The Danish regulatory framework for green transitioning

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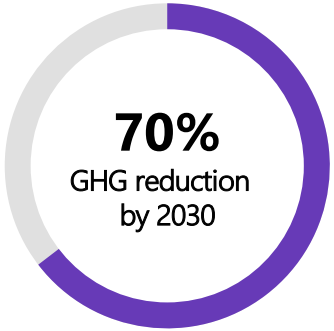
IN THIS PRESENTATION

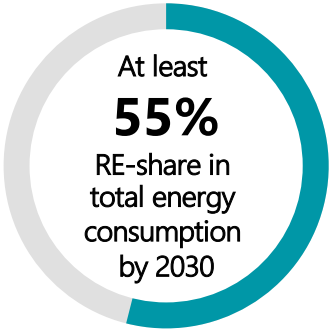
- The Danish approach to decarbonisation and climate neutrality.
- Increasing RE power generation
- Power-to-X and utilising CO_2
- Capturing and storing CO_2

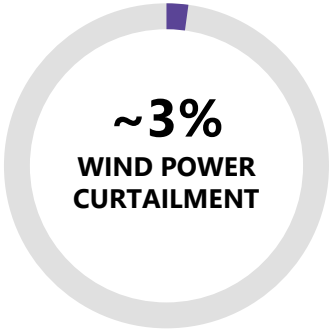
The Danish approach to the green transition

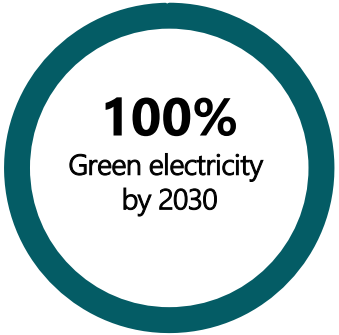
A FLEXIBLE INTEGRATED ENERGY SYSTEM

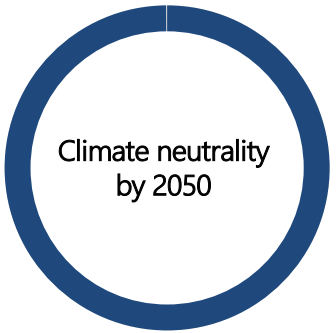
Vision of a climate neutral society in 2050



