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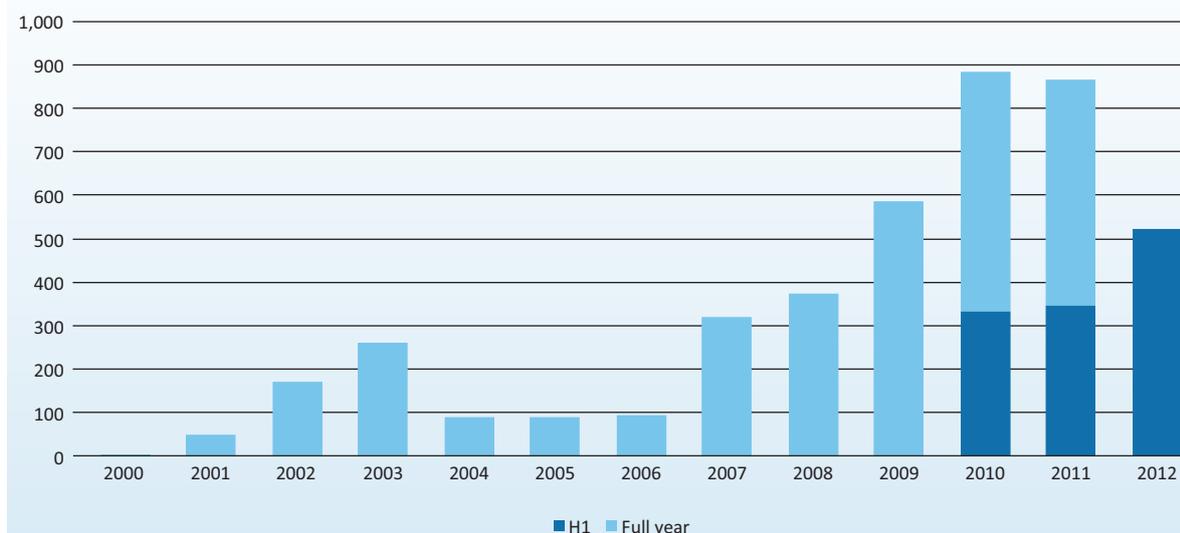
THE EUROPEAN WIND ENERGY ASSOCIATION



# The European offshore wind industry - key trends and statistics 1st half 2012

In the first six months of 2012, Europe installed and fully grid connected 132 offshore wind turbines, with a combined capacity totalling 523.2 MW. Overall, 13 wind farms were under construction. Once completed these wind farms will account for 3,762 MW.

FIGURE 1: ANNUAL INSTALLED OFFSHORE WIND CAPACITY IN EUROPE (MW)



The work carried out on these wind farms during the first six months of 2012 is detailed below

- **132 wind turbines were fully grid connected, totalling 523.2 MW (up 175 MW or 50% from the same period last year) in eight wind farms:** Thornton Bank 2 (BE), Greater Gabbard, Walney 2, Ormonde, London Array, Sheringham Shoal (UK), Avedore 2 (DK), BARD Offshore 1 (DE). A further 160 turbines, totalling 647.4 MW, are installed but awaiting grid connection.
- **270 foundations (141 or 109% more than the same period last year) were installed in 10 wind farms:** Thornton Bank 2 (BE), Lincs, London Array, Sheringham Shoal, Gwynt y Môr, Teeside (UK), Anholt, Avedore 2 (DK), BARD Offshore 1 and Riffgat (DE).

