



# The European offshore wind industry key trends and statistics 2010

January 2011

A report by the European Wind Energy Association

# Executive summary

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## 2010 offshore wind power market

- 308 new offshore wind turbines, worth some €2.6 billion, were fully grid connected between 1 January and 31 December 2010, totalling 883 MW – a 51% increase on the previous year;
- Eight wind farms were fully completed and grid connected, one wind farm was partially grid connected, and one wind farm was completed but not grid connected;
- Offshore work began on a further four projects and preparatory onshore work on four new projects.

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## Cumulative offshore wind power market

- 1,136 turbines installed and grid connected, totalling 2,946 MW in 45 wind farms in nine European countries. The offshore wind capacity installed by the end of 2010 will in a normal year produce 11.5 TWh of electricity;
- Average wind turbine size is now 3.2 MW;
- 65% of substructures are monopiles, 25% are gravity and 8% are jacket.

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## Market outlook: 2011 and beyond

- EWEA forecasts that between 1,000 and 1,500 MW of new offshore wind capacity will be fully grid connected in Europe during 2011;
- 10 wind farms, totalling 3,000 MW, are currently under construction. When completed, Europe's installed offshore capacity will increase to 6,200 MW;
- 19,000 MW are currently fully consented.

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## Trends: turbines, foundations, water depth and distance to shore

- The average offshore wind farm size in 2010 was 155.3 MW, up from 72.1 MW the previous year;
  - Average water depth in 2010 was 17.4m, a 5.2m increase on 2009, with projects under construction in water depth averaging 25.5m;
  - Average distance to shore increased in 2010 by 12.7 km to 27.1 km, substantially less, however, than the 35.7 km average for projects currently under construction.
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## Financing highlights and developments

- 2010 saw two major deals come to financial close: Thornton Bank C-Power (325 MW) and Trianel Wind Farm Borkum West II (200 MW). Both projects use turbines of 5 MW or more, signalling that financing institutions are willing to invest in the large turbines likely to dominate the sector in the coming years;
- A positive 2010 trend has been the arrival of new financial investors - pension funds - into the sector, with two notable transactions in the second half of the year;
- 2010 saw a flow of investment announcements from utilities which have continued to increase their balance sheet commitments to the sector;
- National and international finance institutions such as the European Investment Bank (EIB) and export credit agencies have been critical for the development of the sector during a critical juncture. They are likely to remain active in the sector in the near future, providing critical liquidity at a low cost, and will help ensure that a smooth transition can be engineered towards a more mature market when commercial banks are able to do large transactions without them.

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## Industry highlights and developments

- During 2010, 29 new offshore turbine models were announced by 21 manufacturers: 44 new turbine models have been announced by 33 manufacturers over the last two years;
- European manufacturers are developing 6 and 7 MW prototypes, including dedicated offshore concepts, whilst foreign companies are mainly developing 5 MW turbines.

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## Offshore grid developments

- The signing of the memorandum of understanding by the North Seas Countries' Offshore Grid Initiative, and the European Commission's Communication "Energy infrastructure priorities for 2020 and beyond - A Blueprint for an integrated European energy network" put a future offshore grid at the centre of EU energy policy;
- Significant steps were taken in 2010 on planning, financing and constructing specific offshore cables – in particular NorGer, CobraCable, East-West interconnector, BritNed, NorNed 2, UK/Norway, Kriegers Flak, and NordBalt.

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