



**EWEA**

THE EUROPEAN WIND ENERGY ASSOCIATION



# The European offshore wind industry – Key trends and statistics: 1st half 2010

## Executive summary:

In the first six months of 2010, 118 offshore wind turbines were fully grid connected totalling 333 MW. Overall 16 offshore wind farms totalling 3,972 MW were under construction. The following work was carried out on those wind farms in the first six months of 2010:

- 118 turbines were fully grid connected<sup>1</sup> totalling 333 MW in six farms: Rødsand and Poseidon in Denmark, Alpha Ventus in Germany, Gunfleet Sands, Robin Rigg and Thanet in the UK;
- 263 turbines were installed (151 of which are awaiting grid connection totalling 440 MW) in seven farms: Belwind in Belgium, Rødsand and Poseidon in Denmark, BARD Offshore I in Germany, Greater Gabbard, Gunfleet Sands and Thanet in the UK;
- 163 foundations were installed in nine farms: Belwind in Belgium, Rødsand and Poseidon in Denmark, Baltic I and BARD Offshore I in Germany, Greater Gabbard, Sheringham Shoal, Thanet and Walney I in the UK;
- Four offshore wind farms became fully operational: Poseidon in Denmark, Alpha Ventus in Germany, Gunfleet Sands and Robin Rigg in the UK;
- Preliminary work was carried out on a further four offshore wind farms: Global Tech 1 and Nordergründe in Germany, Ormonde and the London Array in the UK. No foundations or turbines were installed during H1 2010 at these farms.

This takes the total installed offshore wind power capacity to 2,396 MW as of 30 June 2010.

FIGURE 1 SUMMARY OF WORK AT OFFSHORE WIND FARMS BETWEEN 1 JANUARY AND 30 JUNE 2010

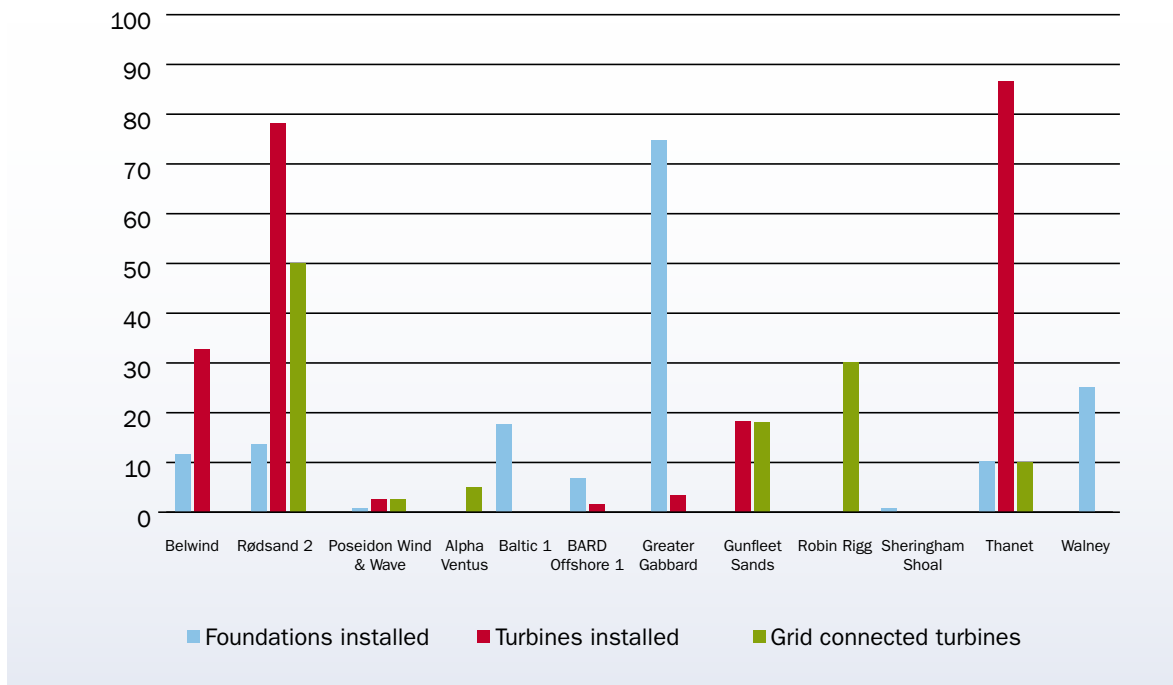
	Belgium	Denmark	Germany	United Kingdom	Total
N° of farms	1	2	5	8	16
N° of foundations installed	12	15	24	112	163
N° of wind turbines installed	33 (99 MW)	81 (179 MW)	2 (10 MW)	147 (455 MW)	263 (743 MW)
MW fully connected to grid	0	115	30	188	333
Total MW of projects (once completed)	330 MW	207 MW	998 MW	2,437	3,972 MW

## Contributors

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<sup>1</sup> This analysis includes all wind turbines fully grid connected during H1 2010, including turbines that had been installed, but not fully grid connected, during 2009 such as at Alpha Ventus (Germany), Robin Rigg (UK) and Gunfleet Sands (UK).