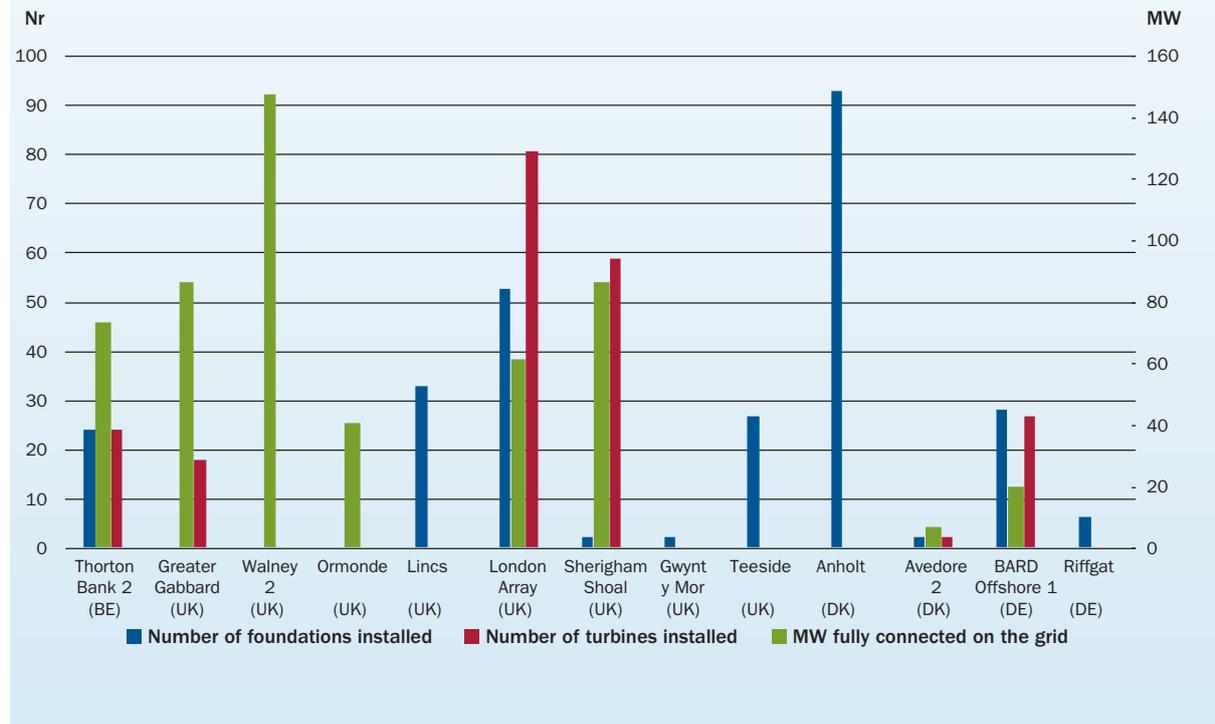
- **211 turbines (103 or 95% more than the same period last year) were erected in five wind farms:** Thornton Bank 2 (BE), Greater Gabbard, London Array, Sheringham Shoal (UK), Avedore (DK), BARD Offshore 1 (DE).
- **Preparatory work has begun in the following wind farms:** Rampion, West of Duddon Sands (UK), Nordsee ost, Global Tech 1, Meerwind, Borkum West II and Innogy Nordsee 1 (DE).

1,503 offshore wind turbines are fully grid connected in 56 wind farms across 10 countries, with a total capacity of 4,336 MW, as of 30 June 2012.

FIGURE 2: SUMMARY OF WORK AT OFFSHORE WIND FARMS BETWEEN 1<sup>ST</sup> JANUARY 2012 AND 30<sup>TH</sup> JUNE 2012

	BELGIUM	UK	GERMANY	DENMARK	TOTAL
Number of farms	1	8	2	2	13
Number of foundations installed	24	117	34	95	270
Number of turbines installed	24	158	27	2	211
Number of turbines connected	12	114	4	2	132
MW fully connected to the grid	73.8	422.0	20.0	7.2	523.2
Total MW of projects (once completed)	148	2,695	508	411	3,762

