



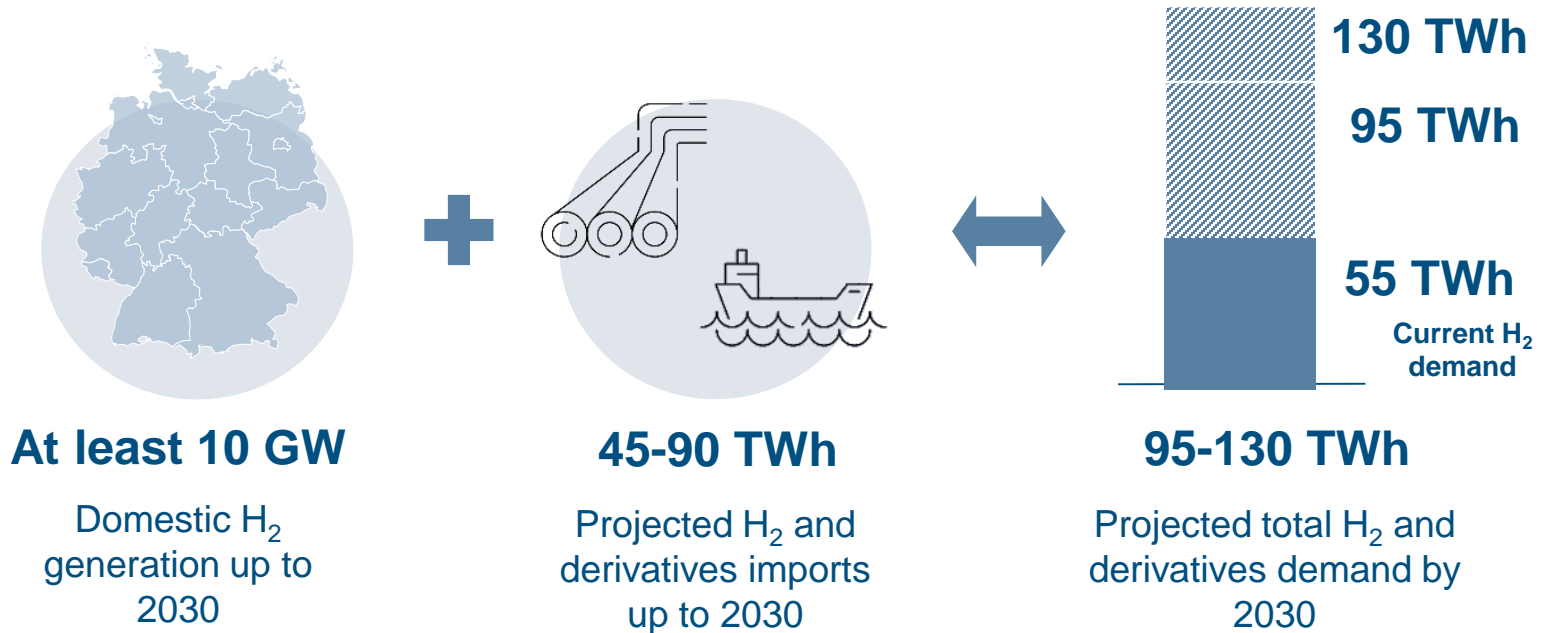
National Hydrogen Strategy of Germany

Ulrich Laumanns | 12 December 2024

National Hydrogen Strategy of Germany



Targets and projections for hydrogen in Germany



Measures for hydrogen market ramp-up in Germany

Phase 2: Accelerated market ramp-up

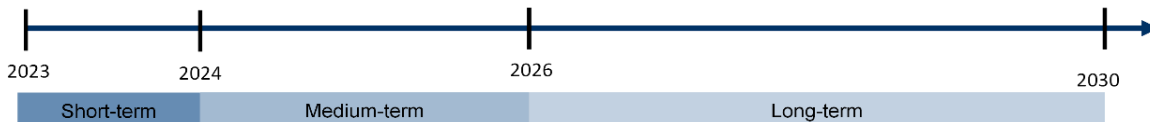
Fields of action of the NHS update

1. Ensuring availability of sufficient hydrogen

2. Developing a hydrogen infrastructure

3. Implementing hydrogen applications (industry, transport, electricity, heat)

4. Creating good framework conditions



Cross-cutting field of action

Germany to become a leading provider of hydrogen technologies by 2030

Demand sectors for hydrogen and its derivatives in Germany

Demand for hydrogen and hydrogen derivatives is expected to concentrate on the **below areas of application**. Existing fossil fuels will be substituted and additional demand will arise from new production processes.



