

Offshore wind outlook

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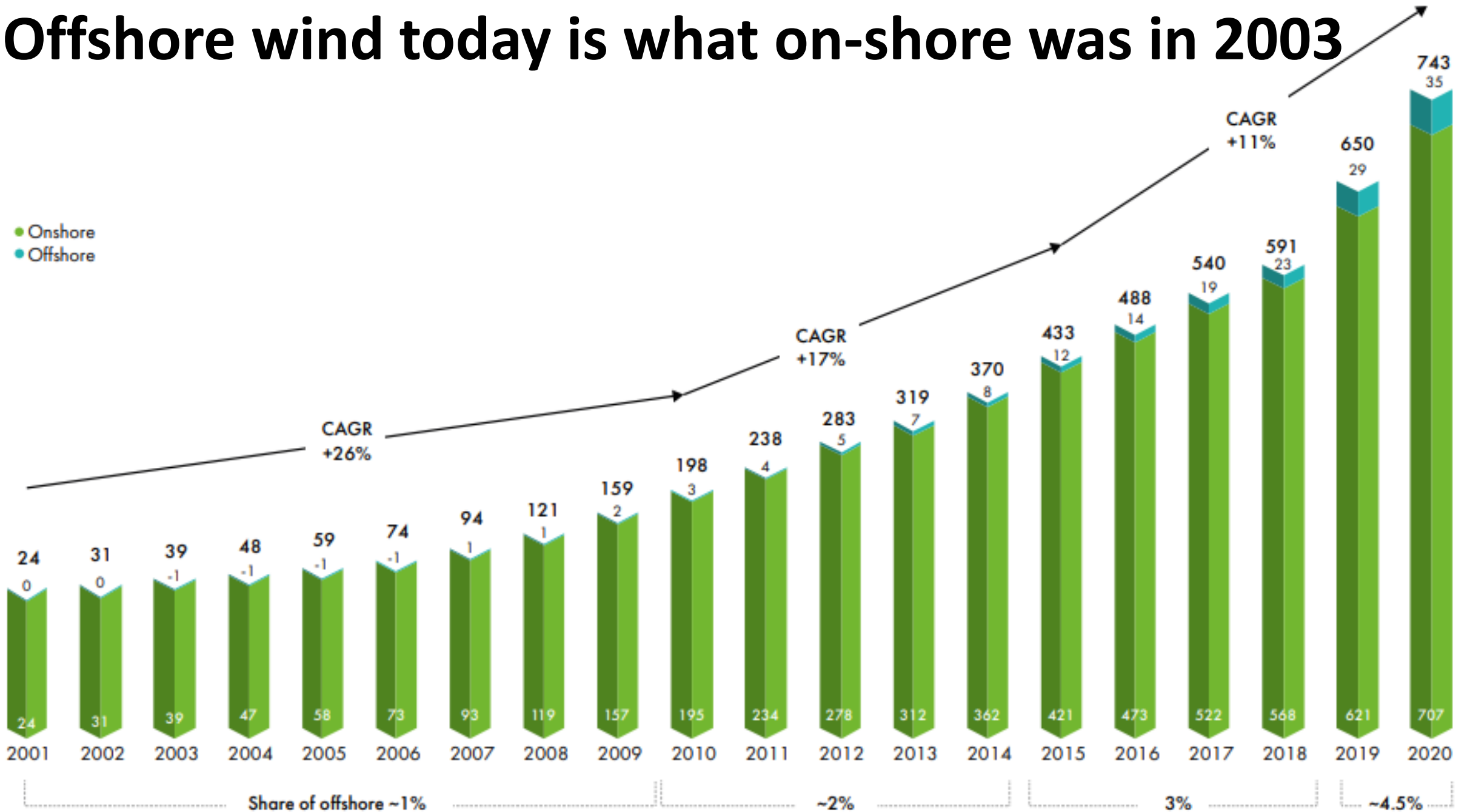
Why offshore wind?

