Statoil New York WEA – status and way forward

New York task force meeting
3 October 2017, Riverhead

Christer af Geijerstam, Project Director
Presentation outline

• Introduction to Statoil
• Current and planned activities
• Stakeholder outreach activities
Statoil’s four core areas

Norwegian continental shelf
Build on unique position
• Highly cost competitive
• Attractive project pipeline
• Exploration potential

Midstream and marketing
Access premium markets
• Flow assurance
• Asset backed trading
• Capital light

International oil & gas
Deepen core areas
• Enhance Brazil portfolio
• Flexible US position
• New growth options

New energy solutions
Industrial approach
• Offshore wind
• Low-carbon solutions
• Ventures, R&D

Always safe
High value
Low carbon
New Energy Solutions

Build a profitable renewables business

OFFSHORE WIND

SOLAR

ENERGY STORAGE

Develop new lower-carbon business opportunities for Statoil’s core products

NCS – CO2 STORAGE

CO2 use /IOR

HYDROGEN
Providing offshore wind to >1M homes

<table>
<thead>
<tr>
<th>Attractive markets</th>
<th>Offshore wind projects currently in progress delivering &gt;1100 MW, and potential for 5m homes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Playing to our strengths</td>
<td></td>
</tr>
</tbody>
</table>

- **Hywind demo**: In operation, 2.3 MW, 2009-2012
- **Sheringham Shoal**: In operation, 317 MW, 2012-
- **Dudgeon**: Completed, 402 MW, 2017
- **Hywind Scotland**: Completed, 30 MW, 2017
- **Arkona**: In development, 385 MW, 2019
- **Dogger Bank**: Consented, 3 x 1.2 GW, 2020-
- **New York**: In development, >1 GW, 2024-
- **Hywind large scale**: North West Europe, United States East Coast, Japan, US West Coast

* All capacity figures on 100% basis
New York Wind Energy Area

**Site Key Data**

<table>
<thead>
<tr>
<th>Key Data</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>79,350 acres (321 km²)</td>
</tr>
<tr>
<td>Water Depth</td>
<td>65 – 130 ft</td>
</tr>
<tr>
<td>Distance to shore</td>
<td>14 – 28 miles</td>
</tr>
<tr>
<td>Mean Wind</td>
<td>9 – 9.25 m/s*</td>
</tr>
<tr>
<td>Hs (Mean / Max)</td>
<td>3.6 ft / 29 ft</td>
</tr>
<tr>
<td>Total Potential</td>
<td>1000 – 2000 MW**</td>
</tr>
</tbody>
</table>

* NREL Wind Prospector
** Subject to suitable subsurface conditions

Indicative development scenarios:

- Capacity: Phased - pending offtake
- Wind turbine size: 12+ MW
- First power: around 2024
- Operational lifetime: 25 – 30 years
- Number of interconnection points: 1 – 3 (subject to grid and offtake)
FLiDAR and Metocean Buoy Deployment

Survey Planning & Consultation Underway
Assessment Activity Early 2018
Plan Submission Mid 2018
Buoy Deployment End 2018

Wind Energy Facility Development

Survey Planning & Consultation Underway
Assessment Activity 2018-2020
Federal & State Permits Submission 2020*
Permit Review & Public Hearings 2020-2022*
Construction & Operation 2023-*

Stakeholder Consultation

Permitting 2017-2023*
Construction from 2023*
Operation 25+ years
Decommissioning

* Preliminary – all pending approval timing and general progress
<table>
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<tr>
<th>Environmental</th>
<th>Other users</th>
<th>Siting constraints</th>
</tr>
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<tr>
<td>• Birds &amp; bats</td>
<td>• Commercial fisheries</td>
<td>• Water depth</td>
</tr>
<tr>
<td>• Marine mammals &amp; turtles</td>
<td>• Cultural heritage</td>
<td>• Wind resource</td>
</tr>
<tr>
<td>• Fish &amp; shellfish ecology</td>
<td>• Shipping &amp; Navigation</td>
<td>• Distance from shore</td>
</tr>
<tr>
<td>• Benthic ecology</td>
<td>• Military</td>
<td>• Geology</td>
</tr>
<tr>
<td>• Marine protected areas, protected species</td>
<td>• Recreational use, shipping, fishing, tourism</td>
<td>• Grid connection points</td>
</tr>
<tr>
<td>• Marine physical processes</td>
<td>• Visual</td>
<td>• Wrecks, UXO, archaeology</td>
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<tr>
<td>• Marine sediment &amp; water quality</td>
<td>• Oil &amp; gas, aggregates, mining, renewables</td>
<td>• Cables, pipelines, installations</td>
</tr>
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<td>• Terrestrial ecology</td>
<td>• Aviation</td>
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Other users:
- Commercial fisheries
- Cultural heritage
- Shipping & Navigation
- Military
- Recreational use, shipping, fishing, tourism
- Visual
- Oil & gas, aggregates, mining, renewables
- Aviation

Siting constraints:
- Water depth
- Wind resource
- Distance from shore
- Geology
- Grid connection points
- Wrecks, UXO, archaeology
- Cables, pipelines, installations
Statoil contact persons

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