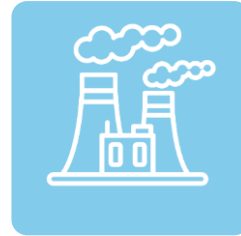
**Steel
industry**



Aviation



**Basic materials
and
petrochemicals**



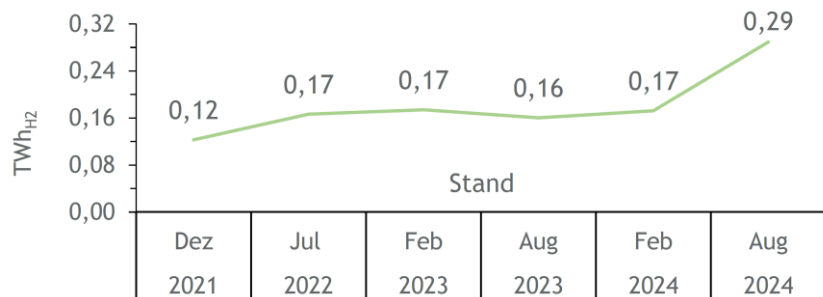
**H2 gas-fired
power plants**



Shipping

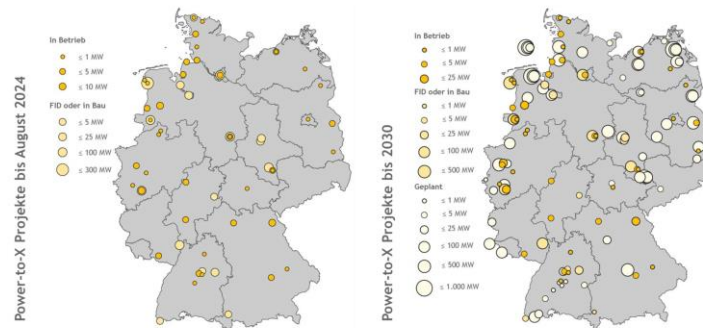
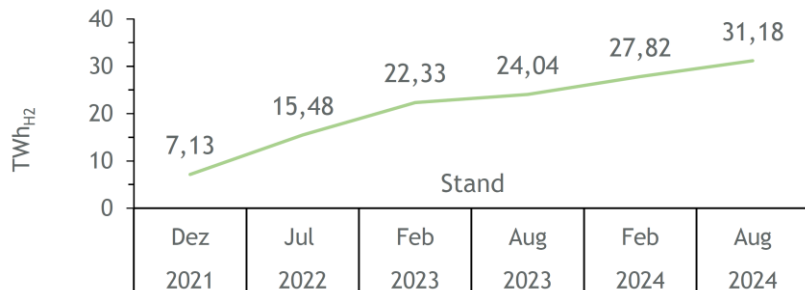
Current and expected hydrogen production from electrolysis

Current electrolytic hydrogen production in Germany

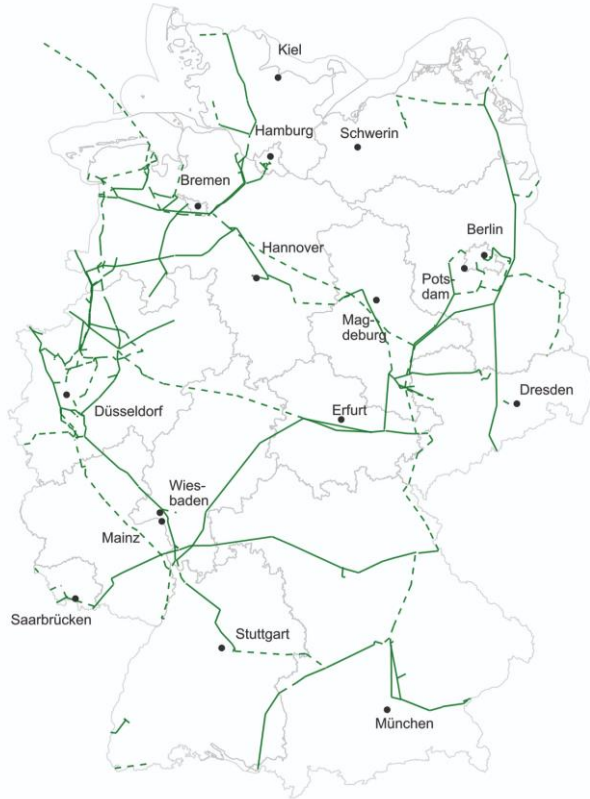


| Status | Projects | Total capacity | Ø capacity |
|---------------------|------------|-------------------------------|-----------------------------|
| In operation | 45 | 111 MW _{el} | 2,5 MW _{el} |
| FID or construction | 19 | 1.031 MW _{el} | 54,3 MW _{el} |
| In planning | 79 | 10.154 MW _{el} | 128,5 MW _{el} |
| Total | 143 | 11.269 MW_{el} | 78,8 MW_{el} |

