Company Presentation, FY2015

Siemens Wind Power and Renewables Division
Siemens Wind Power organization

Wind Power Division
CEO Dr. Markus Tacke

Onshore
CEO Thomas Richterich

Offshore
CEO Michael Hannibal

Supply Chain Management
Marc Becker

Technology
Morten P. Rasmussen

- Quality Management
- Product Integrity
- ...

Onshore wind farms

Offshore wind farms

Service*

*Power Generation Services Wind Power and Renewables

Offshore No. 1

Market position

Business Fields

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The Siemens Wind Power product platforms

<table>
<thead>
<tr>
<th>Platforms</th>
<th>Products</th>
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<tbody>
<tr>
<td>Siemens D3</td>
<td>SWT-2.3-108 SWT-3.0-108 SWT-3.2-108 SWT-3.0-113 SWT-3.2-113 SWT-3.3-130</td>
</tr>
<tr>
<td>Siemens G4</td>
<td>SWT-2.3-120 SWT-3.0-113 SWT-3.2-113 SWT-3.3-130</td>
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Performance Features: power boost functionality, High Wind Ride Through, Inertia Response, De-icing, and more.
Market growth for wind energy (installed capacity in MW) is estimated at 2% a year (2012 - 2018)*:

- Onshore (2012 - 2018): 0.7% p.a.

Market position:
- No. 1 in offshore market
- No. 4 in global installations (2013)
One of the world’s leading suppliers of wind power solutions

Acquired Danish wind turbine manufacturer Bonus Energy A/S in 2004

Installed Base: > 15,300 turbines with ~ 28,000 MW capacity

Installed in CY 2014: > 1.930 turbines with ~ 5 GW capacity

~12,200 employees globally incl. Wind Service

Revenue in FY 2014: € 5,5 billion
Wind Power is an international business –
Our regional set-up secures customer intimacy

Production
Headquarters
Countries with
installed and future projects

USA
Canada
Denmark
Germany
China
**Siemens Wind Power Offshore**  
**Facts at a glance**  

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
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<tr>
<td>Pioneered the offshore market and current market leader</td>
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<tr>
<td>More than 24 years of experience</td>
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<td>Sold more than 3100 WTGs</td>
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<tr>
<td>Installed base: &gt; 1,470 turbines with &gt; 4.7GW capacity</td>
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<td>A robust design with innovative solutions</td>
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<td>Unsurpassed reliability and performance:</td>
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<tr>
<td>A proven 20+ year product lifetime and 95% real availability</td>
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Project Capacity
From 5 MW to 630 MW in 22 years

1991
Vindeby
World's 1st offshore wind power plant

2000
Middelgrunden
World's 1st offshore wind power plant w/MW turbines

2003
Nysted
World's largest offshore wind power plant in operation

2011
Rudong Intertidal
World's largest wind power market entered in China

2012
Greater Gabbard
World's largest offshore wind power plant in operation

2013
London Array
World's largest offshore wind power plant in operation

Our performance
- Leading market share and number one in offshore
- Industrialized offshore wind power (from 5 MW to 630 MW wind power plants)
- Market entry into the Asia Pacific region

1) Megawatts commissioned, EWEA, June 2013
Technology Development of Siemens Wind Power
From 30 kw to 7 MW in 30 years

11 meter 35 meter 154 meter
79.8 meter
30 kW
450 kW

SWT-7.0-154
SWT-6.0-120 at Høvsøre, Denmark, May 2011
When new technology requires new processes
Development of offshore wind farms:
Larger, deeper and further from shore

Offshore wind projects, yearly installed capacity*

*Projects bundled by year, estimated up to 2019

Water depth (m)
- < 15m
- ~ 20m
- ~ 30m
- > 35m
Direct drive; reduced complexity for increased reliability

- Single bearing design for the G2 and DD platforms (shown)
SWT-6.0-154; reduced complexity for increased reliability

Robust and reliable technology

- **Direct drive generator**
  - Permanent magnets; no gearbox
  - Increased efficiency; minimum losses
  - Simplified design reduces complexity

- **Scaling and re-use of in-house design**
  - E.g. SICS and IntegralBlade
  - Redundancy in critical components
Patented IntegralBlade® manufacturing; blade robustness through reduced complexity

In-house design

- **IntegralBlade technology**
  - One-shot process eliminating the need for glued joints
  - Process based on vacuum-assisted resin transfer molding
  - No gel coating as part of the manufacturing process allows for improved quality inspection
From 6 to 7 MW; most components will be re-used

Minimal upgrade

- Segments and magnets
- Converter
- Transformer

Re-use of components and supply-chain

- B75 IntegralBlade
- Nacelle
- Mechanical structure
- Tower / foundation