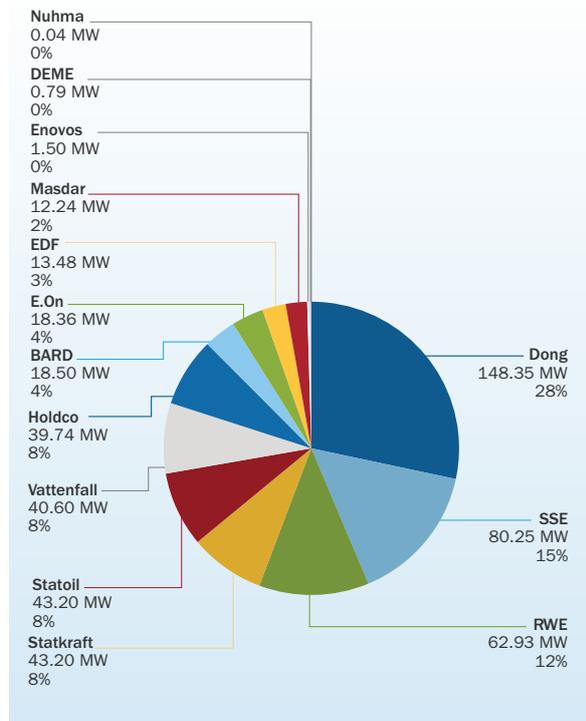
FIGURE 3: INSTALLATION AND GRID CONNECTION OF WIND TURBINES IN OFFSHORE WIND FARMS BETWEEN 1<sup>ST</sup> OF JANUARY 2012 AND 30<sup>TH</sup> OF JUNE 2012



## Developers

During the first six months of 2012 work was carried out on 13 wind farms. Eight of them had turbines connected to the grid, totalling 523.2MW. The majority of these wind farms (six of the eight, totalling 475.4 MW) are developed by consortia. Figure 4 shows the share of connected MW per developer from 1 January 2012 to 30 June 2012 taking into account each company's share in the projects<sup>1</sup>. Utilities account for over 78% of the installed capacity (408.7 MW).

FIGURE 4: OFFSHORE WIND DEVELOPERS' SHARE OF GRID CONNECTED CAPACITY FROM 1<sup>ST</sup> JANUARY TO 30<sup>TH</sup> JUNE 2012

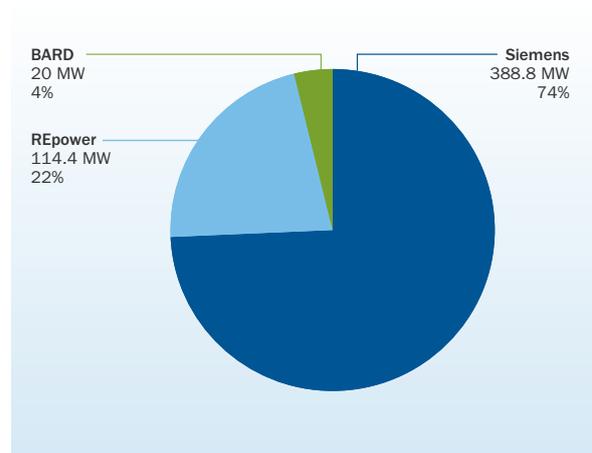


## Wind turbines

During the first six months of 2012, the average size of wind turbines installed and connected to the grid reached 4 MW. The average size has increased by 14.2% compared to the same period last year. 30% more wind turbines were grid connected during the first six months of 2012 than during the same period the previous year; 132 units compared to 101.

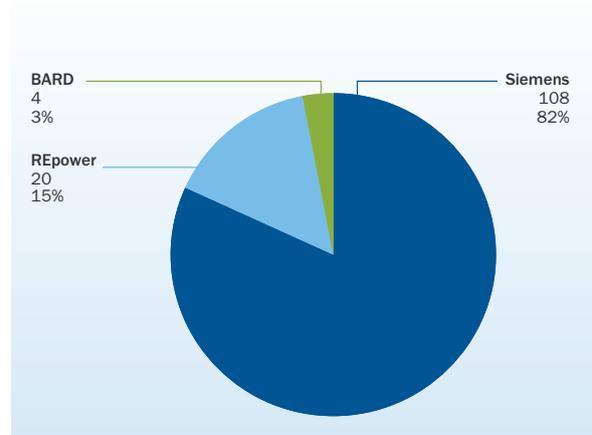
Units from three turbine manufacturers were connected to the grid over the period: Siemens, REpower and BARD. The former dominates the ranking with 74% of the installed capacity, followed by REpower (22%) and BARD (4%).

