



**EWEA**

THE EUROPEAN WIND ENERGY ASSOCIATION



# The European offshore wind industry – Key trends and statistics: 1<sup>st</sup> half 2011

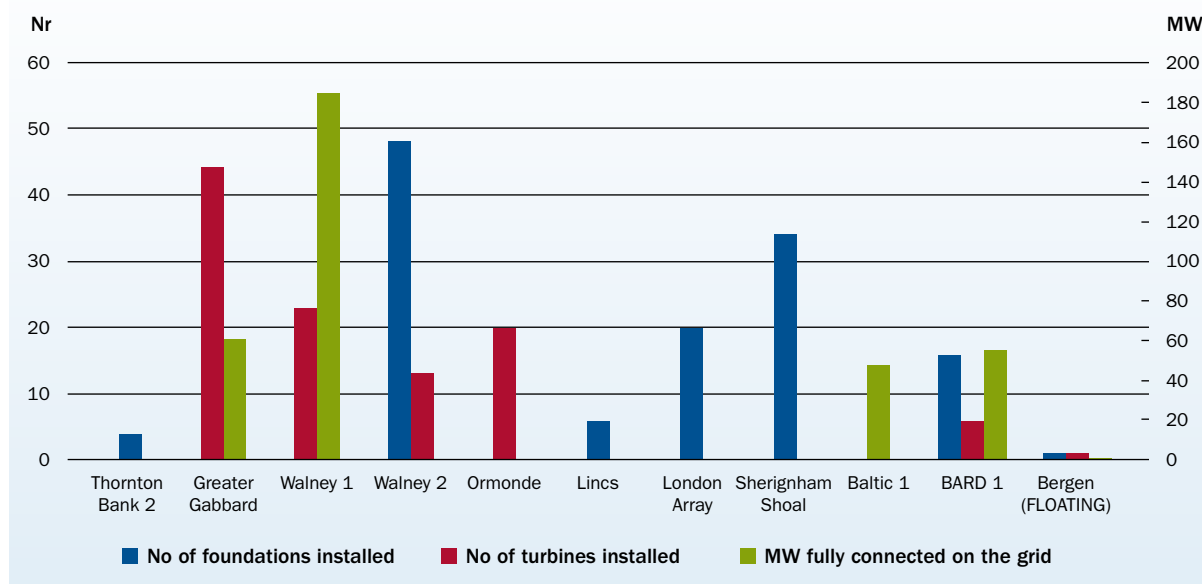
In the first six months of 2011, 101 offshore wind turbines totalling 348.1 MW were fully grid connected. Overall 11 offshore wind farms were under construction. Once completed, they will represent a total installed capacity of 2,844 MW. In Europe, as of 30 June 2011, there are 1,247 offshore wind turbines fully grid connected with a total capacity of 3,294 MW in 49 wind farms spread over 9 countries. The work carried out on these wind farms during the first six months of 2011 is presented below:

- **101 turbines were fully connected to the grid totalling 348.1 MW (up 4.5% compared to the same period last year) in 5 offshore wind farms:** Greater Gabbard and Walney 1 in the UK, Baltic 1 and BARD Offshore 1 in Germany as well as a (4th) prototype floating turbine in Bergen, Norway.
- **129 foundations were installed in 7 offshore wind farms:** Thornton Bank 2 in Belgium, Walney 2, Lincs, London Array and Sheringham Shoal in the UK, BARD 1 in Germany and the prototype floating in Norway.
- **108 turbines were installed in 6 farms:** Greater Gabbard, Walney 1, Walney 2 and Ormonde in the UK, and BARD 1 in Germany as well as a prototype floating turbine in Bergen, Norway.
- **Preliminary work was carried out in the following offshore wind farms:** Gwynt y Môr and Teeside (UK), Raahe (FI), Thornton Bank 3 (BE). No foundations have as yet been constructed at these sites.

FIGURE 1: SUMMARY OF WORK AT OFFSHORE WIND FARMS BETWEEN 1 JANUARY 2011 AND 30 JUNE 2011.