Projected electrolytic hydrogen production in Germany (2030)



Planned hydrogen core network in Germany

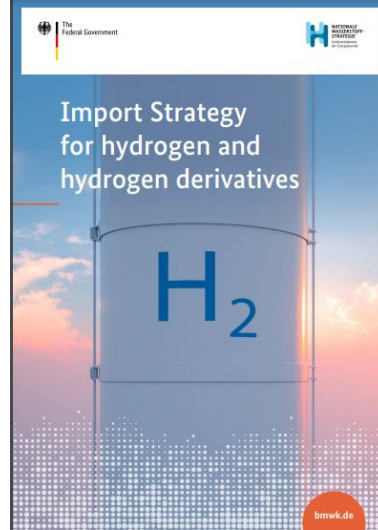


- Hydrogen pipeline network to be realized from 2025-2032
- Approval by German regulatory authority in October 2024
- 9.040 km of pipelines, 60% repurposed natural pipelines
- 13 cross-border interconnections to neighbour countries
- Around 60 GW hydrogen import capacity
- Use of amortisation account for inter-temporal cost allocation, until hydrogen market has matured
- KfW provides 24 bn€ loan to the amortisation account

Import Strategy for hydrogen and hydrogen derivatives

Objectives:

- Ensuring a reliable supply of green H₂ and derivatives
- Information for market players and partners on targets and framework conditions for German H₂ imports
- Increasing investment security for H₂ production and import infrastructure
- Explanation of the Federal Government's measures along the H₂ value chain

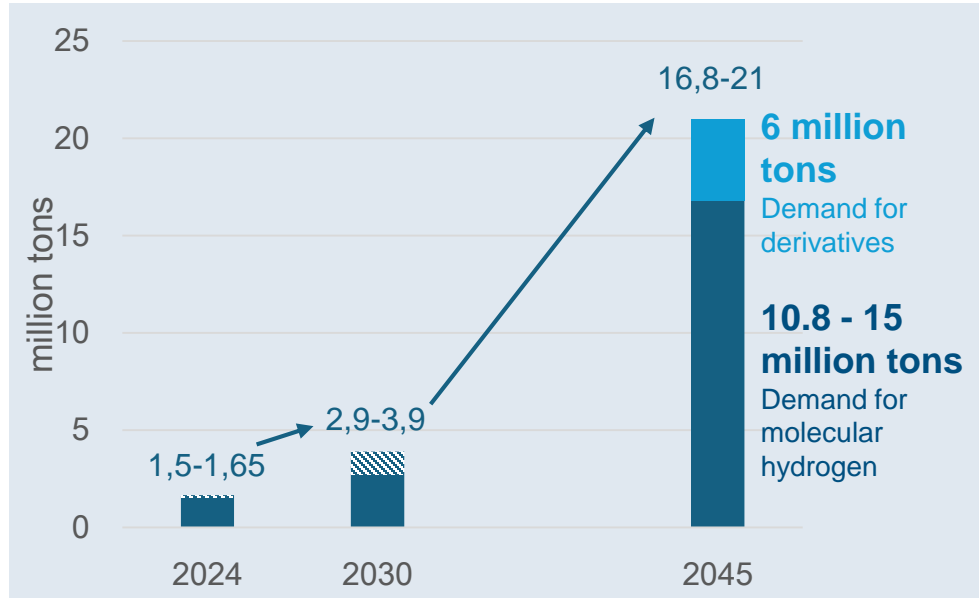


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Measures:

