Hywind

Experience and way forward with Hywind

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Statoil is an international energy company with operations in 36 countries. Building on 40 years of experience from oil and gas production on the Norwegian continental shelf, we are committed to accommodating the world’s energy needs in a responsible manner, applying technology and creating innovative business solutions.
Strategic direction
Our renewables strategy: Creating value from superior offshore experience

Leveraging Statoil’s existing core competencies, we focus on:

- Offshore wind
- Carbon capture and storage
Building material positions in offshore wind

Project execution to operations: Sheringham Shoal, UK
317 MW
*In operation, 2012*

Working to bring technology costs down: Dudgeon Offshore, UK
Up to 560 MW
*Under development*

Larger projects, further from shore: Doggerbank, UK
Up to 9 GW
*Under consent*
Applying technology to develop Hywind Demo

- **Slender floating cylinder, anchored**
- In operation from September 2009
- Produced 23 GWh since start-up
- Capacity factor 50% in 2011
- Experienced wind speed of 40 m/s and maximum wave height of 19 m
- Floater motions have no negative impact on turbine performance
- Concept verified
Technology development

- **Hywind Demo results**
  - Technical concept is proven
  - Basis for optimized design
- **Next step: Pilot parks (2 - 4 years)**
  - Demonstrate improvements
  - Demonstrate park feasibility
  - Risk reduction
- **Future step: Large parks (8 - 10 years)**
  - 500 - 1000MW
  - Economy of scale

Will be cost competitive with bottom-fixed in mature market
Value will be maximised in mature market

Scaled-up design
Standardisation
Optimised fabrication
Assembly, transportation and installation
Better winds

Reduced Costs
Higher income
Hywind Pilot Park objective to demonstrate cost efficient and low risk solutions for commercial scale parks

- 12 – 15 MW
- Production start 2016
- Multiple units in park-configuration
- Verify scaled up, lighter design
- Optimise assembly and installation
- Reduce construction risk for full scale parks

Alternative locations for Pilot Park in Maine, US or Scotland
Floating wind - potential markets

- North sea – Norway and UK
- US, Atlantic and Pacific coast – and Great Lakes
- Japan and Korea
- Iberian Peninsula and Mediterranean Sea
Conclusions

• Significant global potential for floating wind
• Local supply chains can be developed
• Will be cost competitive with fixed bottom solutions
Thank you

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