	BELGIUM	UK	GERMANY	NORWAY	TOTAL
Nr. of farms	1	7	2	1	11
Nr of foundations installed	4	108	16	1	129
Nr of turbines installed	0	101	6	1	108
Nr of turbines connected	0	68	32	1	101
MW fully connected to the grid	0	244.8	103.3	0.015	348.1
Total MW of projects (once completed)	148	2238	448.3	10	2844.3

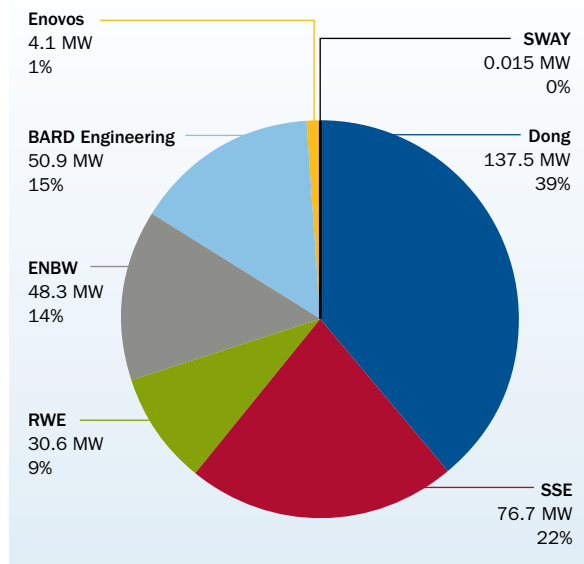
FIGURE 2: INSTALLATION AND GRID CONNECTION OF WIND TURBINES IN OFFSHORE WIND FARMS FROM 1 JANUARY 2011 TO 30 JUNE 2011.



## Developers

During the first six months of 2011, work was carried out on 11 farms in total. Five of them had turbines connected to the grid totalling 348.1 MW. The majority of wind farms, 3 of the 5 - totalling 299.8 MW - are being developed by consortia. Figure 3 shows the share of connected MW per developer from 1 January 2011 to 30 June 2011 taking into account the amount of grid connected capacity, and according to each company's share in the projects.

**FIGURE 3: OFFSHORE WIND FARM DEVELOPERS' SHARE OF GRID CONNECTED CAPACITY FROM 1 JANUARY 2011 TO 30 JUNE 2011 (MW)**

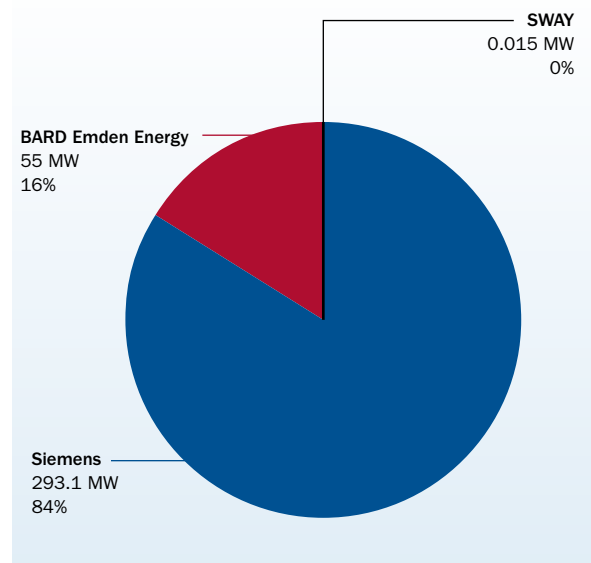


## Turbines

During the same period last year, the wind turbines installed had an average capacity of 2.9 MW. During the first half of 2011, average capacity increased to 3.4 MW. The total capacity of turbines connected to the grid is 4.5% higher than in the same period last year, a growth achieved with fewer turbines (7 turbines less) than in the same period last year. This is a result of the move towards deploying larger machines for offshore projects. This trend is expected to continue considering the new wind turbine announcements that have been made in recent months.

