

Von hoher See zu den Verbrauchszentren

Integrierte Wasserstoffinfrastruktur als Rückgrat der deutschen und europäischen Wasserstoffversorgung

Dr. Christoph von dem Bussche

Deutschlands Hunger nach Wasserstoff

GASCADE

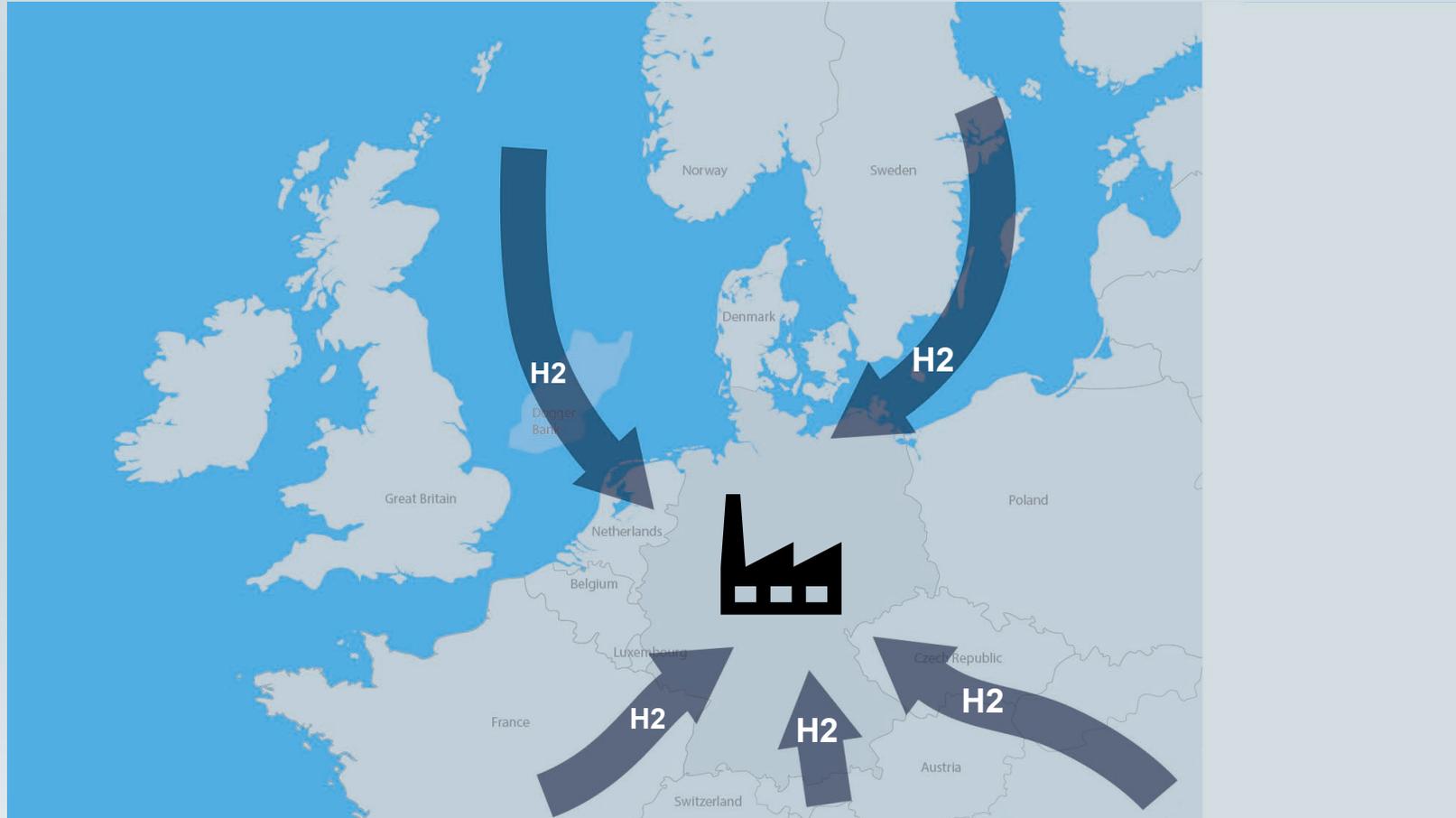


Prognose für 2045: ca. 500 TWh/a*. Das ist der höchste Bedarf in der EU.