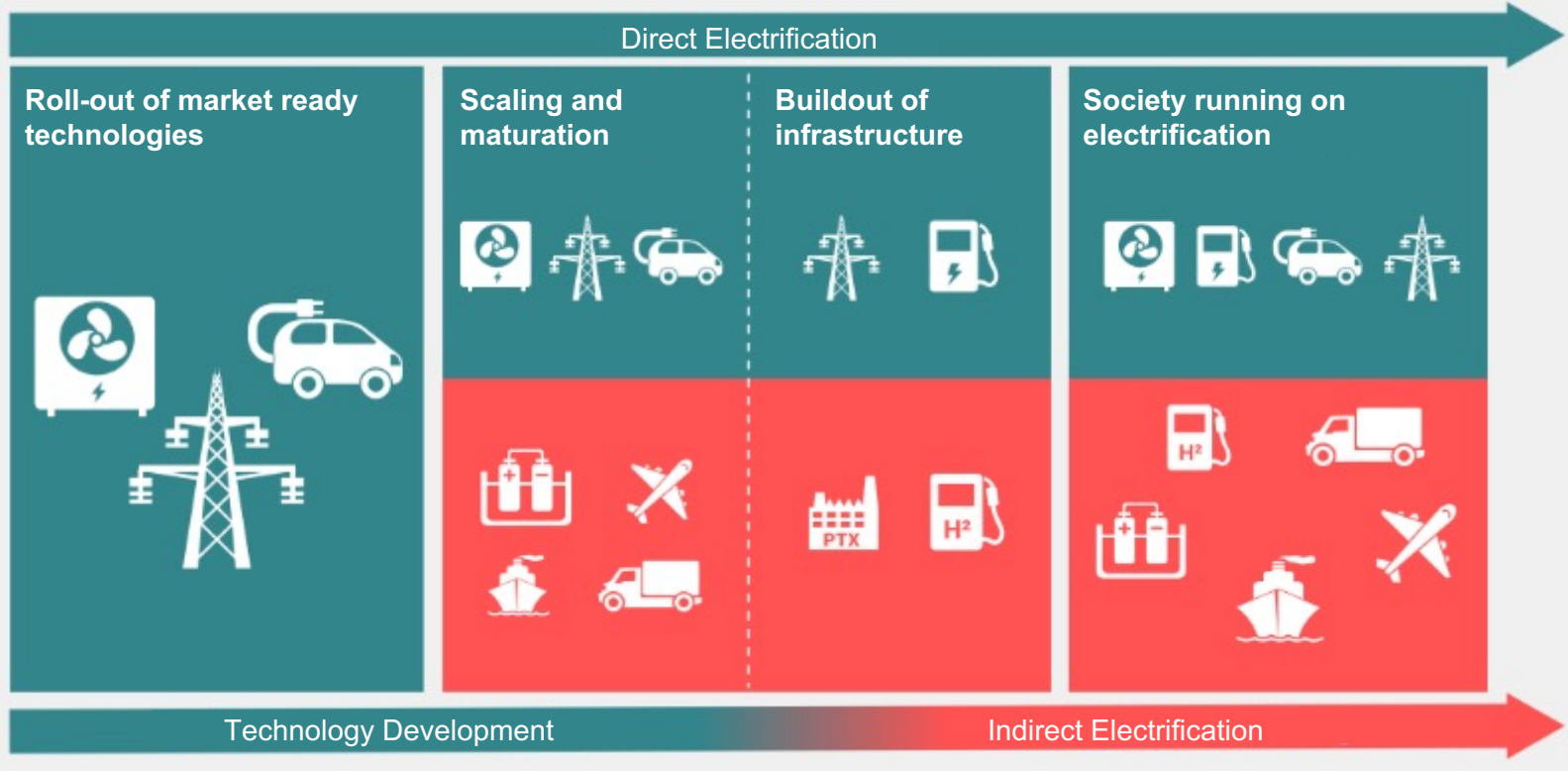








GETTING TO NET ZERO



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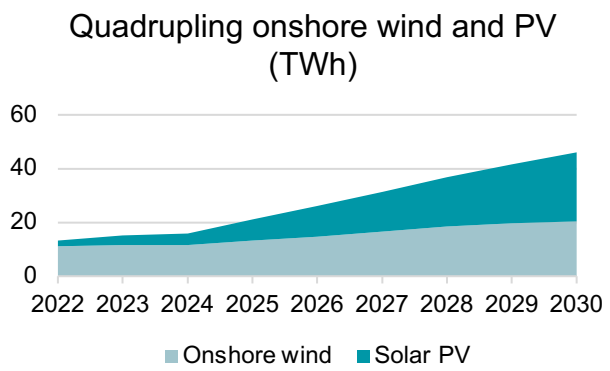
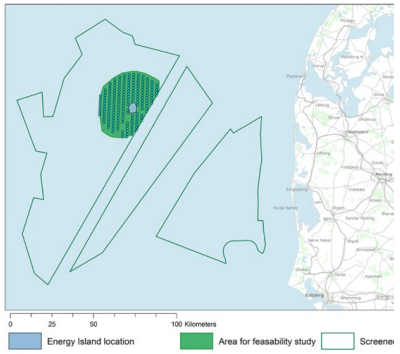
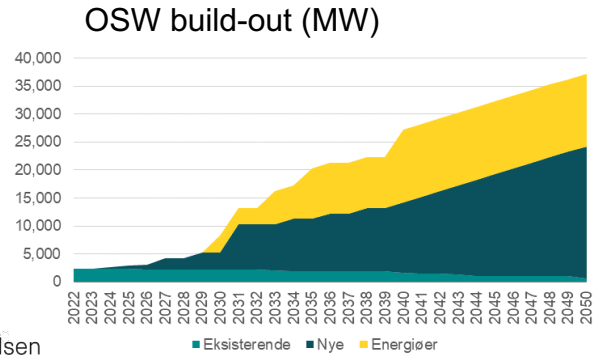
RE power generation in Denmark towards 2050

Increased RE Power generation



North Sea energy island
~ 100 km off the coast
from Thorsminde





Baltic Sea energy island
~ 15 km off the coast
from Bornholm

Europe’s green power house

Energistyrelsen
Danish Energy Agency

- Broad agreement behind the energy islands in the North Sea and at Bornholm
- The Esbjerg Declaration: “The North Sea to be Europe's green power house
- Belgium, Denmark, Germany and the Netherlands had agreed to jointly develop 150 GW in their North Sea territories
- Baltic Sea Countries Agree to increase offshore wind capacity sevenfold by 2030

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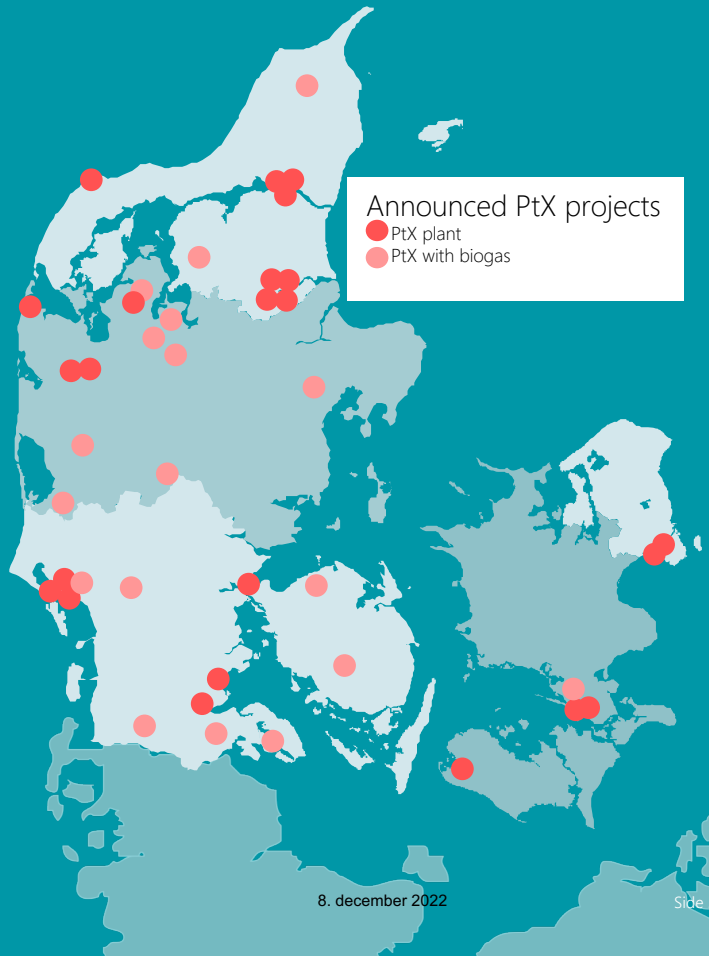
Power-to-X in Denmark