Figure 2 Installation and grid connection of wind turbines in offshore wind farms in 1st half 2010

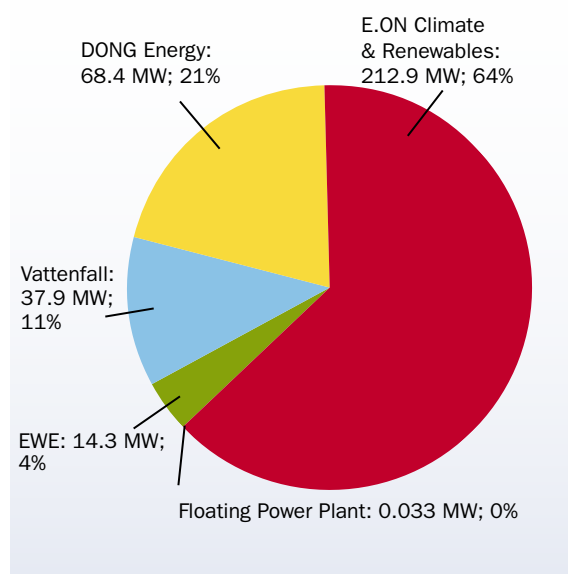


## Developers

Nine of the offshore wind farms under construction are being developed by consortia or several companies, the other seven by a single developer. Excluding the demonstrator Poseidon, all offshore capacity connected to the grid in the first half of 2010 (see figure 3) was developed by utilities.

In figure 3, where a wind farm is being developed by a consortium or several companies, the amount of grid connected capacity has been divided according to each company's share in the project.

FIGURE 3 DEVELOPERS' SHARE OF OFFSHORE WIND CAPACITY GRID CONNECTED BETWEEN 1 JANUARY AND 30 JUNE 2010.



## Wind turbine manufacturers

Four manufacturers had offshore turbines connected to the grid during the first six months of 2010. Siemens represents the majority (55%) of the grid connected capacity, followed by Vestas (36%) and REpower (9%).

Three GAIA 0.011 MW wind turbines are being used on the Poseidon demonstrator. However, these turbines do not represent a significant proportion of the grid connected capacity (see figure 4).

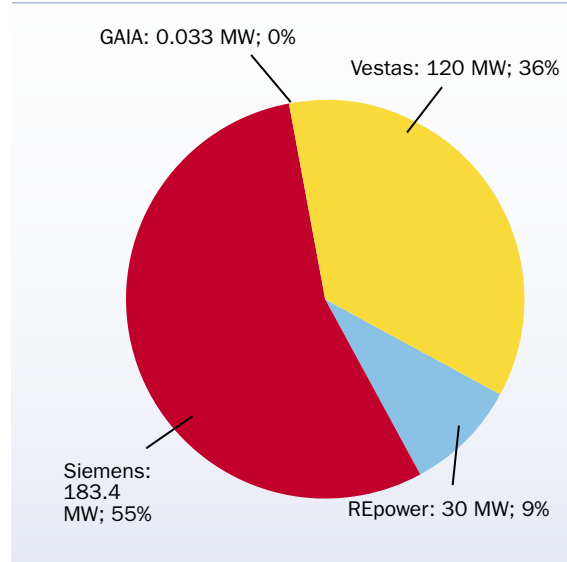
## Financing highlights and developments in H1 2010, and outlook for 2011

Financing offshore wind farms on a non recourse basis has proved challenging in the first half of 2010 due to the financial crisis. This has had a very different impact on the two sectors active in developing offshore wind farms – utilities and independent project developers. The projects developed by the utilities have been less affected by the financial crisis thanks to their continued ability to fund investments from their balance sheets, and recent announcements of investment decisions for projects such as Gwynt y Môr (576 MW in the UK), Baltic 2 (288 MW in Germany) and Anholt (400 MW in Denmark) confirm this continuing trend. Conversely, independent developers have been, and continue to be, severely affected by the financial crisis and the consequent lack of availability of project finance. This is because:

- retrenching banks have taken a more conservative approach to lending. The lack of precedent for the offshore wind industry is curtailing the banks' appetite for the sector; and
- the reluctance of banks to commit to any significant underwriting of loans leads to difficulty in financing the deals necessary for large offshore wind farms.

The result is that market capacity remains severely constrained by a lack of committed banks and lack of

FIGURE 4 WT MANUFACTURERS' SHARE OF OFFSHORE WIND CAPACITY GRID CONNECTED BETWEEN 1 JANUARY AND 30 JUNE 2010.



existing deals, even when taking into account development banks.

Positive financial trends, which started in the second half of 2009 with the Belwind and Boreas financing agreements, have continued in early 2010, with a number of transactions progressing in various markets, although none have closed so far this year. Projects expected to raise non-recourse debt in the coming months include the second phase of C-Power (300 MW in Belgium), the Masdar portion of London Array (20% of 630 MW in the UK), Lincs (270 MW in the UK), Borkum West (200 MW in Germany), Meerwind (288 MW in Germany) and Gode Wind 2 (240 MW in Germany).

The European Investment Bank is playing a crucial role through its involvement in several of the above transactions, and through separate funding facilities on a corporate basis to utility-led projects. It recently provided a €300 million loan to DONG for the London Array project. It was joined in that last transaction by EKF, the Danish export credit agency, which is also providing critical support to projects whose financing is currently under negotiation. Continued support from such public institutions is deemed crucial for the non recourse market to take off given the volumes of funding required in aggregate and on each individual transaction.