*Quelle: DENA Leitstudie 2021

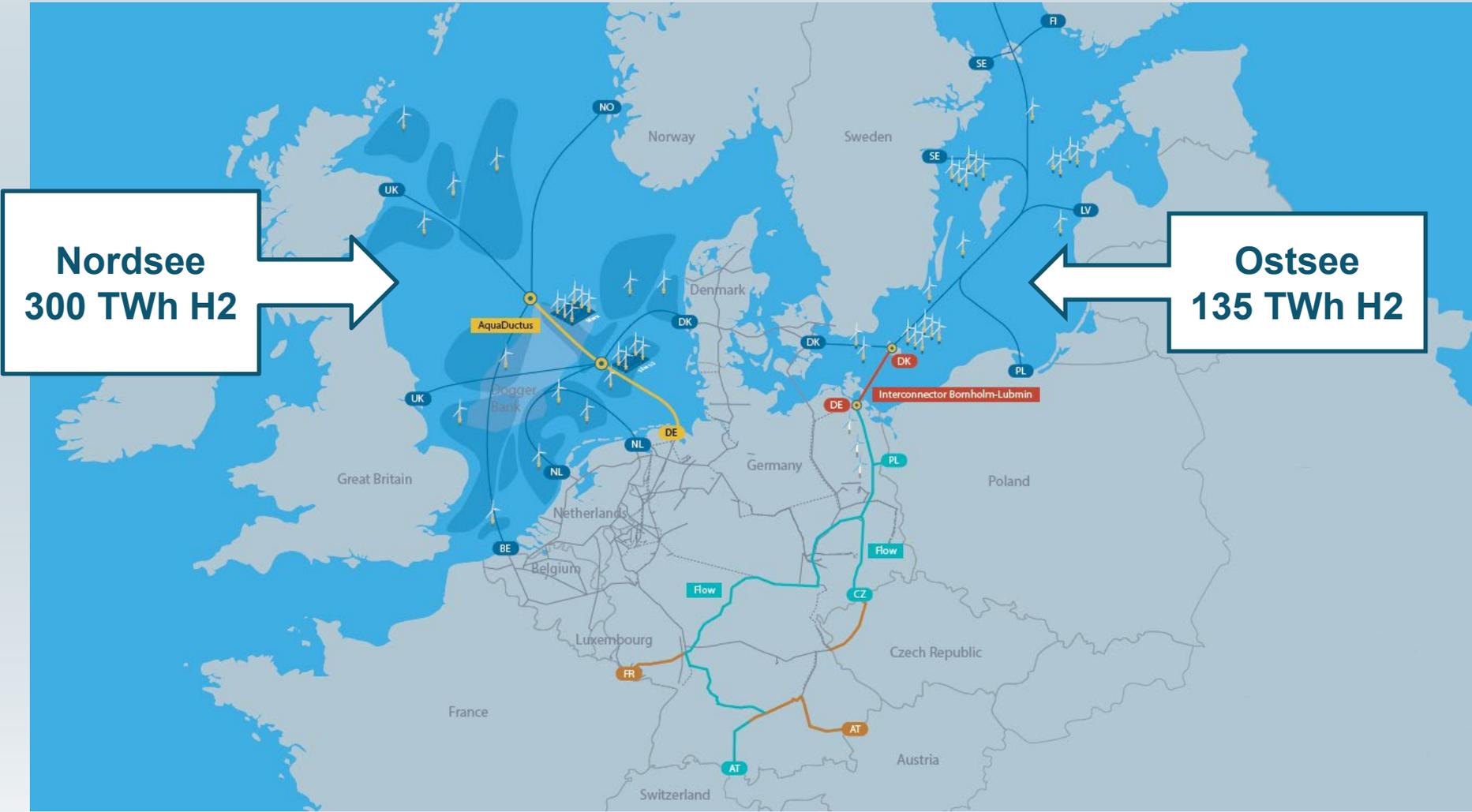
Das Gute: Alle Wege führen nach Deutschland!

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Die Wasserstoffpotenziale in der Nord- und Ostsee liegen direkt vor der Haustür.

Wasserstoffpotenziale auf hoher See!



Quelle: DNV; 03/23; Specification of a European Offshore Hydrogen Backbone

AquaDuctus: Der deutsche H2-Offshore-Backbone für die Nordsee



IPCEI-Kandidat



- ⇒ Kooperationspartner: GASCADE & Fluxys
- ⇒ Inbetriebnahme:
 - ⇒ 2029: SEN-1-Anbindung (IPCEI)
 - ⇒ 2035: AWZ-Ausbau
- ⇒ Gesamtlänge: 400km
- ⇒ Druck: ca. 120 bar
- ⇒ Kapazität von **min. 20 GW** ermöglicht Transport von Wasserstoff aus Nordseeanrainerstaaten nach Deutschland