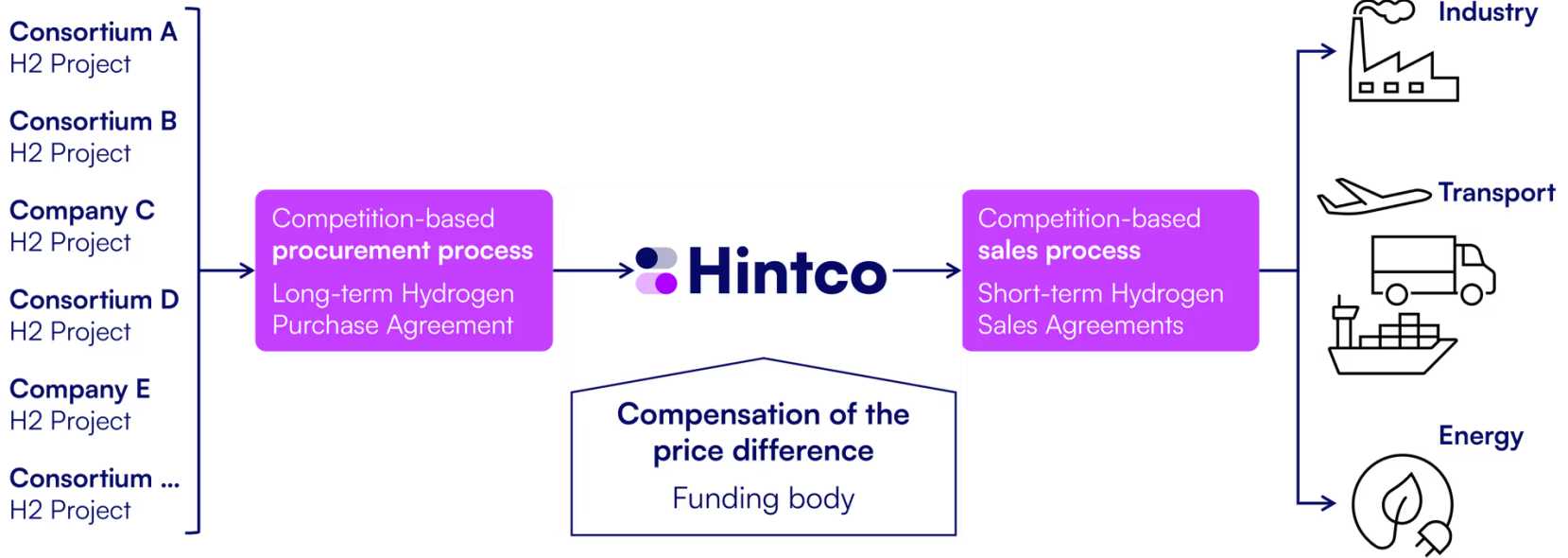
- Strengthening reliable demand in Germany and complementary supply-side promotion
- Acceleration of infrastructure development in Germany and the EU
- Establishment of standardized certification and product requirements
- Deepening European and international cooperation on H₂
- Accompanying international market ramp-up with a targeted R&D policy

