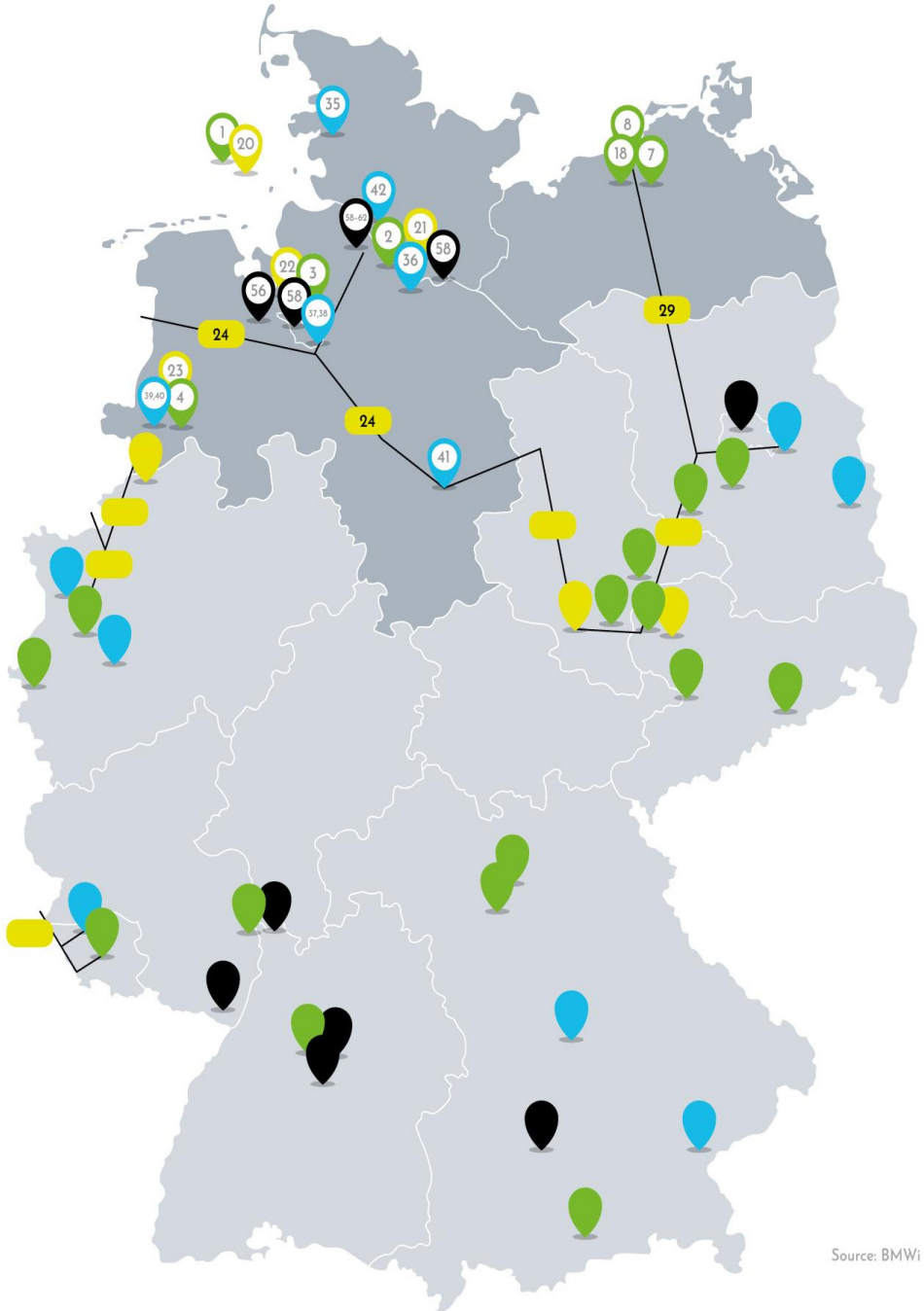

HY-5
GREEN HYDROGEN INITIATIVE
OF NORTHERN GERMANY
SB UW
NORTHERN
GERMANY

Northern Germany is on its way to a successful hydrogen economy.

HY-5
The Green Hydrogen Initiative of Northern Germany

HYDROGEN-IPCEI
27 PROJECTS OF COMMON EUROPEAN INTEREST IN NORTHERN GERMANY
(TOTAL 62 IN GERMANY)



Source: BMWi 2021

Production

1. AquaVentus, Helgoland, RWE Renewables
2. Green Hydrogen Hub, Hamburg – Shell, Vattenfall, Mitsubishi, Wärme Hamburg
3. Clean Hydrogen Coastline, NI – EWE, EWE Netz, swb
4. GET H2, Lingen – RWE Generation
7. doing hydrogen, Rostock – APEX Energy
8. doing hydrogen, MV, BB, SA – ENERTRAG
18. HyTechHafen – Rostock, Rostock PORT GmbH

Infrastructure

20. AquaVentus, Helgoland, GASCADE
21. HH-WIN – Gasnetz Hamburg
22. Clean Hydrogen Coastline, NI – EWE, EWE Netz, EWE Gasspeicher
23. Green Crane, Lingen – Hydrogenious
24. Hyperlink – Gasunie DE
29. doing hydrogen – GASCADE

Industry Use

35. Hyscale 100, Kreis Dithmarschen – Holcim Deutschland, Hynamics Deutschland, Ørsted Wind Power Germany, Raffinerie Heide
36. H2H, Hamburg – Arcelor Mittal
37. Clean Hydrogen Coastline, Bremen – Arcelor Mittal
38. DRIBE2, Bremen, EH – Arcelor Mittal
39. LGH2, Lingen – BP
40. LGH2, Lingen – Oersted
41. GET H2, Salzgitter – Salzgitter Flachstahl
42. e-Methanol Projekt, Stade – DOW

Mobility Use

56. Clean Hydrogen Coastline, Norddeutschland – FAUN Umwelttechnik
58. WIPLiN, Bremen, Hamburg, Stade – Airbus Operations
59. H2LoAD, Hamburg – Hamburg Hafen und Logistik
60. HyPA, Hamburg – Hamburg Port Authority
61. H2 HADAG, Hamburg – HADAG Seetouristik und Fährdienst
62. H2SB, Hamburg – Green Plug

Pipeline

NORTHERN GERMANY

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Important Project of Common European Interest

AquaPrimus 2

Green hydrogen from the North Sea | Production

FEDERAL STATE
Schleswig-Holstein

PARTNERS
Shell, Siemens Gamesa, Siemens Energy, u.a.

