



PtX in Denmark: Partnerships & opportunities

Invest in Denmark Conference, Copenhagen

2030 aspiration: Become the world's leading green energy major

Become the world's leading green energy major



One of the world's largest **green electricity producers**

Global no. 1
in offshore



Global top 10 in
onshore



A global leader in renewable H₂ & green fuels



One of the world's largest and most value creating **deployers of capital** into the green transformation



The world's **leading talent platform** in renewable energy



A **globally recognised sustainability leader**



A core contributor and **catalyst for change** towards a world running entirely on green energy

Ørsted has a strong starting point



Extensive experience in scaling up new technologies

- Proven track record of scaling new renewable technologies
- Vast experience in working with decision-makers to shape regulatory conditions for adoption and scale-up



Synergies with global renewable generation portfolio

- Global renewable portfolio with large potential for synergies with renewable hydrogen and green fuels business
- Proximity of generation assets to large renewable hydrogen and green fuels offtakers e.g., industrial clusters in Europe



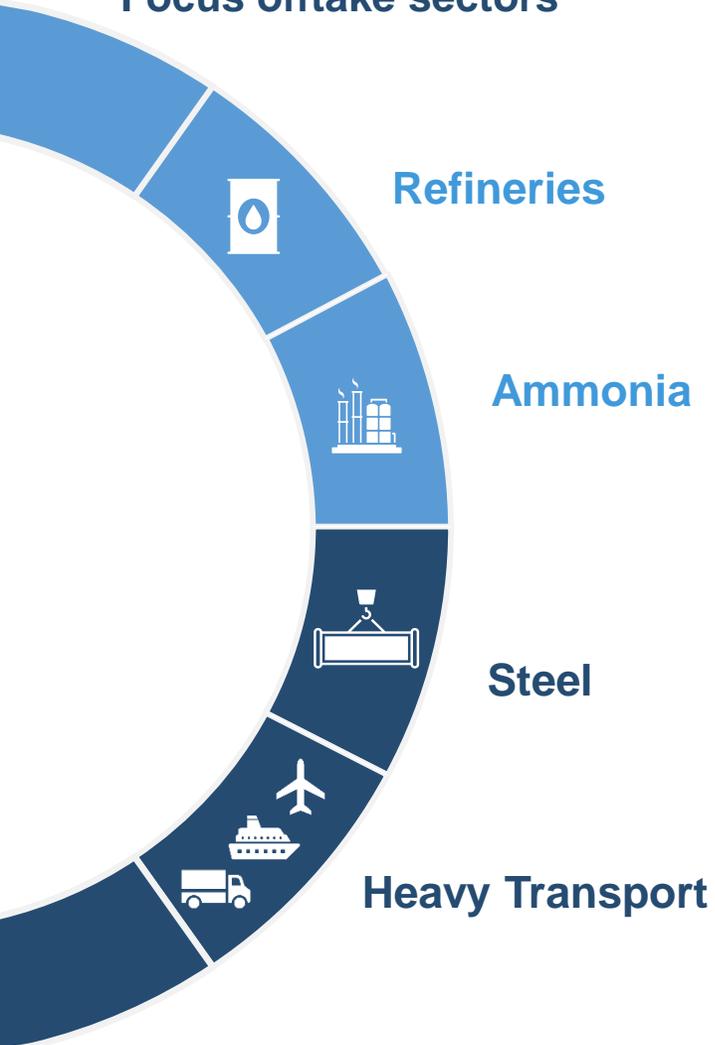
Proven partnership approach

- Proven ability to work with partners across the renewable hydrogen and green fuels value chain
- Attractive and credible partner for companies seeking to embark on a decarbonisation journey
- Established partnerships with key offtakers in target sectors

