NORTH AMERICAN MARKET CONTINUES TO BE ATTRACTIVE

Chris Brown
President, Vestas North America

Copenhagen, 29 November 2018
Vestas WTG Sales
North American Order Intake (MW)

- 1996 -- SVP (Singapore Power)
- 2005 -- EVP (Detroit Edison Energy)
- 2008 -- Founder (Deepwater Wind)
- 2011 -- COO (City of Detroit)
- 2012 -- GSVP (Vestas)

CHRIS BROWN
Vestas, North America
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North American Market

Vestas North America

Summary and Q&A
PTC GLIDEPATH CARRIES US MARKET THROUGH 2023

US Industry has 5+ years of policy certainty

North American Installations (MW)

<table>
<thead>
<tr>
<th>Year</th>
<th>PTC Value</th>
<th>100%</th>
<th>100%</th>
<th>80%</th>
<th>60%</th>
<th>40%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
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<td>2019</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>2020</td>
<td>14,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2021</td>
<td>12,000</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>2022</td>
<td>10,000</td>
<td></td>
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<tr>
<td>2023</td>
<td>8,000</td>
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</tbody>
</table>

Source: MAKE and Vestas

Key highlights

• Organic demand for renewable energy continues to grow … 43% of Fortune 500 companies have RE goals, 9 states strengthening RE goals

• 11 GW of 2021 installations enabled by 80% PTC components. 80% and 60% levelized economics equivalent to today

• Largest US utilities (MidAmerican, PacifiCorp, AEP, Xcel) leading the industry
RPS DEMAND EXPECTED TO REMAIN IN 2021

States continuing with renewable targets despite lack of federal support

REGULATION & POLICY
California Assembly Passes Historic 100% Carbon-Free Electricity Bill
The world's fifth-largest economy will have to eliminate carbon emissions from electricity by 2045.

JULIAN DRECTOR
AUGUST 26, 2018

2021 Projected RPS Gaps

2021 Compliance Gap with proposed expansions

2021 Compliance Gap
ORGANIC GROWTH OF RENEWABLES CONTINUES

Despite headwinds, renewable energy remains in demand
PPA PRICES IN USA

1. PPA prices have fallen 76% since 2009
2. Product dimensions double in 3 years:
   - 2017: V110 @ 2MW, 9,498m of swept area
   - 2020 V150 @ 4.2MW, 17,663m of swept area
3. Asset class maturity attracting institutional capital, driving down Cost of Capital
4. Project durations growing to 30+ years

Key highlights

*Source: S&P Global Market Intelligence
**Source: Wind PPA US DOE
***Source: Solar PPA REN"
NORTH AMERICAN WIND INDUSTRY FULLY MATURE

Wind infrastructure is built and here to stay

**Cumulative North American installations (MW)**

Source: AWEA

**Key highlights**

1. **NORTH AMERICA TO BREAK 100 GW IN 2018**: Supply chain, transportation, and service infrastructure fully mature

2. **SUPPLY CHAIN ACROSS ALL 50 STATES**: Wind bipartisan political support stems from >500 manufacturing facilities and 100,000+ jobs across the country

3. **WIND POWERS AMERICA**: Wind energy now delivers over 30% of the electricity produced in four states: Iowa, Kansas, Oklahoma, and South Dakota.

4. **WIND FOR FUEL**: Utilities across the country are retiring coal plants and replacing with new wind generation

5. **GROWTH OF REPOWERING**: 2.1 GW of projects repowered in 2017
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VESTAS TAKES TOP SPOT IN US INDUSTRY

Commercial success a function of best products, best team

### Key methods to gaining market share

1. **Making Markets**: Introducing utility customers to the value of wind ownership and educating them on how to be successful

2. **Best Products**: 2MW and 3/4MW offerings

3. **Efficient Manufacturing**: Strategically located manufacturing plants for transport optimization

4. **Best Team**: Relentless focus on customer intimacy and value engineering to drive loyalty in the market

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Source: AWEA
VESTAS IS THE LARGEST OPERATOR IN NORTH AMERICA

Scale and technology enable Vestas to have the lowest operating costs

Source: MAKE
VESTAS TRANSITIONING FROM TURBINE SUPPLIER TO SOLUTIONS PROVIDER

Bringing the widest breadth and depth of solutions to serve the industry

<table>
<thead>
<tr>
<th>Year</th>
<th>Equipment Supply</th>
<th>Construction</th>
<th>Service</th>
<th>Repower</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>V100</td>
<td>Logistics &amp; Commissioning</td>
<td>Full Suite of Service Offerings</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>V110, V136</td>
<td>Logistics &amp; Commissioning</td>
<td>Full Suite of Service Offerings</td>
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<tr>
<td>2016</td>
<td>V116, V136</td>
<td>Logistics &amp; Commissioning</td>
<td>Full Suite of Service Offerings Multibrand</td>
<td></td>
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<tr>
<td>2017</td>
<td>V120, V136, V150</td>
<td>EPC</td>
<td>Full Suite of Service Offerings Multibrand</td>
<td>Clipper 2.5, V80</td>
</tr>
<tr>
<td>2018</td>
<td>V120, V136, V150, Hybrid Systems</td>
<td>EPC</td>
<td>Full Suite Multibrand Variable Pricing</td>
<td>Clipper 2.5, V80, MM92 + more to come</td>
</tr>
</tbody>
</table>
PROJECT DEVELOPMENT

Entering earlier in the value stream brings value to our customers and to Vestas.

**Optimize Technology**

Entering the process earlier allows Vestas to tailor the technical solution and increase the impact of value engineering.

**Value Creation**

By increasing influence on the levers that drive project returns, Vestas is in a stronger position to reduce price pressure in the market.

**Development**

Ownership of development assets allows Vestas to bring more projects or qualification options to customers.
VESTAS MODULAR 2 MW PLATFORM CREATES UNIQUE OPPORTUNITY

With 90, 100, 110, 116, and 120m rotors, Vestas has maximum product flexibility

BP Clipper Prototype Adapter Installation - Flat Ridge, Kansas

Repower Platforms (2005-2011 Vintage)
TARIFFS

Strong footprint in the USA and a global setup provides flexibility

Key highlights

1. US projects use US products: supply for projects in the USA already source nearly 60% of their needs from US factories

2. World’s largest tower factory is in the USA. Pueblo sources 100% of their steel from US companies already
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SUMMARY

1. USA remains strong market both short and long-term

2. Vestas remains a market leader in the USA with tailored product line, efficient manufacturing, and productive customer relationships

3. Expanded offerings add value
Q&A
THANK YOU FOR YOUR ATTENTION
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Forward-looking statements include, among other things, statements concerning Vestas’ potential exposure to market risks and statements expressing management’s expectations, beliefs, estimates, forecasts, projections and assumptions. A number of factors that affect Vestas’ future operations and could cause Vestas’ results to differ materially from those expressed in the forward-looking statements included in this document, include (without limitation): (a) changes in demand for Vestas’ products; (b) currency and interest rate fluctuations; (c) loss of market share and industry competition; (d) environmental and physical risks, including adverse weather conditions; (e) legislative, fiscal, and regulatory developments, including changes in tax or accounting policies; (f) economic and financial market conditions in various countries and regions; (g) political risks, including the risks of expropriation and renegotiation of the terms of contracts with governmental entities, and delays or advancements in the approval of projects; (h) ability to enforce patents; (i) product development risks; (j) cost of commodities; (k) customer credit risks; (l) supply of components; and (m) customer created delays affecting product installation, grid connections and other revenue-recognition factors.

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