RUNTIME
2021–2025

APPLICATION
Production

FURTHER INFORMATION
https://t1p.de/ws0r

NORTHERN GERMANY

Source: WTSH Schleswig-Holstein

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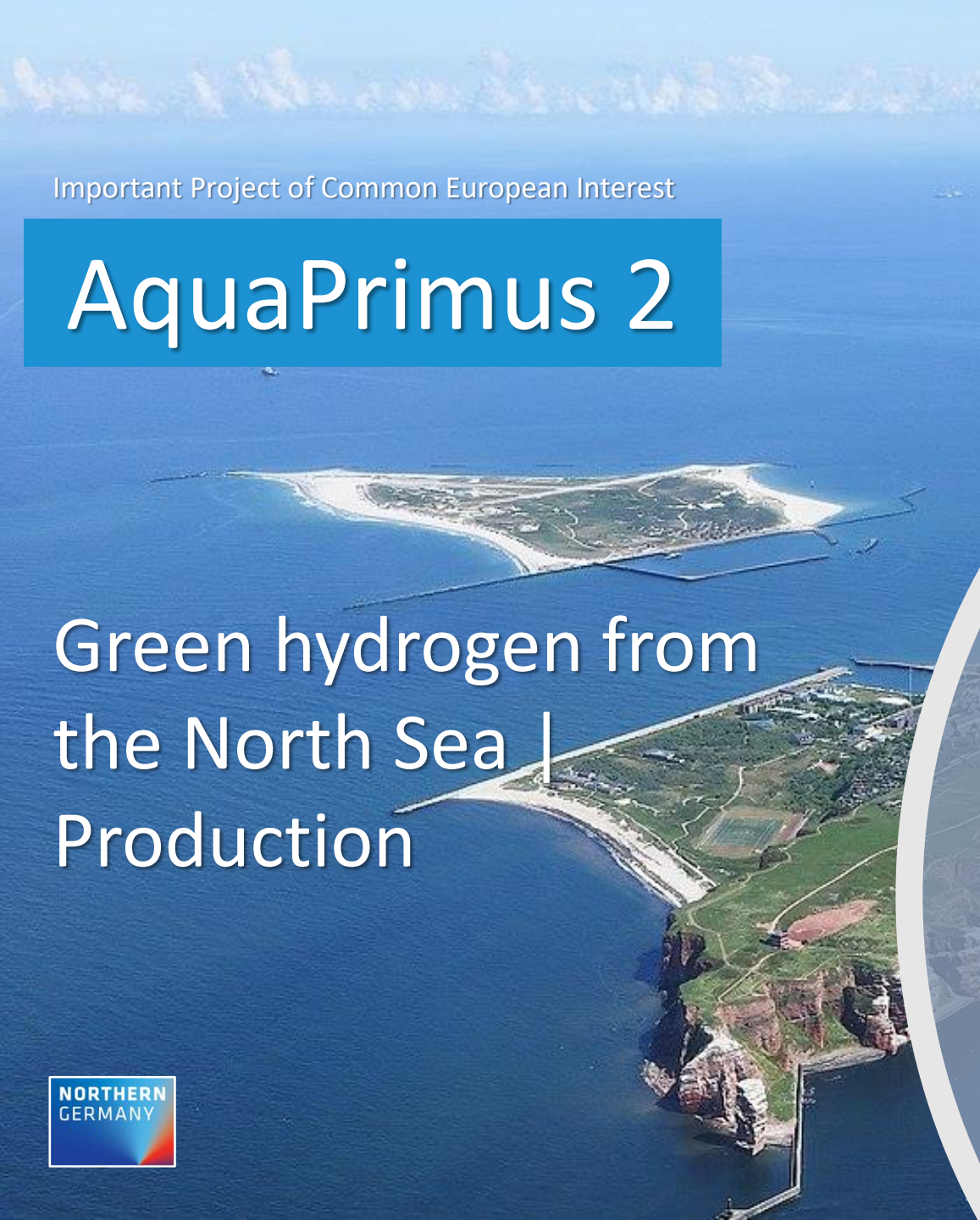
Important Project of Common European Interest

AquaPrimus 2

Green hydrogen from the North Sea | Production



By 2025, two 14-MW offshore wind turbines with integrated water electrolysis are to be installed in the coastal sea off Helgoland under the leadership of RWE. The hydrogen produced in this way will be transported to Helgoland by pipeline. Neither wind turbine is connected to the power grid but will operate autonomously in island mode. AquaPrimus 2 is part of the AquaVentus initiative, which has set itself the goal of using electricity from offshore wind turbines to operate electrolysers likewise located at sea on an industrial scale. Electrolysis plants in the North Sea with a total volume of 10 GW are planned for 2035. From Helgoland, the hydrogen will be delivered to shore via a collection pipeline.

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Important Project of Common European Interest

AquaDuctus

Green hydrogen from the North Sea | Transport

FEDERAL STATE
Schleswig-Holstein

PARTNERS
GASCADE, Gasunie, RWE, Shell

RUNTIME
2035

APPLICATION
Infrastructure

FURTHER INFORMATION
https://t1p.de/oc7q

NORTHERN GERMANY

Source: Gascade

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Important Project of Common European Interest

AquaDuctus

Green hydrogen from the North Sea | Transport

In the future, the AquaDuctus transport pipeline will transport green hydrogen from the North Sea directly to the mainland. It is part of the AquaVentus initiative, which aims to build 10 gigawatts of electrolysis capacity for green hydrogen generated from offshore wind energy between Helgoland and the Doggerbank sandbank. AquaDuctus is the vision of Germany's first offshore hydrogen pipeline and designed to provide reliable, non-discriminatory and low-cost hydrogen transport. As of 2035, AquaDuctus is expected to deliver up to one million tons of green hydrogen per year to the mainland, making a substantial contribution to decarbonising the energy supply in Germany and Europe.

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Rethinking mobility

Germany‘s largest hydrogen mobility project

FEDERAL STATE
Schleswig-Holstein

PARTNERS
GP Joule

FOUNDATION
2009

APPLICATION
Production | Mobility | Usage

FURTER INFORMATION
https://www.gp-joule.de/

NORTHERN GERMANY

Source: GP Joule

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Rethinking mobility

Germany‘s largest hydrogen mobility project

The North Frisian company GP Joule focuses on sector coupling, hydrogen, new mobility solutions and local heat. With its pilot project eFarm, it is realising a hydrogen infrastructure from production and processing to fleet use. The goal is to achieve a communal, sustainable economy with renewable energies, and to produce, transport, process, and market green hydrogen. The eFarm project ensures the security of supply in North Frisia with 100 % green, regionally produced hydrogen from wind power, thereby paving the way for hydrogen mobility.