Clear offtake focus and strategic approach

■ Fossil H₂ substitution ■ New ren. H₂ application

Focus offtake sectors

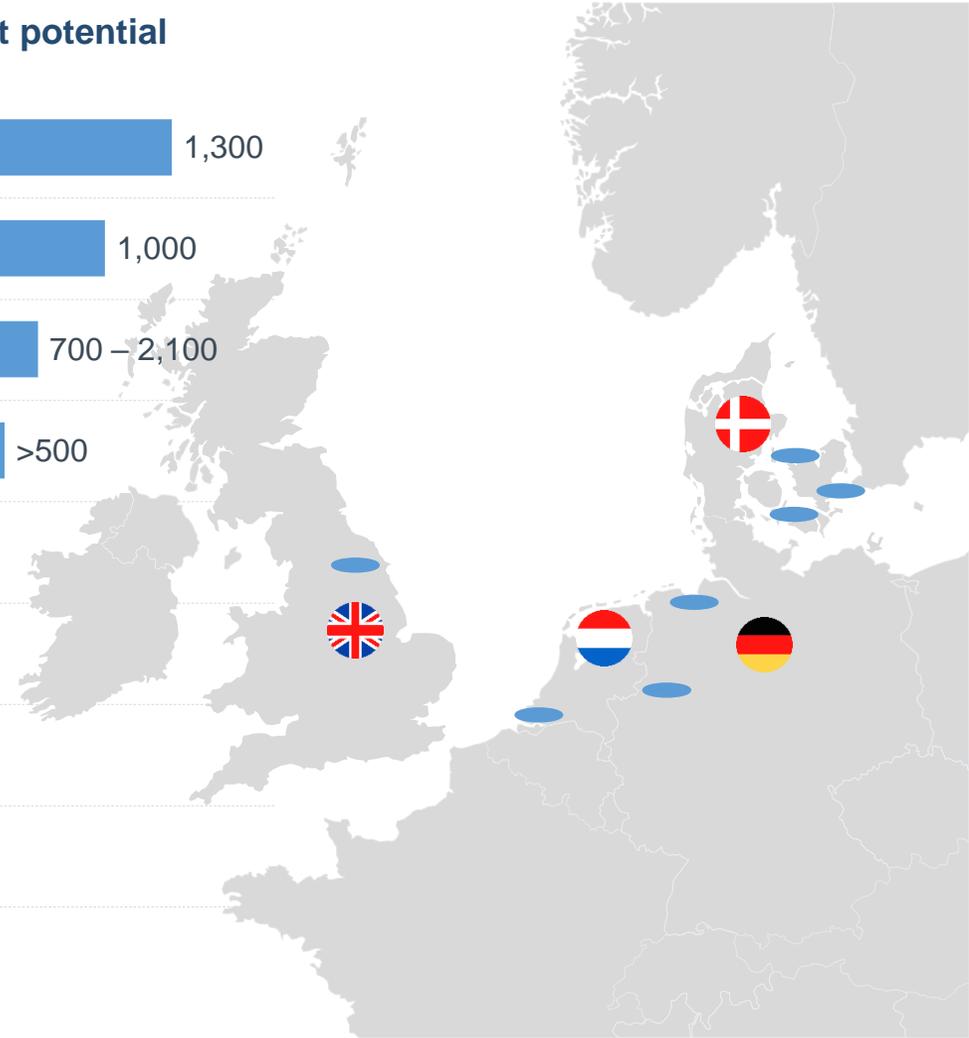


Strategic approach – building on strong Ørsted starting point

- **Establish and mature concrete projects** in focus sectors and work with global offtake partners on **identifying scale-up opportunities** and **expanding pipeline**
- **Adopt a phased approach** to project scale-up to quickly realise early phases and gain valuable experience for scale-up
- Engage in transparent **dialogues with regulators** on enabling decarbonisation of hard-to-abate sectors via renewable hydrogen and green fuels
- Develop **funding plans** for each project outlining target funding pools and path to commercial viability
- **Work closely with OEMs** on progressing technology improvements and cost-out
- **Lean forward into selected value chains** to drive deep decarbonisation

Strong concrete project pipeline across sectors and markets

Project	Main partners	Offtake	Current potential (MW) ¹
 Green Fuels for Denmark	▪ Maersk, SAS, CPH Airport, DFDS, DSV, Haldor Topsøe ³		1,300
 SeaH2Land	▪ Yara, ArcelorMittal, Dow, Zeeland Refinery, North Sea Port ⁴		1,000
 Westküste 100/ HySCALE100	▪ Raffinerie Heide, Hynamics, Holcim ⁵		700 – 2,100
 Lingen Green Hydrogen	▪ bp		>500
 Haddock	▪ Yara		100
 Gigastack	▪ Philips 66, ITM Power ⁶		100
 H2RES	▪ Everfuel, DSV, GHS ⁷		2
 Oyster	▪ ITM Power, Siemens Gamesa, Element Energy	<i>Offshore H₂</i>	1
 DFDS Europe Seaways ²	▪ DFDS, Ballard, Lloyd's Register ⁸		TBD



1. Intended as full electrolyser capacity currently identified 2. DFDS is project lead, Ørsted project partner 3. Includes COWI and BCG (knowledge partners) 4. Other partners include Smart Delta Resources, Province of Zeeland, Province of Oost-Vlaanderen 5. Other partners include EDF Germany, OGE, Stadtwerke Heide, Thyssenkrupp Industrial Solutions, Heide region development agency, Westküste University of Applied Sciences 6. Partnership also includes Element Energy 7. Other partners include Green Hydrogen Systems, NEL Hydrogen, Hydrogen Denmark Energinet Elsystemansvar 8. Other partners include ABB, Hexagon Porus, KNUD E. HANSEN, Danish Ship Finance

