The next steps for floating offshore wind

Arne Eik
Head of Business Development offshore wind Norway

Floating wind 2020, Haugesund, 24 June
Floating offshore wind to become big

Key Growth Markets

EUROPE: UK, Norway, France, Ireland, Spain, Portugal, Italy, Greece, Turkey

ASIA-PACIFIC: Japan, South Korea, China, Taiwan, Vietnam, Indonesia, Philippines, India

NORTH AMERICA: USA: California, Oregon, Maine, Gulf of Mexico

REST OF WORLD: Brazil, South Africa, Morocco, Saudi Arabia

Sources: Equinor analysis based on Equinor Energy Perspectives, BNEF, IHS, Baringa, Aurora, Poyry, National Grid, IEA, IRENA, stated national and industry targets.
Floating wind roadmap: Stepping up floating wind to become a competitive source of energy

Hywind demo 2.3 MW
Hywind Scotland 30 MW
Hywind Tampen 88 MW

Technology development
Cost reduction
Industrialization

2009 2017 2022 2024-26 2027-30 2030+

Long-term vision
- Utility generation
- Power export
- Island states
- O&G integration
- Power-to-Gas (H₂)

First wave of floating opportunities
Key FOW projects

2009 2017 2022 2024-26 2027-30 2030+

Utility scale project ~500-1000MW

Fully commercial technology 40-60 EUR/MWh

• Utility generation
• Power export
• Island states
• O&G integration
• Power-to-Gas (H₂)
Costs of floating offshore wind are coming rapidly down

Cost reduction drivers:

- Project experience
- Scale effects
  - Larger turbines
  - Larger projects
- Competitive supply chain
  - Efficient and standardised operations
  - Mass fabrication of substructures
- Incremental & disruptive innovation
  - Optimised substructures
  - Innovative mooring solutions
  - New materials
  - New floating concepts

LCOE (Euro per MWh)

- Hywind Scotland
- Hywind Tampen
- Next commercial 200-250MW
- Future 500MW
- Future 1000MW ~50 €/MWh
A vision for offshore wind in Norway

Industrial development and floating offshore wind short/mid term

Power export to Europe on a longer term

Power to x/Hydrogen might be significant

Profitable power export to Europe
Profitable power to X
Power to land Norway
O&G / Ocean power

Sources: BVG Associates, Thema Consulting, project team assessments