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Important Project of Common European Interest

HyPerLink

Hydrogen infrastructure for Northern Germany

FEDERAL STATES
Niedersachsen, Bremen, Hamburg, Schleswig-Holstein

PARTNERS
Gasunie, Energinet

RUNTIME
2021–2025/2030

APPLICATION
Infrastructure

FURTHER INFORMATION
https://www.gasunie.de/unternehmen/gasunie/zukunftsprojekte

NORTHERN GERMANY

Source: Shutterstock

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Important Project of Common European Interest

HyPerLink

Hydrogen infrastructure for Northern Germany

HyPerLink creates a high-performance grid connection in northern Germany between the import sources and production sites of hydrogen on the one hand and the large industrial consumption centres and underground storage facilities on the other hand. This will create a hydrogen backbone in Germany with a length of around 600 kilometres, mainly from existing gas pipelines in northern Germany. This backbone network will connect the Netherlands via Oldenburg and Bremen with a number of industrial cities such as Hamburg, Hanover and Wolfsburg, and with Denmark via Schleswig-Holstein.

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Offshore / Import
Hamburg
Oldenburg
Bremen
NL
Hannover
NORTHERN GERMANY

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Important Project of Common European Interest

HySCALE100

Large-scale hydrogen production and decarbonisation

FEDERAL STATE
Schleswig-Holstein

PARTNERS
Holcim Deutschland GmbH, Hynamics Deutschland GmbH, Ørsted Wind Power Germany GmbH, Raffinerie Heide GmbH

RUNTIME
2021–2027

APPLICATION
Production | Industry

FURTHER INFORMATION
https://t1p.de/dtyz

NORTHERN GERMANY

Source: Raffinerie Heide

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Important Project of Common European Interest

HySCALE100

Large-scale hydrogen production and decarbonisation

In the HySCALE100 project, numerous companies (Holcim Deutschland GmbH, Hynamics Deutschland GmbH, Ørsted Wind Power Germany GmbH, Raffinerie Heide GmbH) work together to implement hydrogen production on a large scale and to decarbonise two basic industries - petrochemicals and cement. Along an integrated value chain, renewable energies, petrochemicals and the cement industry will in future be connected in an overall systemic way. The idea is to produce green hydrogen and convert it into synthetic basic materials using CO2, creating a broad product range of eFuels, eChemicals and eMethanol in combination with sustainably produced cement.

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WESTKÜSTE 100

A hydrogen economy on an industrial scale

FEDERAL STATE
Schleswig-Holstein

PARTNERS
Holcim Deutschland GmbH, Hynamics Deutschland GmbH, Ørsted Wind Power Germany GmbH, Raffinerie Heide GmbH

RUNTIME
2021–2027

APPLICATION
Production | Industrial usage

FURTHER INFORMATION
https://t1p.de/dtyz

NORTHERN GERMANY

Source: Raffinerie Heide

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WESTKÜSTE 100

A hydrogen economy on an industrial scale

Sustainable heating, building, flying, electrolysis, sector coupling, and the reduction of CO_2 emissions – the regulatory sandbox WESTKÜSTE100 aims to create a regional hydrogen economy on an industrial scale in Schleswig-Holstein. Its goal is to utilise wind energy to create hydrogen in sufficient quantities and to promote the decarbonisation of heat, transport and industry. At its core lies the idea of using offshore wind energy to create green hydrogen and to salvage the resulting heat and oxygen. Subsequently, green hydrogen will be used to produce climate-friendly jet fuels in addition to being inducted into gas distribution systems.

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Important Project of Common European Interest

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GET H2

Industrial value chains and infrastructures

FEDERAL STATES
Niedersachsen, Nordrhein-Westfalen

PARTNERS
BP, Evonik, Nowega, OGE, RWE, Salzgitter AG, Thyssengas

RUNTIME
2022–2026

APPLICATION
Production | Storage | Transport | Industry | Mobility

FURTHER INFORMATION
https://www.get-h2.de/umsetzung/

Source: Niedersachsen

Important Project of Common European Interest

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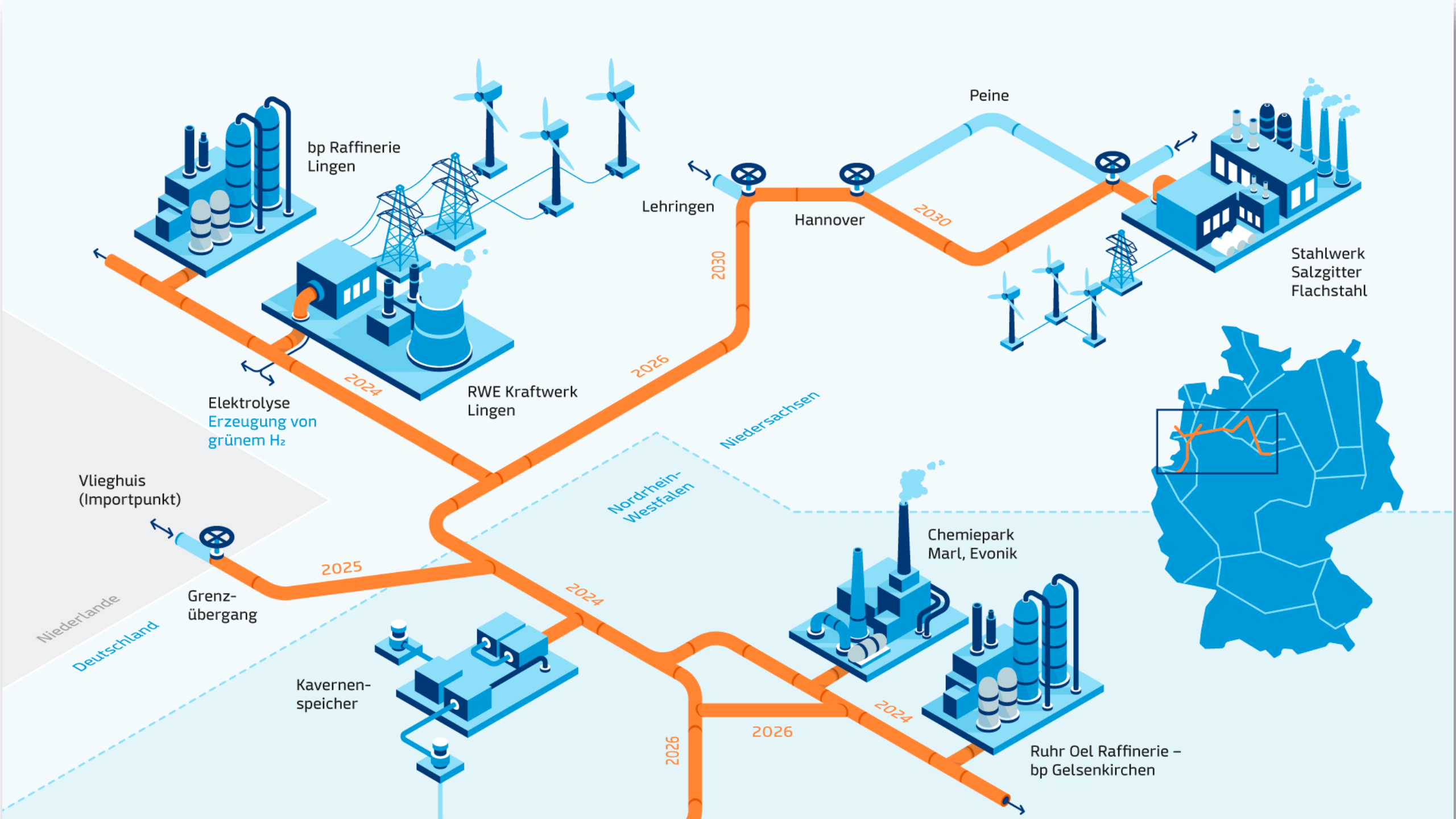
GET H2

