

Prospects for offshore wind – where is the offtake?

Montel Group Danish Energy Day 2024



Ørsted footprint

United States of America
7.5 GW
Offshore
Onshore
Solar PV
Storage
P2X

United Kingdom
8.6 GW
Offshore
Onshore
Solar PV
Storage

Ireland
0.5 GW
Onshore
Solar PV

Spain
Onshore

France
0.1 GW
Onshore
Solar PV

Germany
2.6 GW
Offshore
Onshore
Solar PV

The Netherlands
0.8 GW
Offshore
P2X

Denmark
3.0 GW
Offshore
CHP plants
Sales of energy
P2X

Sweden
2.8 GW
Offshore
P2X
Sales of energy

Poland
2.8 GW
Offshore

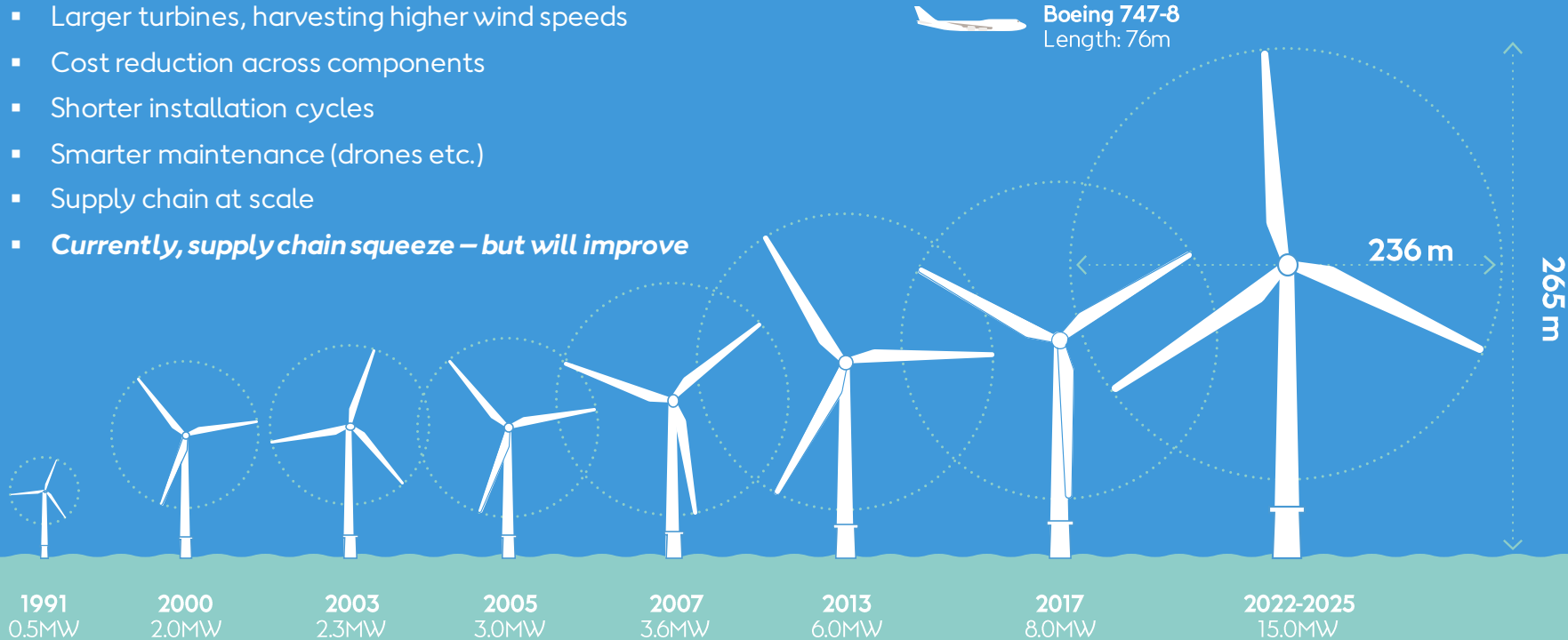
Taiwan
1.9 GW
Offshore

South Korea
Offshore

Australia
Offshore

Over the past decades, offshore wind has been industrialized

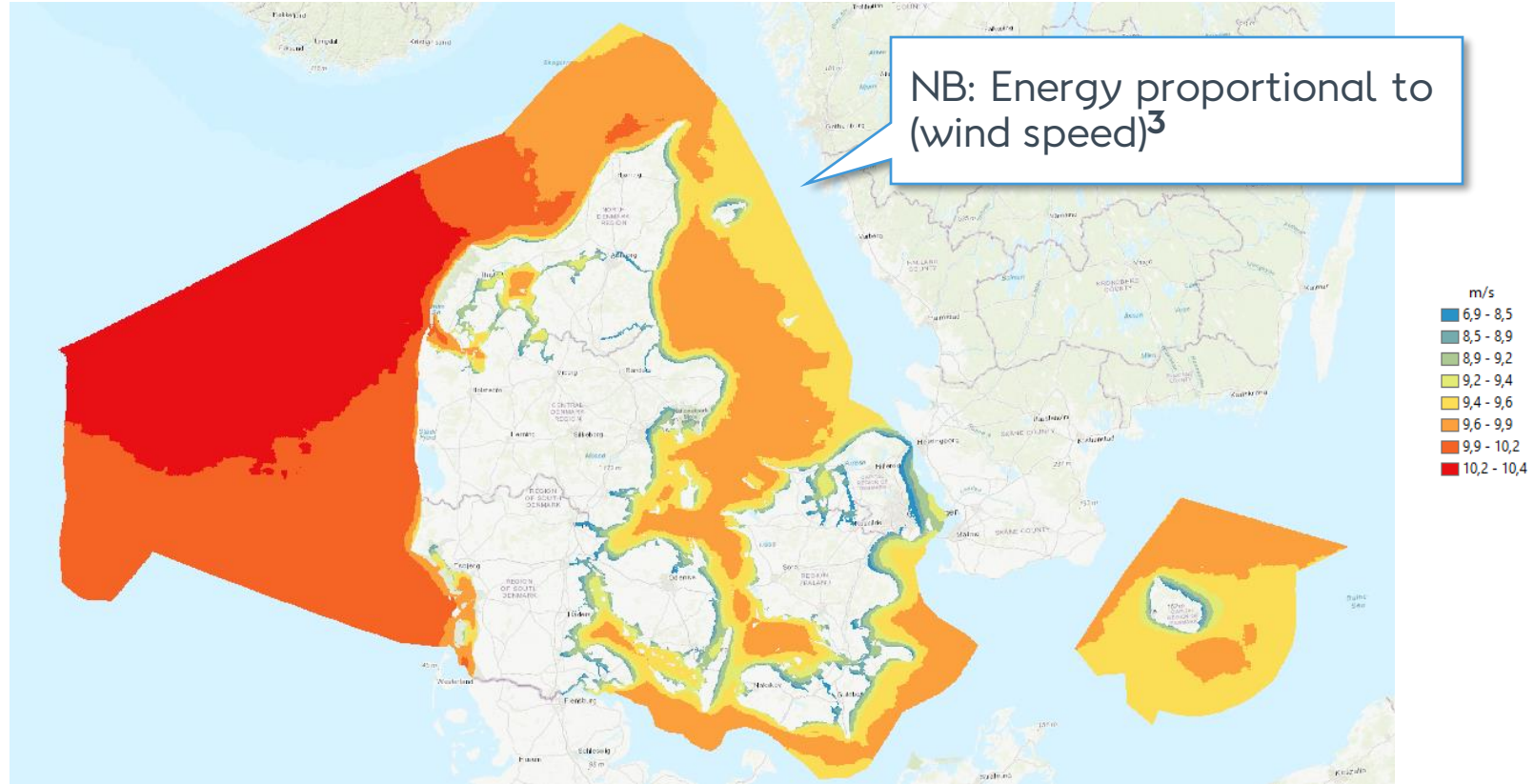
- Larger sites, further out to sea
- Larger turbines, harvesting higher wind speeds
- Cost reduction across components
- Shorter installation cycles
- Smarter maintenance (drones etc.)
- Supply chain at scale
- **Currently, supply chain squeeze – but will improve**



The case for offshore wind: Denmark as the “Green Kuwait”



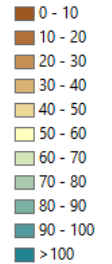
Excellence part 1: Average wind speed in Denmark



Excellence part 2: Water depths and seabed



m water depth



Most seabed is suitable for monopiles

Excellence part 3: Offshore wind has minimal NIMBY effects... at least in North Sea and open waters



Middelgrunden
(Copenhagen)



Hornsea 1 (UK)

Problem: Given our excellent North Sea wind resource, how do we as Danes make the most of this? What are KPI's?

1

Climate effect: How do we achieve the biggest, and fastest, effect on Earth's climate?

2

European security and robustness: How do we aid the EU drive to strengthen security + be able to stand on our own feet and compete globally in a robust way?