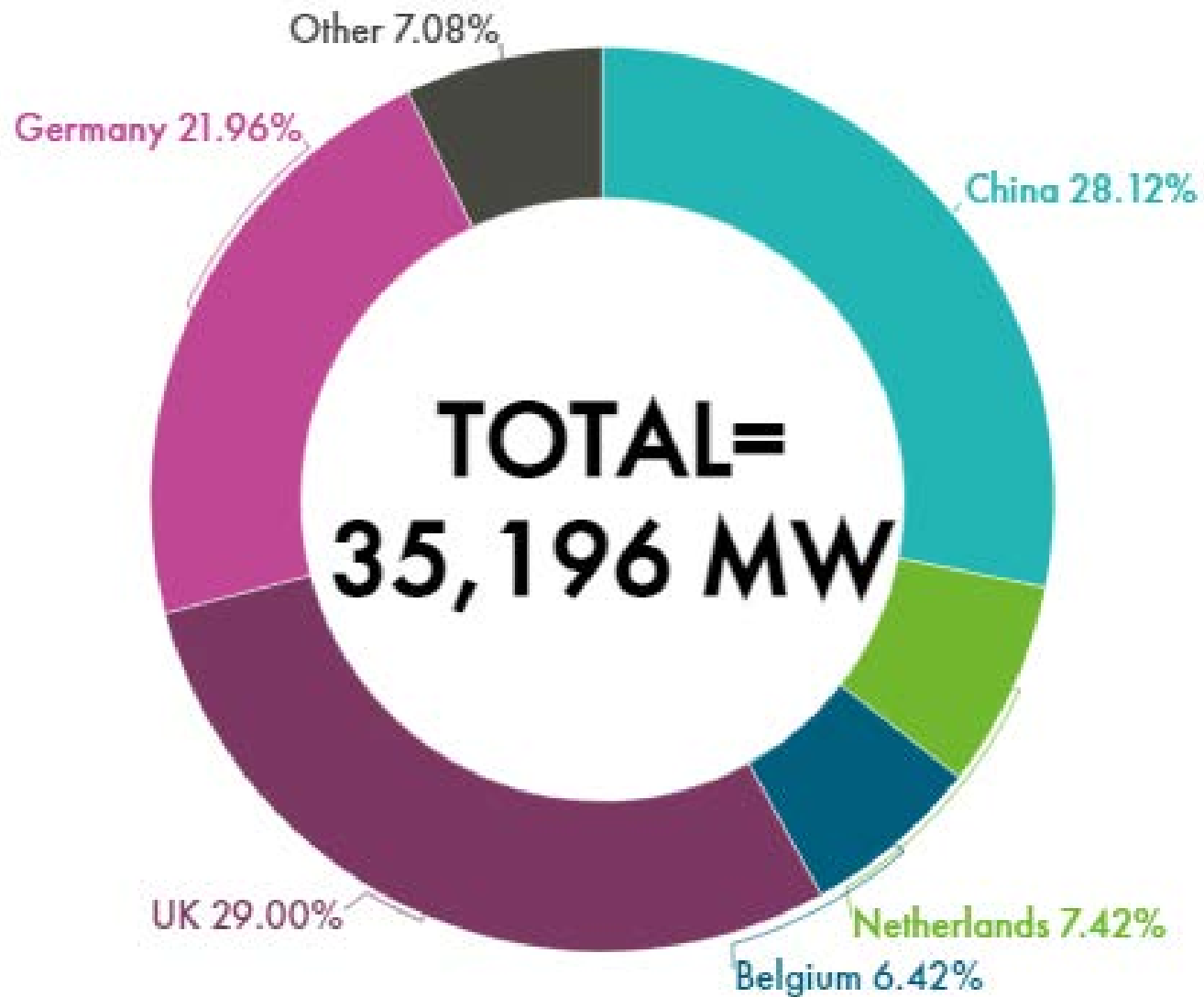
- Huge global potential
- Reliable source of energy
- Low environmental impact
- Cheaper than you think
- Research, Innovation & Deployment will further increase efficiency and reduce cost




