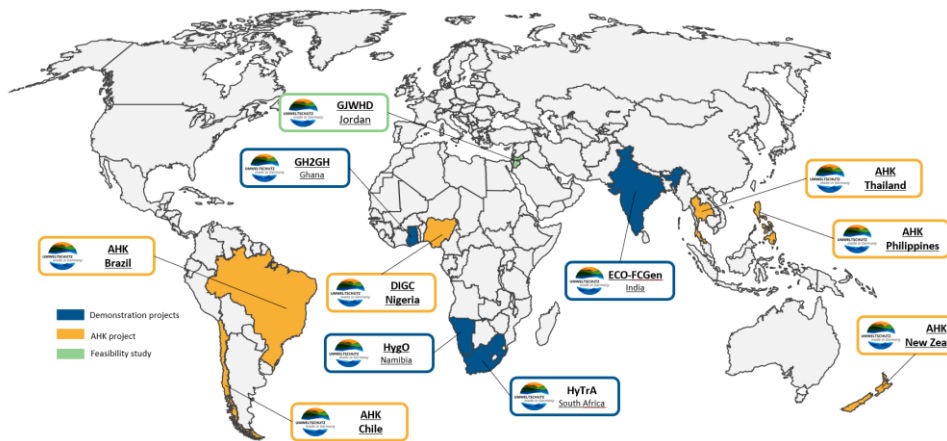
13 projects applied, a total of 45 million Euros (approx. USD 49,1 million) is available from the market activation guideline of the NIP II. In HyPerformer regions, the first hydrogen networks, infrastructures and projects have already been established. The HyPerformer funding is therefore aimed at regional project consortia that already have detailed concepts for the use of hydrogen technologies and are now aiming for a rollout of the technology.



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## Funding / New Deployment Activities

Export Initiative Environmental Protection (EXI) 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. EXI is facilitated by NOW GmbH & funded by the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection.



### Highlights in 2023 so far:

- Funding call 2023 closed. Next call to be expected spring 2024
- 5 new projects kicked off in 2023 – 2 pilot projects ([HygO](#) in Namibia, [GH2GH](#) in Ghana), 3 studies by German Chambers abroad ([Philippines](#), [Brazil](#), [New Zealand / Pacific Islands](#))
- First demonstrator producing green hydrogen and providing decentralised power supply within HyTrA project installed in South Africa



Inauguration of first green hydrogen & fuel cell demonstrator in South Africa (see press release on [HyTrA](#)) (Source: NOW)

# Announcements / New Initiatives *Germany*

## Key Collaborations

- International forums such as the IEA, IRENA, CEM/MI, IPHE and G7/20
- Several bilateral energy and climate partnerships with hydrogen focus
- Work on hydrogen certification in multilateral initiatives (IPHE, IEA Hydrogen TCP)
- Cooperation between NEDO and NOW (bilateral workshop on water electrolysis held in Yamanashi in March 2023)
- Signing of MoU for the continuation of the “Sino German Electro Mobility Innovation and Support Center” (SGEC) between China’s MoST and Germany’s BMDV (6 projects finished, 4 ongoing, 3 new projects selected)
- Clean Hydrogen Mission under Mission Innovation: Germany launched a workshop series supporting non-MI countries to develop Hydrogen Valleys

# Germany – Profile October 2023

## Status of Deployments

| Application                    | Capacity (2023)       |
|--------------------------------|-----------------------|
| Electrolyser                   | 145 MW <sup>(1)</sup> |
| Stationary FCs                 | 21,607 <sup>(3)</sup> |
| FC Trucks                      | 95 <sup>(1)</sup>     |
| FC Buses                       | 127 <sup>(1)</sup>    |
| FC Forklifts                   | 201 <sup>(2)</sup>    |
| FC Cars                        | 2346 <sup>(1)</sup>   |
| Operational refueling stations | 86 <sup>(1)</sup>     |

As of <sup>1</sup>September 2023, <sup>2</sup>April 2023, <sup>3</sup>approved for funding by Dec 2022

## Leading Government Initiatives

- IPCEI
- AFIR implementation
- H2Global
- National core H2 network
- Climate protection contracts (CCfDs)
- REDII implementation

## Goals or Focus Areas

- Availability of hydrogen
- Infrastructure
- Implementing applications in industry, transport, power and heat
- Framework conditions

## Deployment Goals

10 GW<sub>(el)</sub> electrolysis capacity by 2030 in Germany  
 45-90 TWh imports of hydrogen or derivatives by 2030

## Funding

Various programs and mechanisms (see initiatives)





# Thank you



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