Industrial value chains and infrastructures

The project is based on the GET H2 Nucleus project which includes the installation of 100 MW electrolysis capacity at the RWE site in Lingen and the construction of a pipeline infrastructure (Nowega, OGE) for pure hydrogen to customers in Lingen, Gelsenkirchen (both BP), and Marl (Evonik). The partners plan to connect cavern storage facilities (RWE) and grid links to the Netherlands (Thyssengas), the wider Ruhr region, and Salzgitter. The objective is to also integrate the SALCOS project into the infrastructure which aims to build a 100 MW electrolysis plant in Salzgitter as part of GET H2. In parallel, the electrolysis capacity at RWE's site in Lingen will be expanded to 300 MW, making green hydrogen available to buyers in large quantities.


bp Raffinerie
Lingen
RWE Kraftwerk
Lingen
Elektrolyse
Erzeugung von
grünem H₂
Lehringen
Hannover
Peine
Stahlwerk
Salzgitter
Flachstahl
2024
2026
2030
2030
Niedersachsen
Nordrhein-
Westfalen
Vlieghuis
(Importpunkt)
Grenz-
übergang
2025
Niederlande
Deutschland
Kavernen-
speicher
2024
2026
2026
2024
Chemiepark
Marl, Evonik
Ruhr Oel Raffinerie –
bp Gelsenkirchen

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GREEN CRANE LINGEN

Creation of a European H2 value chain

FEDERAL STATE
Niedersachsen

PARTNERS
Enagas, Naturgy, Vopak, Hydrogenious LOHC Technologies

RUNTIME
2022–2025

APPLICATION
Production | Storage | Transport

FURTHER INFORMATION
https://h2-region-emsland.de/2021/09/30/green-crane/

Source: Niedersachsen

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GREEN CRANE LINGEN

Creation of a European H2 value chain

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Within the Green Crane project, the consortium partners intend to establish a European green hydrogen value chain using Liquid Organic Hydrogen Carrier (LOHC). In this form, hydrogen produced in Spain with the help of photovoltaic electricity will be delivered to the industrial sites in Rotterdam and Lingen by sea, where it will be released. At the Lingen facility, the green hydrogen can be used directly by industrial partners on-site and fed into the local hydrogen pipeline network. .