Three manufacturers had offshore wind turbines grid connected during the first semester of 2011. Siemens dominated the rankings with an 84% market share, followed by BARD with 16%. The SWAY 0.015 MW floating turbine was installed in Bergen to serve as a prototype aiming ultimately at the development of the 10 MW SWAY floating wind turbine. In addition REpower turbines were erected, but not fully grid connected during the first six months of the year.

**FIGURE 4: WIND TURBINE MANUFACTURER SHARE OF GRID CONNECTED OFFSHORE CAPACITY IN EU FROM 1 JANUARY 2011 TO 30 JUNE 2011 (MW)**



## Financing highlights and developments in H1 2011 and outlook

Financing activity in the offshore wind farm sector is picking up following the major transactions signed in late 2010, including the debt financings on a non-recourse<sup>1</sup> basis for C Power (Belgium, 325 MW) and Borkum West 2 (Germany, 200 MW), and the sale of minority stakes in Walney (UK, 25% of 367 MW).

While no debt transactions have been closed in the first half of 2011, several projects formally approached the banking market during that period and should close in the very near future. The projects expected to be financed in 2011 include several wind farms in Germany such as Globaltech 1 (400 MW), Meerwind (288 MW) and Baltic 1 (48.3 MW awaiting re-financing after construction), and the UK such as Lincs (270 MW), and Masdar's 20% stake in the London Array (126 MW). After the early transactions which took place mainly in the Benelux countries, the debt market is now moving to the countries most active in offshore wind development.

Several positive trends can be noted with respect to these transactions and the overall market:

- the number of banks willing to take offshore wind risk is steadily growing - more than 20 institutions have now obtained firm credit committee approval to take offshore wind risk;
- the recently unveiled KfW programme for offshore wind (announced in early June), which will provide up to €5 billion to ten projects in Germany, is a major step towards ensuring the development of non-recourse financing in that country. Two transactions expected to close shortly (Globaltech 1 and Meerwind) have tapped into the programme and will demonstrate its capacity to provide both volume and cheaper funding to the sector;

- Danish export credit agency EKF and the European Investment Bank (EIB) continue to support transactions as they did in the past; the arrival of new banks and of KfW is slowly allowing EKF and the EIB to reduce their volume of new commitments, but their participation in new financing is still seen as positive by investors and commercial lenders alike and continues to be sought;
- The UK's Green Investment Bank, announced in May, should provide additional financing capacity to the industry once it is up and running

During 2011 three to five transactions are expected to close, with a record volume of funds provided by banks – over €3 billion. From a relatively small source of funding for the sector (currently just below 20% of capacity, including re-financing), non-recourse lending is now becoming a large contributor, and could provide a significant portion of funding for nearly 50% of the capacity under construction by the end of the year. While no two projects are alike, the key lesson this year is that projects which want to find debt finance can do so if they do their homework, fulfilling the increasingly consistent requirements of the banks.

On the equity side, DONG has been the most active player, continuing its policy to “recycle” minority stakes in existing assets in order to finance new investments. It is currently selling 49% of Gunfleet Sands (UK, 172 MW) and in March it sold 50% of the Anholt project (Denmark, 400 MW) to Danish pension fund Pension-Danmark and DKA. The novelty in that last transaction is that it took place prior to completion of the wind farm. Even if the investors will not bear the construction risk, DONG guarantees completion on time and on budget. Demonstrating that such an approach is possible will certainly create new opportunities for utilities and developers to sell stakes in their projects before they become fully operational.

---

<sup>1</sup> A secured loan with no liability for the investor – see [www.businessfinance.com/nonrecourse-debt.htm](http://www.businessfinance.com/nonrecourse-debt.htm)

## Contributors

Research and analysis: Athanasia Arapogianni (Research Officer, EWEA)

Coordinating author: Justin Wilkes (Policy Director, EWEA), Jacopo Moccia (Head of Policy Analysis, EWEA)

Financing highlights: Jérôme Guillet (President and CEO at Energy Bankers à Paris)

Design: Mardi – Cover photo: GE