Navigating in a shifting world
Main Business Segments

Bonheur ASA

- Offshore drilling
  - Fred. Olsen Energy ASA (51.9%)

- Renewable energy
  - Fred. Olsen Renewables AS (100%)

Shipping/Offshore Wind

- Shipping/Offshore Wind
  - Fred. Olsen Ocean Ltd.
    - Fred. Olsen Windcarrier
    - Global Wind Service
    - Universal Foundation
    - Fred. Olsen Marine Services (100%)

Cruise

- Cruise
  - Fred. Olsen Cruise Lines Ltd. (100%)

Other investments

- Other investments
  - NHST Media Group AS (54.0%)
  - Koksa Eiendom AS (12.6%)
  - Various

Ganger Rolf ASA

- Offshore drilling

- Cruise
First renewable activities mid-1990s. Focus on onshore wind

"Cradle to grave":
- Site Investigation
- Development
- Construction
- Operation and Decommissioning

Development pipeline of total 2200 MW secured and under development

Delivered 7 industrial scale windfarms with 504 MW capacity (generation ~1.4 TWh/yr). Largest IPP in UK; 5th largest in Europe

All key disciplines managed in-house

Total investment to date is 6.0 billion NOK

«Spin-offs»: now close to 1500 Fred. Olsen personnel in renewable energy
Operating Assets and Near Term Projects

[Map showing locations such as Rothes I, Rothes II, Paul's Hill, Codling Bank I, Codling Bank II, NE Scotland Forest Lot 4, Crystal Rig I, Crystal Rig II, Crystal Rig III, Windy Standard II, etc.]
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## Offshore wind related activities

### Fred. Olsen Ocean

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Jack-up Installation Vessels</td>
<td>Crew transfer vessels</td>
<td>Technical manpower</td>
<td>WTG foundations</td>
<td>Wind service base</td>
<td>Renewables hub</td>
</tr>
<tr>
<td>2 world-class, custom built offshore wind jack-up installation vessels</td>
<td>8 crew transfer vessels operating in all major offshore wind markets</td>
<td>8 business units: DK, UK, DE, NL, PL, RP TR and SA</td>
<td>The Carbon Trust’s preferred design</td>
<td>New O&amp;M concept</td>
<td>Renewables hub</td>
</tr>
<tr>
<td>WTG installation</td>
<td>Crew and equipment transfer</td>
<td>600+ personnel</td>
<td>Depth range 20-55m</td>
<td>Uses UF technology</td>
<td>Assembly</td>
</tr>
<tr>
<td>Foundation installation</td>
<td>Generator refuelling</td>
<td>300+ projects</td>
<td>3-8MW + WTGs</td>
<td>Increases service window</td>
<td>Logistics</td>
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<tr>
<td>Major Projects</td>
<td>63,000+ transfers</td>
<td>35+ countries</td>
<td>Quick installing</td>
<td>Reduces costs</td>
<td>Foundations</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>On and offshore</td>
<td>On and offshore</td>
<td>Weight saving</td>
<td>Simple installation</td>
<td>Substations</td>
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<tr>
<td>Design &amp; engineering</td>
<td>Installation</td>
<td>Installation</td>
<td>Silent installation</td>
<td>Modular</td>
<td>Sea-fastenings</td>
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<tr>
<td></td>
<td>Service &amp; maintenance</td>
<td>Service &amp; maintenance</td>
<td>No grouting</td>
<td>Completely removable</td>
<td>Grillage</td>
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<tr>
<td></td>
<td>Main component exchange</td>
<td>Main component exchange</td>
<td>Reduced scour</td>
<td></td>
<td>Vessel repair and maintenance</td>
</tr>
</tbody>
</table>

### Energy

- **Jack-up Installation Vessels:** 2 world-class, custom built offshore wind jack-up installation vessels
- **Crew transfer vessels:** 8 crew transfer vessels operating in all major offshore wind markets
- **Technical manpower:** 8 business units: DK, UK, DE, NL, PL, RP TR and SA
- **WTG foundations:** The Carbon Trust’s preferred design, Depth range 20-55m, 3-8MW + WTGs
- **Wind service base:** New O&M concept, Uses UF technology, Increases service window
- **Renewables hub:** Renewables hub, Assembly, Logistics, Foundations, Substations, Sea-fastenings, Grillage, Vessel repair and maintenance
We are located in (current) main markets