Green Fuels for Denmark | Leading Danish companies join forces on an ambitious sustainable fuel project in the Copenhagen area



Copenhagen Airports CPH

MAERSK

DSV

DFDS

Ørsted

SAS



Supported by
COWI

BCG

Associated partners

nel • Everfuel

MOLSLINJEN REGION

HALDOR TOPSOE

DTU

Phase 1: Develop hydrogen production

~10 MW

Phase 2a og 2b: Enter carbon to produce maritime and aviation fuel

~100 MW (2a)

~250 MW (2b)

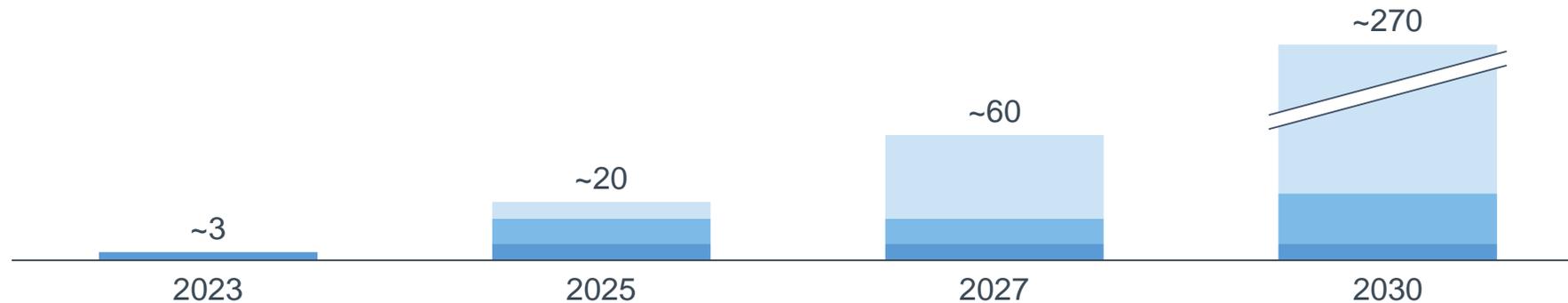
Phase 3: Scale through aviation demand

~1.3 GW

Jetfuel vol. equivalent to 30% of CPH's demand

Electrolyser size (cum.)

Fossil fuel replaced (kt)



In NW Europe offshore wind electricity generation is well suited for electrolysis

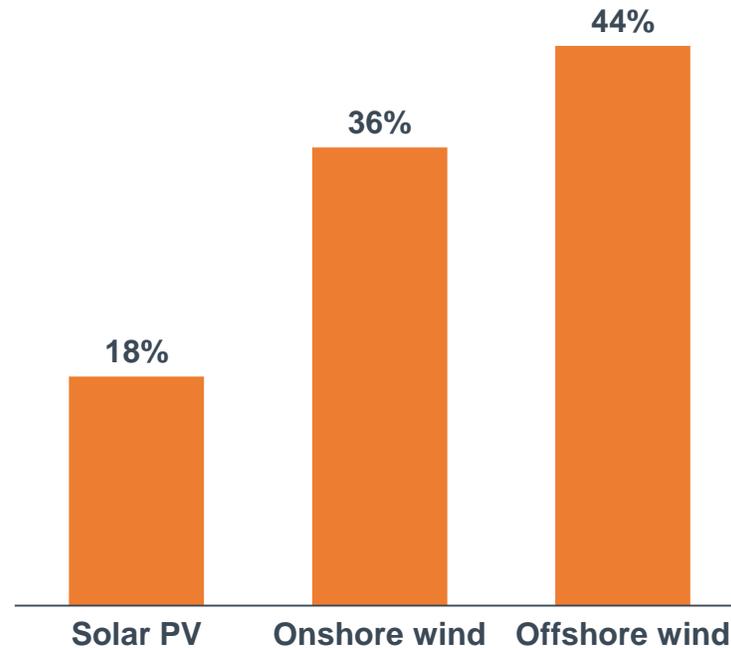
Scale

Offshore wind capacity of >25GW now installed in Europe



Capacity factor

Highest capacity factor of variable renewable generation¹



Resource availability

450GW realizable OFW potential identified in Europe²



• Sources: IRENA Renewable Power Generation Costs in 2019; 1. 2019 average global capacity factors 2. Potential towards 2050 identified by the interest organisation Wind Europe. European Commission expect 230-450GW (depending on scenario) offshore wind in 2050