Import demand for hydrogen and hydrogen derivatives

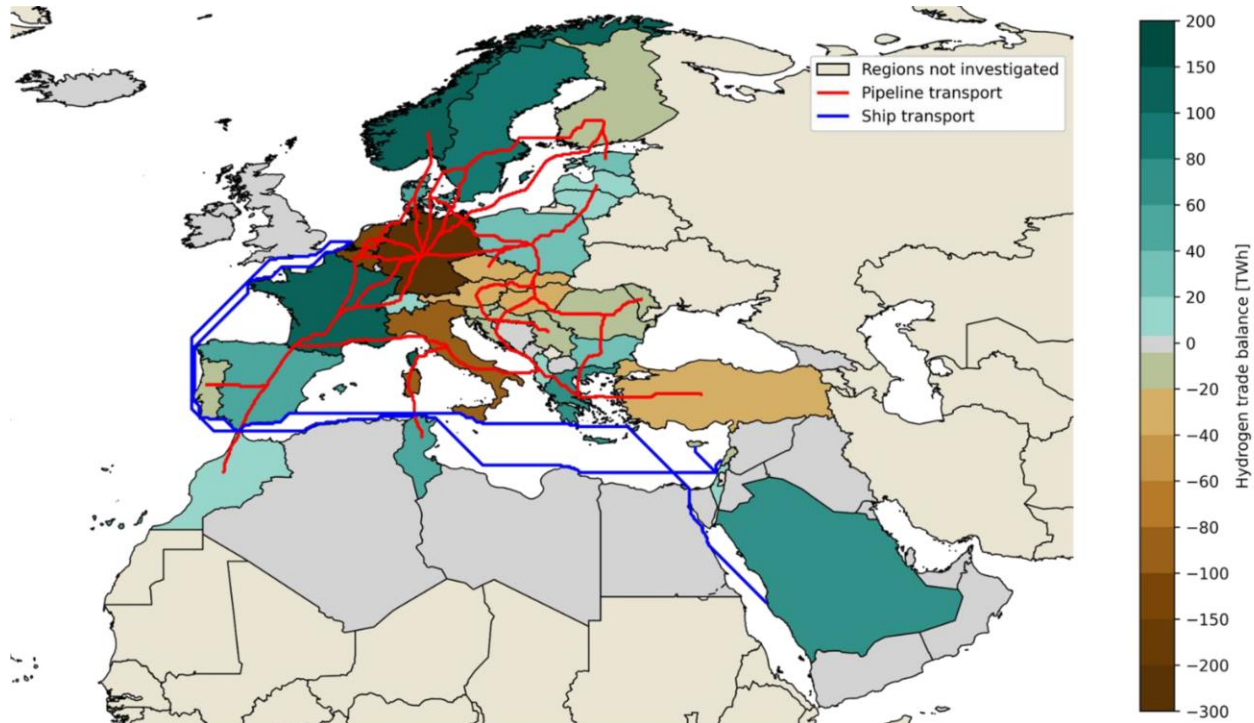


- 50-70% of hydrogen demand of Germany in 2030 to be imported
= 1,45 – 2,73 million tons H₂
- Low-carbon H₂ and derivatives included in the market ramp-up phase
- Support for different H₂ products (molecular, derivatives, H₂ carriers)
- Parallel development and expansion of infrastructure for pipeline and ship transportation
- Sources of supply are diversified internationally as broadly as possible

The H2Global mechanism

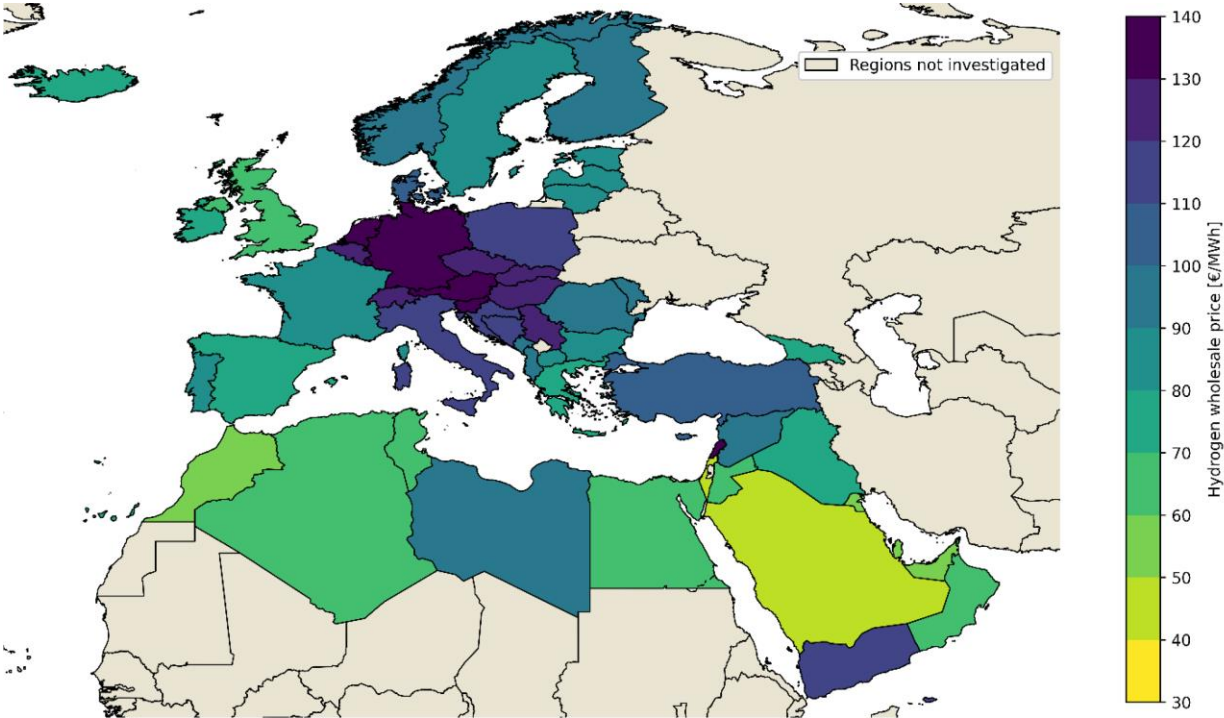


Hydrogen trade balances and transport routes in 2050



Source: Global Atlas of H₂ Potential (HYPAT) Final Report, December 2024

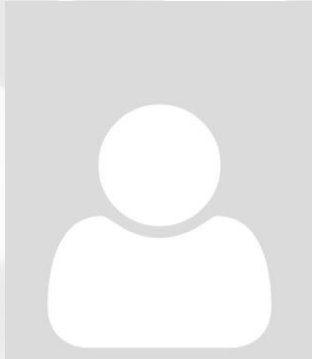
Wholesale hydrogen prices in 2050 (excluding transport)



Source: Global Atlas of H₂ Potential (HYPAT) Final Report, December 2024



Thank you for your attention!



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Sources

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HYPAT project



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<https://www.linkedin.com/company/gizgmbh>