Offshore wind today is what on-shore was in 2003

● Onshore
● Offshore





Global distribution of offshore wind capacity by end of 2020

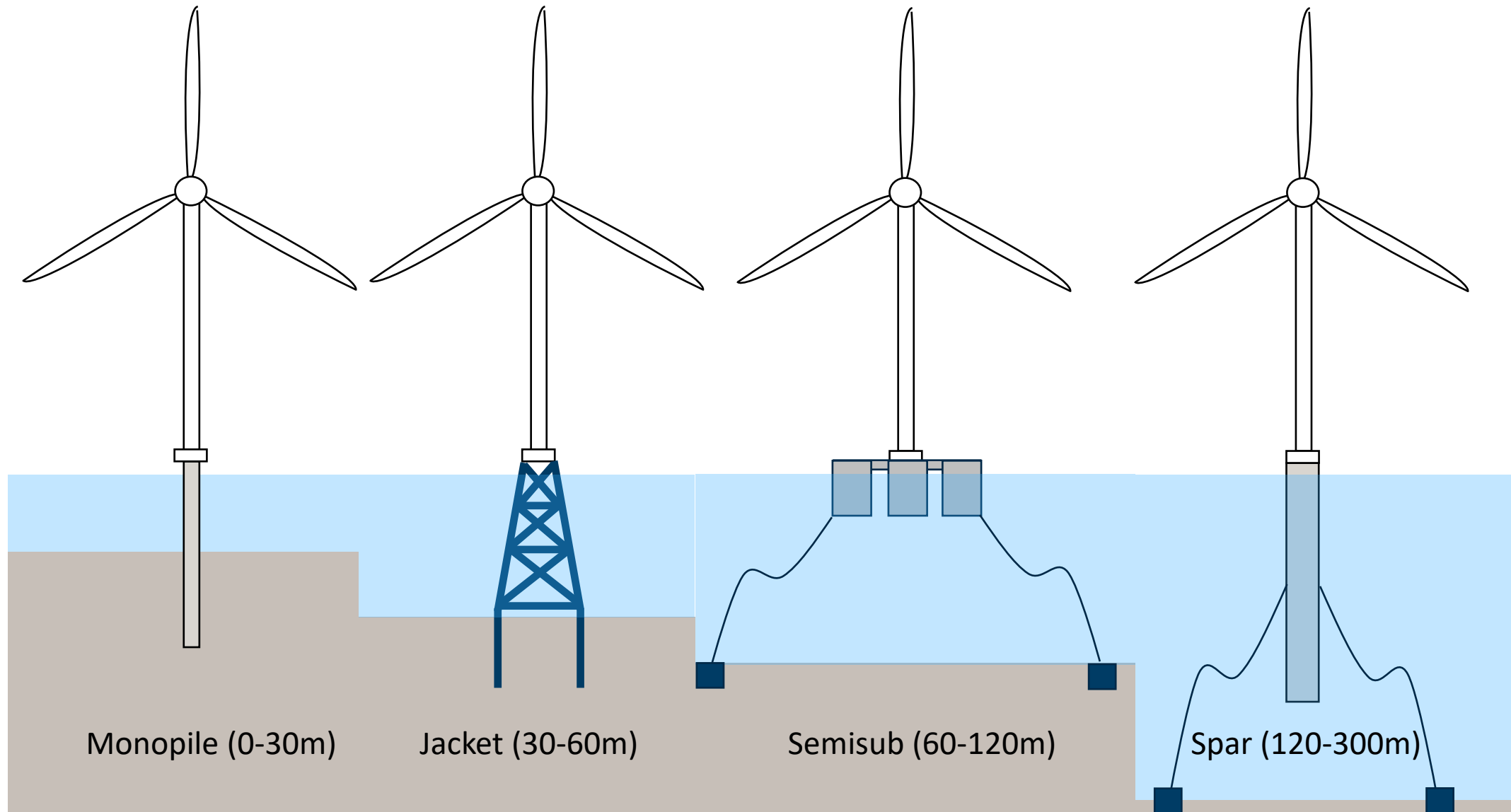


London Array 630 MW offshore wind farm in operation in the outer Thames Estuary. The wind farm spans about 100 km² and includes 175 turbines each rated 3.6 MW installed in waters up to 25 m deep. Illustration is courtesy of London Array Limited.

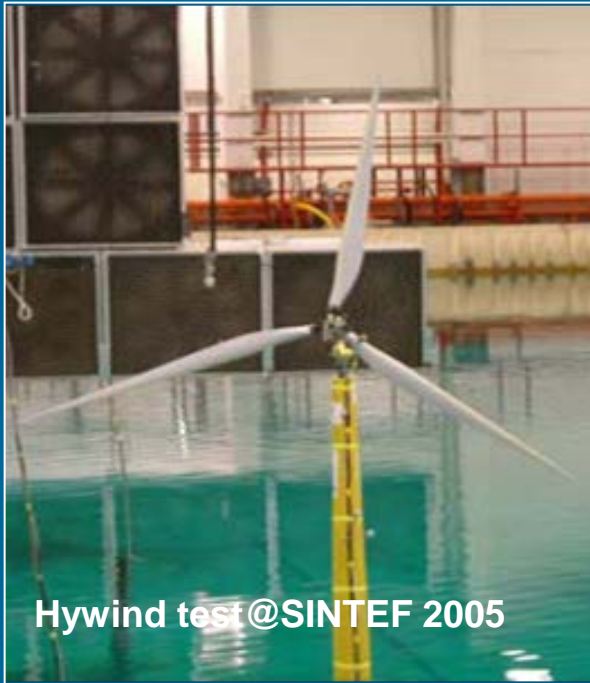
Most offshore wind farms are close to shore and at shallow water