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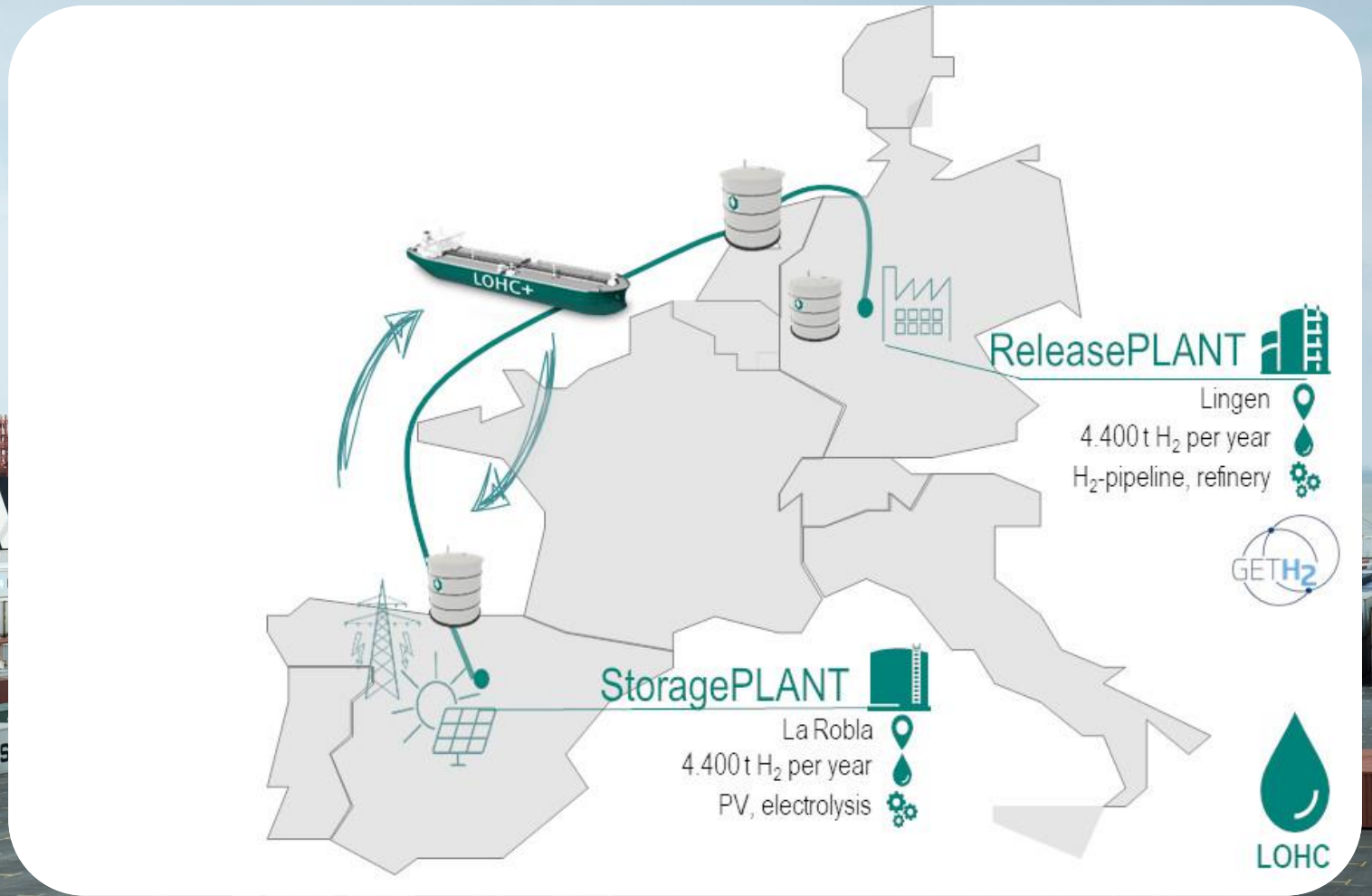
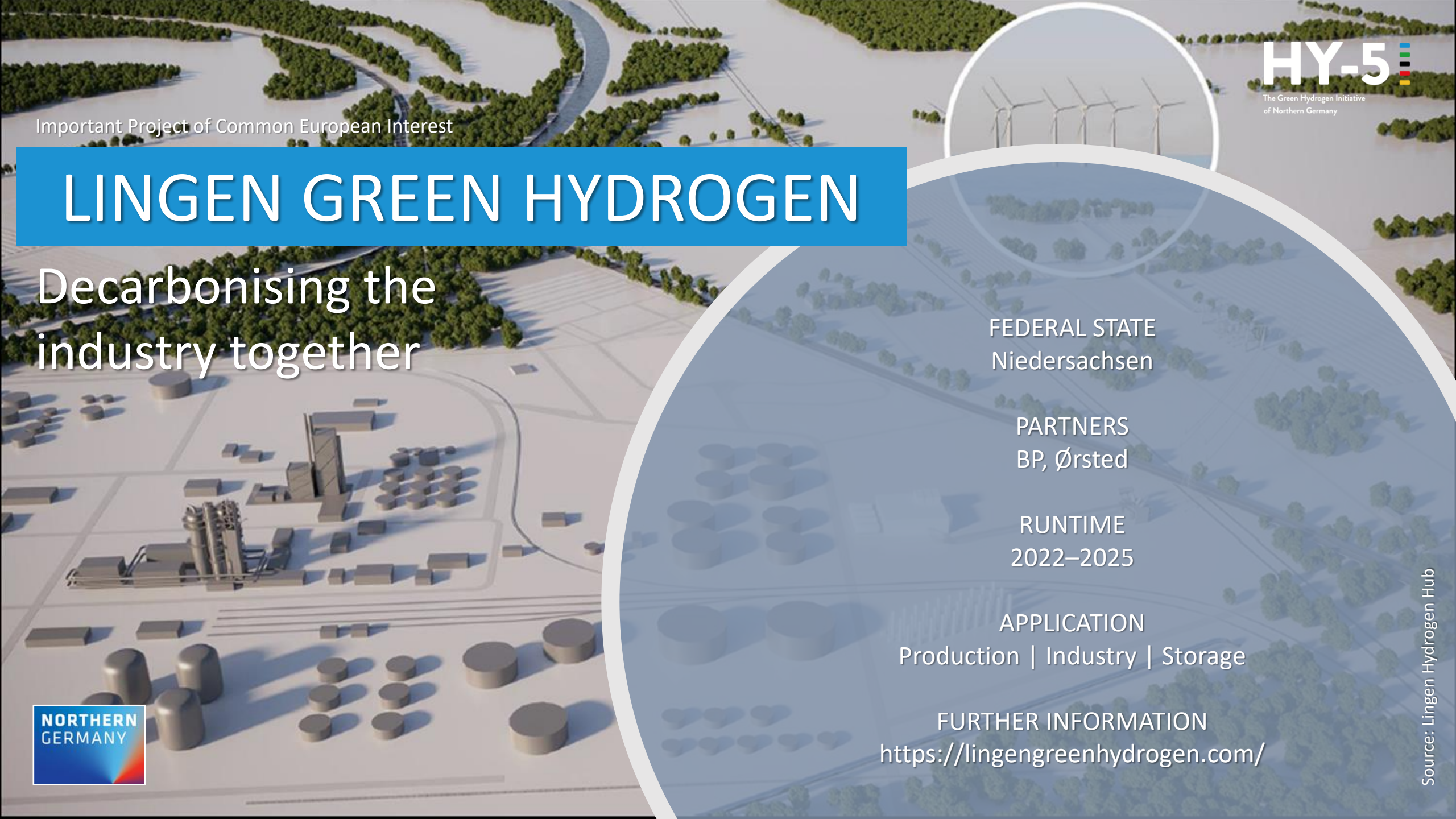
GREEN CRANE LINGEN

Creation of a European H2 value chain





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Important Project of Common European Interest

LINGEN GREEN HYDROGEN

Decarbonising the industry together

FEDERAL STATE
Niedersachsen

PARTNERS
BP, Ørsted

RUNTIME
2022–2025

APPLICATION
Production | Industry | Storage

FURTHER INFORMATION
https://lingengreenhydrogen.com/

NORTHERN GERMANY

Source: Lingen Hydrogen Hub

Important Project of Common European Interest

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The Green Hydrogen Initiative of Northern Germany

LINGEN GREEN HYDROGEN

Decarbonising the industry together

Less CO2 emissions and more sustainable fuels - that is the long-term goal of the joint project between bp and Ørsted. In a first step, they intend to build a 60-megawatt electrolyser that will be supplied with electricity from an offshore wind farm operated by Ørsted. By 2024, green hydrogen could be produced in Lingen and replace part of the fossil hydrogen production at the bp refinery to produce more sustainable fuels. It would substitute about 20 per cent of the hydrogen currently generated from fossil natural gas at the refinery with green hydrogen. Subsequently, the capacity can be gradually increased in several steps up to 530 MW.

NORTHERN GERMANY

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THE WORLD'S FIRST HYDROGEN TRAIN

A vision became reality

FEDERAL STATE
Niedersachsen

PARTNER
ALSTOM. CORADIA iLINT

RUNTIME
Since 2020

APPLICATION
Mobility

FURTHER INFORMATION
https://t1p.de/po9d

NORTHERN GERMANY

Source: Alstom

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THE WORLD‘S FIRST HYDROGEN TRAIN

A vision became reality

ALSTOM from Salzgitter has developed the world's first passenger train powered by a hydrogen fuel cell. Its top speed is 140 km/h, and it can cover up to 1,000 km. This CO_2 emission-free train is low-noise and emits only water vapour and condensation.