Status on Power-to-X in Denmark

Power-to-X = Green hydrogen and CCU

- The Climate Agreement for Energy and Industry 2020:
  - Agreement of the Danish Parliament to prepare a Danish strategy for Power-to-X (PtX) and Carbon Capture and Utilization (CCU).
- The Government's strategy for Power-to-X – December 2021.
- Based on more than 20 analyses totalling more than 500 pages.
- Political target of 4-6 GW electrolysis capacity by 2030
- Tender for operational aid
- Simultaneously the PtX agenda has accelerated.
- More than 30 Power-to-X projects has been announced in Denmark totalling more than 7 GW combined



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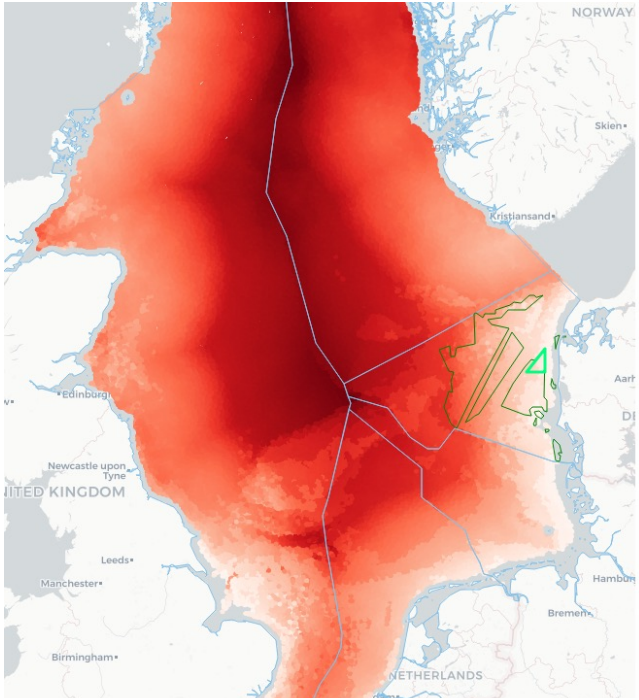
Why Power-to-X in Denmark?

Energy system in Denmark and PtX:

- Increasing share of the electricity consumption is based on renewable energy.
- The North See offers a substantial offshore wind resources with competitive electricity costs and a well developed and functioning electricity grid.
- Flexible PtX plants located near RE resources enables lower demand for grid expansions.
- Extensively developed district heating grid enables utilization of excess heat from PtX.

Know-how and partnerships:

- Know-how in all parts of the value chain
- Partnerships for PtX, aviation, shipping etc.



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Capturing and storing CO_2

THE DANISH CCS STRATEGY

AGREEMENTS ON A ROADMAP FOR CAPTURE, TRANSPORT AND STORAGE OF CO_2 (30 JUNE 2021 + 14 DECEMBER 2021)

- CCS will be used to reduce emissions from hard-to-abate sectors and contribute with negative emissions
- Support development of full scale CCS-value chain in Denmark
- Enable full scale CO2-storage in Denmark and import/export of CO2 with the aim of developing Denmark into a European hub for CO_2 storage
- Storage of CO_2 in Denmark should happen in an environmentally sound and safe manner – and not be used for Enhanced Oil Recovery (EOR)

A total of 36,5 billion DKK (approx. 5 billion EUR) has been allocated to CC(U)S, which will support capture and storage of at least 3.2 MTA CO_2 by 2030

BUILDING A DANISH CCS VALUE CHAIN

STATUS ON CO_2 CAPTURE, TRANSPORT & STORAGE

- First tender for CC(U)S funds soon to be concluded
- Denmark recently signed first bilateral agreement on cross-border CO_2 transportation.
- 6 regional-clusters on CCUS infrastructure will deliver report 2nd of January 2023
- Yesterday, 6 December 2022, the DEA granted a license to Greensand Pilot Injection Project.
- Deadline for Denmark's first tender for full-scale CO_2 investigation and storage licenses in the North Sea has passed & DEA is currently processing applications
- Strategic environmental impact assessment for potential storage sites on- and nearshore expected to be completed by end of 2023


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Thank you