New projects are planned further from shore and at deeper water

Offshore wind turbines are available for any water depths



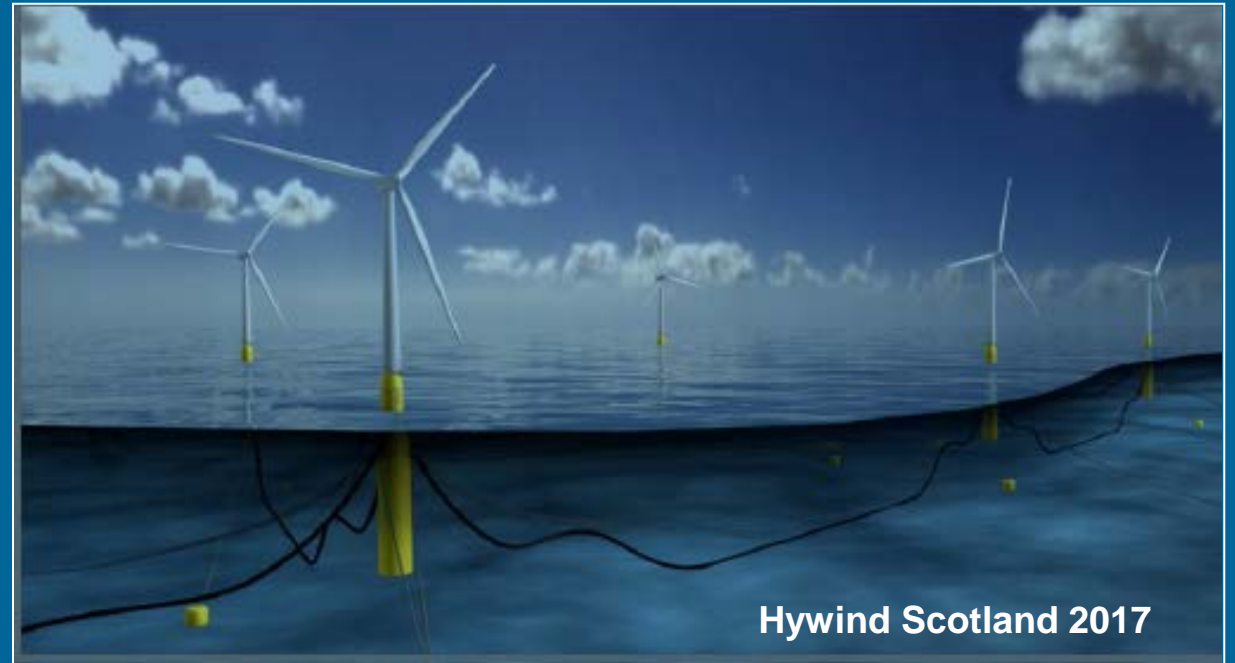
Exciting development of floating wind



Hywind test @ SINTEF 2005



Hywind Norway 2009



Hywind Scotland 2017

Floating wind is today more expensive than bottom-fixed, but through research, innovation and deployment it can be made cheaper



Our ambitions for Hywind:

To lead offshore floating wind to industrial scale by 2030.

To develop Hywind as the most cost-competitive concept.

50%

reduction in capital expenditure per MW by 2023 compared to Hywind Scotland

40-60_{EUR/MWH}

levelised cost of energy by 2030

A great science and engineering challenge!



1000 GW

30 years

200 km

200 m

NORTH WIND

- Offshore technology for the international market
- Wind energy deployment respecting nature
- Opportunity for collaboration
- Substantial budget for R&I: 320 MNOK (2021-2029)

www.northwindresearch.no



Make sure to be there!

EERA DeepWind'2021

18th Deep Sea Offshore Wind R&D Conference

Online and in Trondheim, Norway

13-15 January

TOPICS

- New turbine and generator technology
- Grid connection and system integration
- Met-ocean conditions
- Operation & maintenance
- Installation and sub-structures
- Wind farm optimization and control
- Experimental testing and validation
- Public engagement and environmental impact
- Energy transition perspectives



Technology for a better society