The introduction of this regional train provides a real alternative to the diesel engine. Since 2018, one train has been in passenger service between Stade and Cuxhaven, and regular service with 14 trains will begin in Lower Saxony in autumn 2021.

NORTHERN GERMANY

Important Project of Common European Interest

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The Green Hydrogen Initiative of Northern Germany

GREEN HYDROGEN HUB HAMBURG

On the way to a mega electrolyser in the Port of Hamburg

FEDERAL STATE
Hamburg

PARTNERS
Shell, Mitsubishi Heavy Industries (MHI), Vattenfall, Wärme Hamburg

RUNTIME
2021–2025

APPLICATION
Production | Logistics | Industry | Storage

FURTHER INFORMATION
https://t1p.de/lcdqh

Source: MZB Bremen, Frank Puscher

HY-5
The Green Hydrogen Initiative of Northern Germany

Important Project of Common European Interest

GREEN HYDROGEN HUB HAMBURG

On the way to a mega electrolyser in the Port of Hamburg

Shell, Mitsubishi Heavy Industries (MHI), Vattenfall and the municipal utility provider Wärme Hamburg want to jointly generate hydrogen from wind and solar power at the Moorburg power plant site to make it available for use in the surrounding area. In addition to the construction of an electrolyser with a capacity of 100 megawatts and the potential for further expansion, the project also aims to investigate how the existing infrastructure at the site can be used in the future to generate energy based on renewable energies. Subject to a final investment decision, the production of green hydrogen is expected to start in 2025. This would make the electrolyser one of the largest of its kind in Europe.

Hamburg Green Hydrogen Hub

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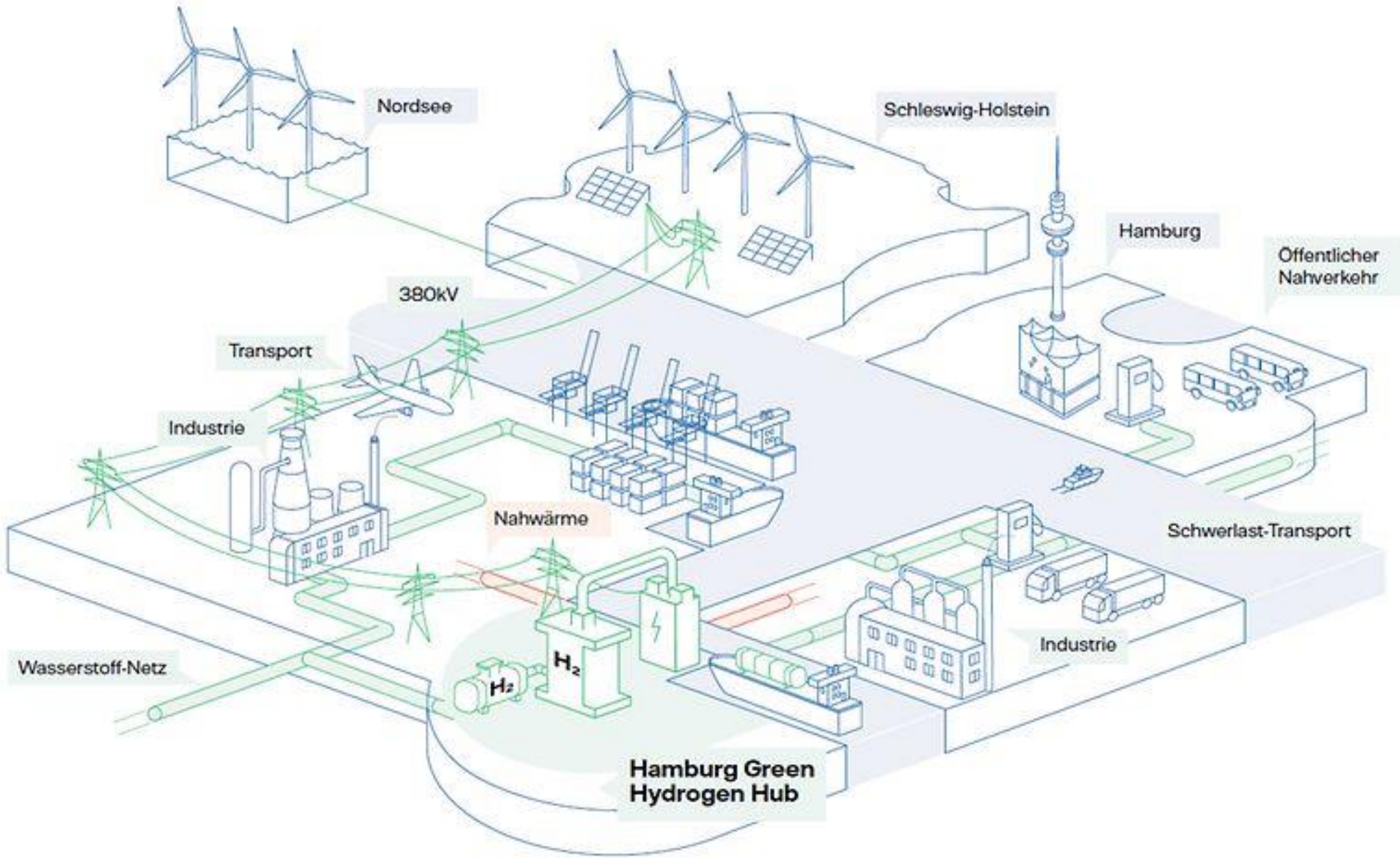

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Important Project of Common European Interest

HH-WIN

Hydrogen grid for Hamburg‘s industry

NORTHERN GERMANY

HH WIN

FEDERAL STATE
Hamburg

PARTNERS
Gasnetz Hamburg, Wasserstoff-Verbund Hamburg

RUNTIME
including IPCEI process
2021–2030

APPLICATION
Distribution | Supply | Industry

FURTHER INFORMATION
https://www.gasnetz-hamburg.de/hh-win

Source: Mediaserver Hamburg

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Important Project of Common European Interest

HH-WIN

Hydrogen grid for Hamburg‘s industry

NORTHERN GERMANY

HH WIN

To supply energy-intensive industries in Hamburg with hydrogen, Gasnetz Hamburg is building the Hamburg hydrogen industrial network HH-WIN in the city's harbour. The 60-kilometre infrastructure will initially connect the electrolysis plant of the Green Hydrogen Hub at the former Moorburg power plant site with industrial users. By connecting it to the planned German/European long-distance hydrogen pipelines, HH-WIN will become the central link in Hamburg's hydrogen economy. The grid will enable the substitution of natural gas with an annual energy volume of 6.4 terawatt-hours with green hydrogen. In the long term, this will allow a CO2 reduction of 1.2 million tons/year.