Shore-side (office) staff of abt. 90 people with additional 170 vessel crew and 600 technicians out on sites (GWS)
Brave Tern & Bold Tern - primarily turbine installation vessels

- Length: 132m
- Hull Breadth: 39m
- Propulsion: Transit speed of 12 knots, DP2
- Water depth range: 7.5 - 60m
- Crane: 800 tonnes at 24m
- Lifting height stb boom: 102m from main deck
- Lifting height extension: 122m from main deck
- Typical payload: 5300 tonnes

Capabilities:

- Method statements
- Engineering documents
- Mobilisation
- Load out and offshore installation
- Demobilisation
- Project Management
NORGES TI STØRSTE FORNYBAREKSPORTØRER 2014
Det gamle tankrederiet er i dag Norges største eksportør av fornybar-teknologi
— Imponerende utvikling, sier utlånsdirektør.
Project experience – Tern Class vessels

- **Butendiek** (Germany)
  - Siemens SWT-3.60-120

- **Carbon Trust Foundation Trial Installation** (UK)
  - 28 trial installation of suction bucket foundations at Dogger Bank, Hornsey and Dudgeon

- **Global Tech 1** (Germany)
  - Areva M5000-135

- **Belwind test site** (Belgium)
  - Alstom Haliade 150-6MW

- **Riffgat** (Germany)
  - Siemens SWT-3.6-120

- **BARD Offshore 1** (Germany)
  - BARD 5.0

- **Dogger Bank** (UK)
  - 2 x suction bucket foundations for met masts

- **Block Island** (US) – engineering in progress
  - Alstom Haliade 150-6MW

…and various O&M jobs

Recently added:

- **Veja Mate** (Germany)
  - Siemens SWT-6.0-154

- **Wikinger** (Germany)
  - Adwen AD 5-135

Fred. Olsen Windcarrier
Waiting time

- Roughly half of the time in projects are spent on waiting
- Roughly half of the waiting time is waiting on weather
- 25% of the project are spent on waiting for other reasons than weather
## Technical Track Record: O&M of the group

<table>
<thead>
<tr>
<th>Site</th>
<th>Turbine Size (MW)</th>
<th>Scope of work</th>
<th>Jack-up</th>
<th>CTV</th>
<th>Manpower</th>
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<tbody>
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<td>DK (North Sea)</td>
<td>2.0</td>
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<td>✓</td>
<td>✓</td>
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<tr>
<td>GER (Baltic)</td>
<td>2.0 - 3.0</td>
<td>Service</td>
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<tr>
<td>IRE (Irish Sea)</td>
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<td>UK (Irish Sea)</td>
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<td>UK (North Sea)</td>
<td>Met. Mast</td>
<td>Complete removal and reinstallation</td>
<td>✓</td>
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</tbody>
</table>
Idle periods offer excellent and economic opportunities for major component exchange campaigns.
...and now...

- A tic-tac-toe game with Xs and Os in a box.
- A thought bubble with the text "THINK outside the box".
- A sign with the text "Traditional thinking" pointing to "Thinking outside the box".
- A cartoon of two people with a cardboard box labeled "Innovation Department."
Background for Fred. Olsen Windbase

- Offshore wind must increase health and safety
- The offshore wind market must reduce costs
- Focus on minimizing lost income caused by turbine downtime requires higher accessibility of the turbines and more working hours per year per wind farm
- Focus on reduced OPEX requires presence of technicians on site, less time in transit
- HeliPort complement SOVs
- Phased Windbase rollout to meet demand
- Project scope of supply can vary to reduce CAPEX costs

Flexible Solutions – Easy to Install and Removable – Utilizing Well Known Technology
We are «quick» and solution oriented...
... and here again!
Thank you !