Interconnector Bornholm-Lubmin: erste H2-Pipeline in der Ostsee

GASCADE



⇒ Kooperationspartner: GASCADE, CIP unter Beteiligung von energienet

⇒ Inbetriebnahme: 2029

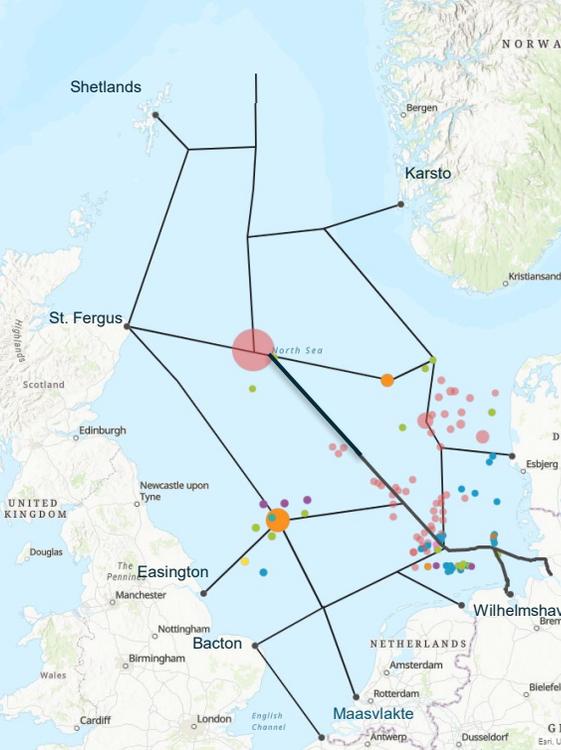
⇒ Gesamtlänge: 160 km

⇒ Druck: ca. 70 bar

⇒ Die Wasserstoffpipeline soll ab 2029 einen Transport von 4 GW realisieren und perspektivisch einen Transport von 10 GW ermöglichen.

Warum brauchen wir ein Offshore-Verbundnetz?

-  geostrategisch vorteilhaft
-  hohe Versorgungssicherheit
-  kosteneffizienter Transport
-  Risikodiversifizierung für Produzenten und Verbraucher
-  Grünes Gas kann alle relevanten Märkte erreichen
-  Netzanschlussmöglichkeit kann garantiert werden



OSTEND DECLARATION OF ENERGY MINISTERS ON THE NORTH SEAS AS EUROPE'S GREEN POWER PLANT
DELIVERING CROSS-BORDER PROJECTS AND ANCHORING THE RENEWABLE OFFSHORE INDUSTRY IN EUROPE

Recalling the declaration on the North Seas as a Green Power Plant of Europe in Esbjerg signed by the energy ministers of Belgium, Denmark, Germany and the Netherlands on 18 May 2022.

The energy ministers of France, Ireland, Luxembourg, Norway and the United Kingdom are joining this Ostend declaration.

Underlining that energy security and the fight against climate change are crucial to the future of Europe, we need to strengthen our cooperation to ensure affordable, secure and sustainable energy, while at the same time, continuing our efforts to protect the marine ecosystem. In response to Russia's aggression against Ukraine and attempts of energy blackmail against Europe we will accelerate our efforts to reduce fossil fuel consumption as well as dependence on fossil fuel imports and promote the rapid upscaling and deployment of renewable energy for an energy resilient Europe.

Further underlining that the goal of the development of infrastructure, production of offshore renewables and market design for the North Seas, is to accelerate the energy transition and maximise the benefits for households, industry and society as a whole.

We have set ambitious combined targets for offshore wind of about 120 GW in the North Seas. Based on the North Seas as a Green Power Plant of Europe, we aim to more than double our total 2030-capacity of offshore wind to at least 240 GW by 2050.

We acknowledge the progress made since the last summit including through the conclusion of both bilateral agreements on offshore renewable generation and non-binding commitments to cooperate on goals for offshore renewable generation for the North Seas in the revised framework for trans-European energy networks (TEN-E). We fully intend to continue work to develop a high level strategic integrated offshore network plan for the North Seas, including by enhanced cross-border coordination and maritime spatial planning.

In that respect we also welcome the initiative that the Transmission System Operators (TSOs) from Belgium, Denmark, Germany and the Netherlands have undertaken to develop a meshed offshore grid and to identify the next steps for its realisation. We invite them to continue the work and extend the process to the TSOs of the five countries that have joined this declaration.

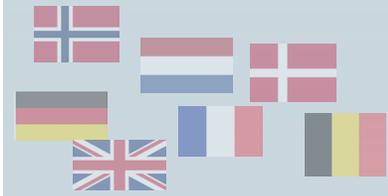
This will contribute to large-scale onshore and offshore production of renewable hydrocarbons. Germany, Denmark, The Netherlands and the United Kingdom have set combined targets of about 30 GW production capacity by 2030 and look to expand their production even further for 2050.

Koordination ist wichtig!

- ! Europäische Koordination von Strom- und Wasserstoffpotentialen
- ! Gleiche Prinzipien der Regulierung für On- und Offshore-Netze
- ! Offshore-Anlandekapazitäten müssen bei der Onshore-Netzplanung berücksichtigt werden
- ! Europäische H2-Offshore-Regulierung und Netzplanung erforderlich



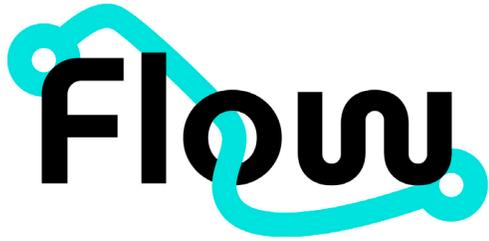
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Das deutsche Wasserstoff-Kernnetz...

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making
hydrogen
happen

GASCADE

Verbindung von Offshore-H2 mit Verbrauchszentren im Süden

- ⇒ Projektpartner: GASCADE, ONTRAS, terranets
- ⇒ Umwidmung bestehender Erdgasinfrastruktur
- ⇒ Transportleistung: mind. 20 GW
- ⇒ Länge: 1100 km