Important Project of Common European Interest

HHLA H2LOAD

Hydrogen application in port & heavy cargo logistics

NORTHERN GERMANY

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FEDERAL STATE
Hamburg

PARTNERS
Hamburger Hafen und Logistik AG

RUNTIME
2021–2027

APPLICATION
Logistics | Port handling | Heavy cargo transport

FURTHER INFORMATION
hhla.de/unternehmen/innovation/wasserstoff

Source: HHLA

Important Project of Common European Interest

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The Green Hydrogen Initiative of Northern Germany

HHLA H2LOAD

Hydrogen application in port & heavy cargo logistics

NORTHERN GERMANY

Hamburger Hafen und Logistik AG intends to decarbonise its operations in Hamburg by using heavy-duty vehicles with hydrogen fuel cells at its terminals and on the last mile of container transport. The H2LOAD (Hydrogen Logistics Applications and Distribution) project involves the running of more than 100 fuel cell vehicles (e. g. trucks, van carriers, or empty container stackers), the provision of infrastructure for hydrogen refuelling at the terminals and the connection of the HHLA terminals to the future Hamburg hydrogen network.

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The Green Hydrogen Initiative of Northern Germany

GREEN GAS FOR BREMERHAVEN

We test the most important areas of application for green gas

NORTHERN GERMANY

FEDERAL STATE
BREMEN / BREMERHAVEN

PARTNER
Hochschule Bremerhaven | Fraunhofer IWES | ttz Bremerhaven

RUNTIME
2020–2030

APPLICATION
Production | Alternative fuels | Mobility | Logistics | Food industry

FURTHER INFORMATION
https://wind-wasserstoff-bremerhaven.de/

Source: BIS Bremerhaven

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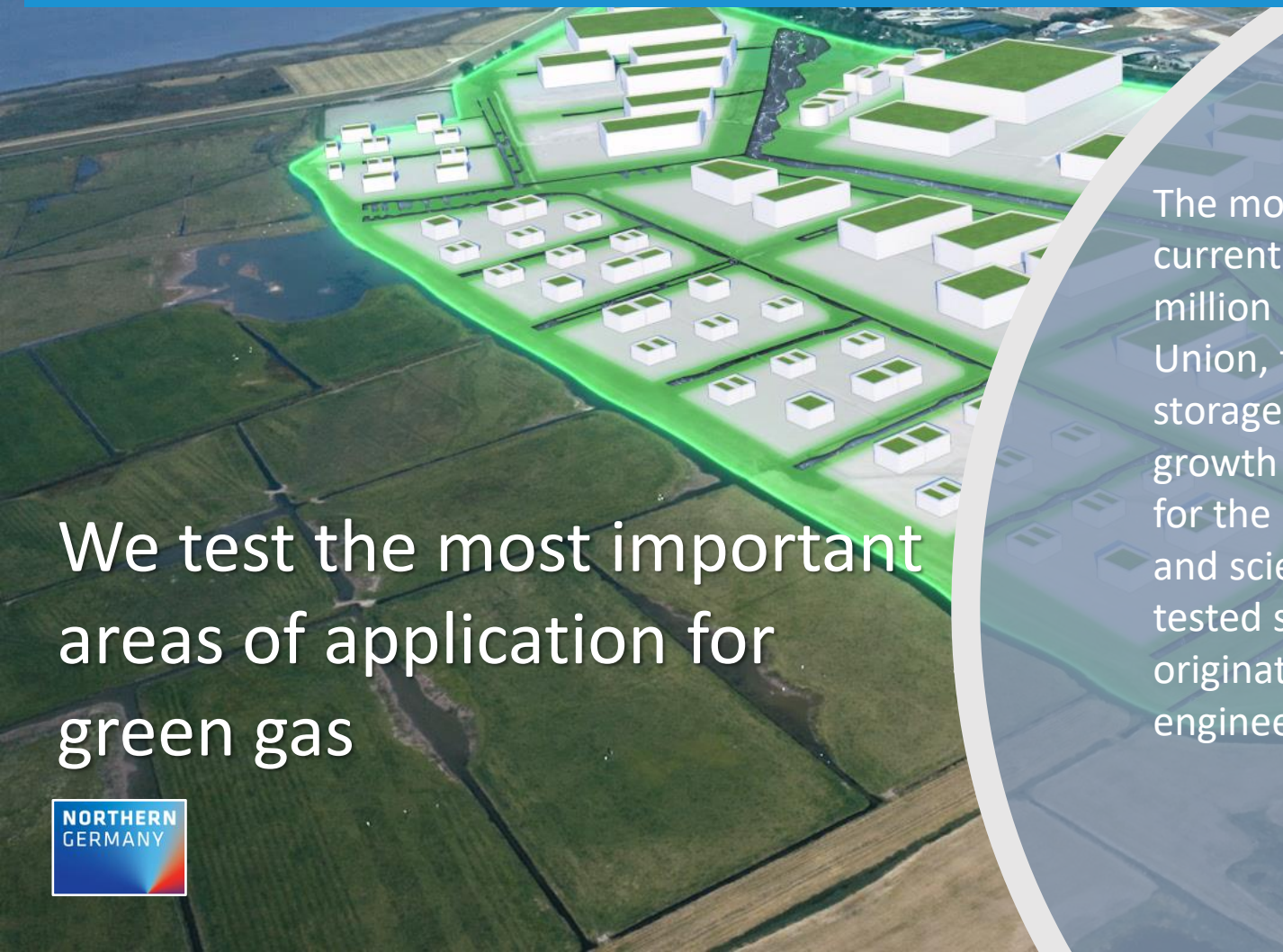
GREEN GAS FOR BREMERHAVEN



We test the most important areas of application for green gas

The most important fields of application for "green gas" are currently being tested in Bremerhaven. With approximately 20 million euros from the state of Bremen and the European Union, the development of a value chain, from production and storage to practical testing, is underway. The focus on a high-growth future market is intended to open new opportunities for the region and strengthen the region as a hub for business and science. The new activities tie in with the proven and tested scientific competence and the existing infrastructure originating from the research of wind energy and process engineering.

