



MHI Vestas Offshore Wind

Order status as per 31 December 2015

1,176 MW

Firm orders:

- A total of 1,176 MW of firm orders since the formation in April 2014.

450 MW

Conditional order:

- Current conditional agreement for the Borkum Riffgrund II project with a total capacity of 450 MW.

400 MW

Preferred supplier agreement:

- Appointed preferred supplier for the 400 MW Horns Rev 3 offshore project in Denmark.

Market increasingly maturing

The offshore market is experiencing increased commercial interest, and compared to past years, this interest seems to be based on more sound assessments of the potential for the market. As the offshore business matures and technology improves, various players now start to turn to offshore as a realistic solution for deploying large-scale wind power plants in situations where onshore solutions are less viable.

Observers of the global offshore industry expect it to grow by approx 10 to 20 percent per year over the medium term,¹⁾ however, coming from a small base of approx 12 GW of accumulated installations in 2015.²⁾

The Northern European markets remain the most mature offshore markets with UK and Germany expected to be the largest. Installations are, however, also expected in countries such as Holland, France, Belgium, Sweden, and Denmark in coming years.

Increasingly, forecasters are also expecting the Chinese market to see significant growth, driven by separate regulation aimed at increasing offshore installation to cater for the continued demand for clean energy in China.

Order activity at satisfying levels

2015 was the first full year of operation for Vestas' joint venture MHI Vestas Offshore Wind and the year proved to be busy on all fronts.

During the year, the joint venture announced three firm and unconditional orders for the Rampion project in the UK (400 MW), the Nobelwind project in Belgium (165 MW), and the Walney Extension project in the UK (330 MW). Furthermore, the joint venture announced that it had entered into a conditional agreement for the Borkum Riffgrund II project in Germany (450 MW). Finally, the joint venture also announced that it had been appointed preferred supplier for the Horns Reef 3 project in Denmark (400 MW).

Based on these levels of order activity, the joint venture finds itself well positioned as one of the strongest players in the offshore market. MHI Vestas Offshore Wind has been a very active participant in the market, and has generally had a presence in most tenders taking place since its formation.

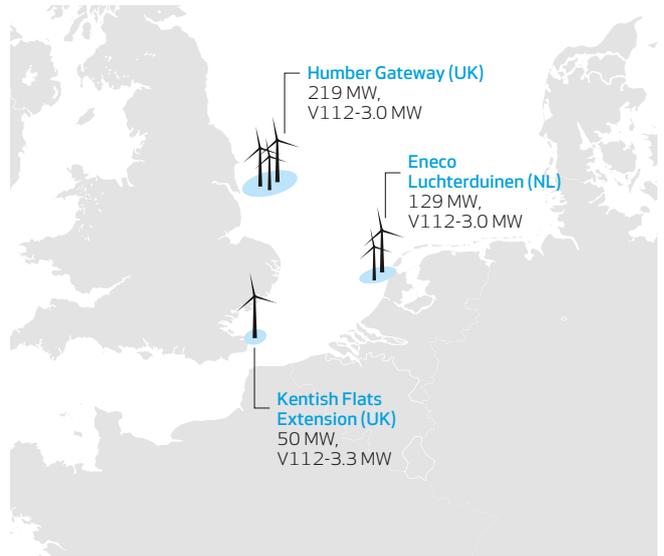
V164 prototype performing well

The development of the V164-8.0 MW[®] turbine is well on schedule and the prototype wind turbine has been seen to display excellent performance.

2015 commenced well when the V164 turbine was named the best offshore machine in the WindPower Monthly Turbines of the year competition for 2014, with the magazine citing that the V164 "combines a clever mix of state-of-the-art and innovative solutions in a largely evolutionary design and scaling process".³⁾ Later in the year, in March, MHI Vestas Offshore Wind was granted type certification for the V164 from leading classification group DNV GL.

MHI Vestas Offshore Wind also installed two additional onshore V164-8.0 MW[®] wind turbines in Denmark, as part of the Måde project close to the port of Esbjerg. In addition to verifying the technical performance of the wind turbine, the Måde project provided valuable testing of its installation and service techniques before taking the wind turbine offshore.

Deliveries of 3 MW offshore projects in 2015



Operational performance according to plan

As part of the formation of the joint venture, MHI initially injected EUR 100m into the joint venture at its formation, with an additional EUR 200m to be injected as milestone payments based on certain commercial and technical achievements. In the latter half of 2015, all of these milestone payments had been received by the joint venture, a testament to the satisfying operating performance of the joint venture throughout the period.

During the year, MHI Vestas Offshore Wind completed delivery of the 216 MW Humber Gateway and 50 MW Kentish Flats projects, both located in the UK, and the 129 MW Eneco Luchterduinen project located in the Netherlands.

As planned, the joint venture initiated ramp-up of production of the V164 turbine in anticipation of delivery of the 258 MW Burbo Bank Extension project in the UK in 2016. MHI Vestas Offshore Wind has recruited and is training over 200 employees at the blade manufacturing facility on the Isle of Wight, off the southern coast of the UK. The facility is the former Vestas blade prototyping facility and it will be leased by the joint venture. Furthermore, the joint venture also started the ramping up process at a leased nacelle assembly facility at Lindø, Denmark. The production ramp-up is generally progressing according to plan with serial production having started in 2015.

1) Sources: Bloomberg New Energy Finance (BNEF): Q4 2015 Global Wind Market Outlook. November 2015; MAKE: Global Offshore Wind Power Market. December 2015.

2) Based on 11 GW of total installed offshore capacity in Europe by end 2014 (Source: The European Wind Energy Association (EWEA): Offshore statistics 2014 report. January 2015) and an estimated 700 MW of added capacity in China in 2015 (Source: Bloomberg New Energy Finance (BNEF): H1 2015 Offshore Wind Market Outlook. May 2015).

3) WindPower Monthly: Turbines of the year - Offshore turbines. 31 December 2014..