3

Public acceptance: How do we make the public proud of what we are doing, and reduce negative effects on local societies?

...and finally...

4

Income : How do we earn most money as a nation?



Focus on the Income! Entering the Lion's Den...



Good afternoon, Lions!

Solving the “problem”: Where is the offtake? Who are the customers?

Sell power



- Small DK power market
- Marginal pricing not ideal for a green future system
- Regional wind buildout → Low capture prices also in DE on windy days
- High need for new power lines
- Bottleneck on border to DE
- Bottlenecks internally in Germany

Produce E-fuels



- Markets and standards take time to develop → delay risk
- E-fuels easy to transport long distance → competition
- Big chemical factories → public opposition
- Load factor is an issue, compared to e.g. Northern Sweden

Attract energy intensive industry or data centers



- Intense competition between countries to attract e.g. semiconductors and battery cell producers
- Energy policy must be integrated with industrial policy
- For data centers, limited upside for the host country – cheap power for big tech
- Public acceptance?

Hydrogen to Germany



- Hydrogen is used right now in Germany (from nat. gas)
- High willingness to pay from German steel players etc.
- Exported in pipelines → cheap, efficient, and with little negative effects on public
- Hydrogen flexibility serves as “storage”

Local synergies: The best load factor of electrolyzers is achieved by seeing offshore wind as cornerstone of “energy parks”

Offshore wind as stand-alone



Energy park (hub) with complimentary supplies of green power



Questions?