FIGURE 5: WIND TURBINE MANUFACTURERS' SHARE OF GRID CONNECTED CAPACITY (IN MW) IN EUROPE FROM 1<sup>ST</sup> JANUARY 2012 TO 30<sup>TH</sup> JUNE 2012



In terms of units, Siemens installed 108 (82%), REpower 20 units (15%) and BARD 4 units (3%). As the installed Siemens machines have lower rated capacity to REpower's and BARD's (3.6 MW compared to 6.15 MW and 5 MW), Siemens has a higher share of installed units than installed capacity.

FIGURE 6: WIND TURBINE MANUFACTURERS' SHARE OF GRID CONNECTED TURBINES IN EUROPE FROM 1<sup>ST</sup> JANUARY 2012 TO 30<sup>TH</sup> JUNE 2012



<sup>1</sup> C-Power is a consortium of Belgian and international shareholders: (Holdco- 53.85%, RWE - 26.73%, Thornton Bank (EDF and Smart Grids) - 18.26%, DEME - 1.07%, Nuhma - 0.06%) <http://www.c-power.be/shareholders>.

## Financing highlights and developments in H1 2012 and 2013 outlook

Financing activity in the offshore wind energy sector remained solid in the first half of 2012 despite the general challenges of the European banking sector, with several landmark transactions closing this spring.

Non-recourse financing was closed for the Gunfleet Sands (172 MW, UK), Lincs (270 MW, UK) and Northwind (216 MW, BE) projects, for a total lending volume of approximately €1.3 billion. Crucially, each deal set new precedents for the industry:

- the first financing of a minority stake (Gunfleet Sands);
- the first participation of export credit agencies NEXI of Japan (Gunfleet Sands), ONDD of Belgium (Northwind), and GIEK of Norway (Northwind);
- first non-recourse financing including construction risk in the UK (Lincs).

Altogether, as many transactions were closed in the past six months as were closed during the whole of 2011. Moreover, an ever-wider variety of financing structures is emerging. In addition, several trends with respect to the latter transactions and the market as a whole can be highlighted.

- 1) the number of financial institutions willing finance offshore wind farms continues to grow, both amongst commercial banks and amongst public financing institutions (such as the EIB and export credit agencies), broadening funding sources and opening the door to increasingly different funding structures. For Lincs, for instance, the transaction was closed without any participation from a multilateral finance institution, whereas Northwind brought in four different ones.

- 2) Transactions keep taking place under varied regulatory frameworks (with the UK dominating the reporting period after Germany dominated last year) and with different technologies (Northwind was the first non-recourse financing for Vestas' new V112 offshore turbine).

The pipeline of future deals continues to be strong, with further transactions standing a good chance of closing before the end of the year (Walney in the UK, Butendiek in Germany) and others in 2013 (Gode Wind and Nordergrunde in Germany).

As noted in previous years, non-recourse lending is becoming a large contributor to offshore wind investment volumes, with more than 30% of overall funding now coming in the form of debt.

On the equity side, in the first half of 2012, two major transactions were announced: the purchase by EDF of a 50% interest in ENECO's Isle of Wight Round 3 project in the UK, and the acquisition by the Hochtief/Ventizz joint venture of the development rights to four Enova offshore wind farms in Germany. This followed an unusually busy period late in 2011. Several sales processes are under way with announcements likely before the end of the year.

## Contributors

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