NORTHERN GERMANY

Important Project of Common European Interest

HY-5
The Green Hydrogen Initiative of Northern Germany

CLEAN HYDROGEN COASTLINE

Cornerstone for the production, transport and use of hydrogen

FEDERAL STATES
Bremen, Niedersachsen

PARTNERS
EWE, swb, ArcelorMittal Bremen,
FAUN, Tennet und weitere

RUNTIME
2023–2026

APPLICATION
Production | Storage | Steel | Mobility

FURTHER INFORMATION
https://t1p.de/d037

NORTHERN GERMANY

Source: WZB Bremen

Important Project of Common European Interest

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CLEAN HYDROGEN COASTLINE

Cornerstone for the production, transport and use of hydrogen

NORTHERN GERMANY

The Clean Hydrogen Coastline project, which among others includes EWE and Bremen-based swb AG, implements hydrogen projects from production and infrastructure to application in industry and transport. It pursues the gradual integration of hydrogen into the existing energy system in the Bremen and Northwest region. In Bremen, the aim is to increase the electrolysis capacity on the steelworks site, to connect it to the European hydrogen network and to make green hydrogen available for commercial vehicles with fuel cells. In addition, the site will be linked to the cavern storage facility in Huntorf, which will be converted to hydrogen.

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Important Project of Common European Interest

DRIBE (DRI Usage in Bremen EAF)

Hydrogen and sponge iron

NORTHERN GERMANY

FEDERAL STATE
Bremen

PARTNER
ArcelorMittal Bremen

RUNTIME
Ca. 2023–2026

APPLICATION
Industrial usage | green steel

FURTHER INFORMATION
https://t1p.de/k6qz

Source: ArcelorMittal Bremen

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Important Project of Common European Interest

DRIBE (DRI Usage in Bremen EAF)

Hydrogen and sponge iron

NORTHERN GERMANY

The ArcelorMittal steel company Bremen wants to reduce its carbon footprint at its Bremen site, initially by feeding natural gas and later hydrogen into the blast furnace. In addition, the installation of electrolysis capacities in Bremen will contribute to climate-neutral hydrogen production. Within the scope of the DRIBE project, ArcelorMittal wants to produce green sponge iron (DRI) in a new direct reduction plant which is then to be processed into steel in a climate-neutral way in a planned electric arc furnace. The DRI plant in Bremen will also initially supply the Eisenhüttenstadt site.

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Important Project of Common European Interest

WIPLiN

Hydrogen in the aviation industry

NORTHERN GERMANY

FEDERAL STATES
Bremen, Hamburg, Niedersachsen

PARTNERS
Airbus Operations

RUNTIME
2021–2035

APPLICATION
Aviation | Industry

FURTHER INFORMATION
https://t1p.de/2dm1

Source: Airbus

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Important Project of Common European Interest

WIPLiN

Hydrogen in the aviation industry

NORTHERN GERMANY

For Airbus, hydrogen is a key technology for the aviation of the future. With its aircraft concept ZEROe, it intends to sustainably reduce the emissions caused by aviation. ZEROe stands for a hydrogen-powered commercial aircraft. The concept "Hydrogen for the Infrastructure and Production of Aviation in Northern Germany" (WIPLiN) focuses, among other things, on the expansion of the corresponding hydrogen infrastructure. In the long run, Airbus is not only targeting the propulsion of aircraft but also the use of hydrogen in industrial production at its manufacturing sites in Bremen, Hamburg and Stade.

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The future‘s power-to-gas-facilities

Hydrogen Performance Center, Rostock

FEDERAL STATES
Mecklenburg-Vorpommern

PARTNERS
Apex Group

FOUNDATION
2002

APPLICATION
Production

FURTHER INFORMATION
www.apex-group.de

NORTHERN GERMANY

Source: Apex Group

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The future‘s power-to-gas-facilities

Hydrogen Performance Center, Rostock

APEX Energy operates the Hydrogen Performance Centre Northern Germany at the Rostock-Laage site in close proximity of the airport. Here, expertise is concentrated, and application research promoted. Together with the Leibniz Institute for Catalysis (LIKAT) and the Stralsund University of Applied Sciences, it implements joint projects and develops special solutions for coastal regions shaped by wind power. Leading companies from the fields of fuel cells, electrolysis, combined heat and power units (CHP) and battery storage complement APEX's system expertise.

NORTHERN GERMANY

Important Project of Common European Interest

HYTechHafen Rostock

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European H2 energy hub in the Baltic Sea region

NORTHERN GERMANY

FEDERAL STATE
Mecklenburg-Vorpommern

PARTNERS
YARA GmbH & Co. KG, Rostock Port,
Wind project IWEN

RUNTIME
2022–2030

APPLICATION
Production | Industry | Storage | Logistics

FURTHER INFORMATION
https://hy-rostock.de/

Source: Jan Oelker

Important Project of Common European Interest

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HYTechHafen Rostock

European H2 energy hub in the Baltic Sea region

NORTHERN GERMANY

At the Rostock seaport (SHR), an industrial centre for green hydrogen with more than 1 GW of electrolysis capacity will be established by 2030. The "Energy Port Rostock" strategy brings hydrogen technologies to operational readiness and develops and implements business models for an integrated value chain. "HYTechHafen Rostock" is one of the strategy's initial projects with an electrolysis capacity of 100 MW. The cooperation of the project partners and the existing infrastructure enables the immediate and integrated utilisation of products from electrolysis and ammonia synthesis (incl. oxygen and heat). The objective: creating an energy hub in the Baltic Sea region.

Important Project of Common European Interest

doing hydrogen

Hydrogen hub for Eastern Germany

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FEDERAL STATE
Mecklenburg-Vorpommern

PARTNERS
Gascade Gastransport GmbH, Ontras Gastransport GmbH, Apex Energy Teterow GmbH, Cemex Zement GmbH, Enertrag AG, Geo Exploration Technologies GmbH, Wintershall Dea GmbH

RUNTIME
2022–2026

APPLICATION
Production | Industry | Storage I Logistics

FURTHER INFORMATION
https://www.doinghydrogen.com/

NORTHERN GERMANY

Source: Invest in MV

Important Project of Common European Interest

doing hydrogen

Hydrogen hub for Eastern Germany

The project "doing hydrogen - The Hydrogen Hub for Eastern Germany" brings innovative producers, gas grid operators and consumers together. Their goal: establishing a European hydrogen hub in Eastern Germany by 2026 and, in the medium term, an H2 pipeline with connection points to Poland, the Czech Republic and Western Germany. In the project, large-scale production capacities of CO2-neutral hydrogen are linked via a pipeline system with users from industry and mobility. As such, the joint project addresses all four areas of the IPCEI announcement.

HY-5
The Green Hydrogen Initiative of Northern Germany

NORTHERN GERMANY