

POWER Transnational Offshore Wind Supply Chain Study

Executive Summary

A report by Douglas-Westwood Ltd to the POWER project

DOUGLAS-WESTWOOD



EXECUTIVE SUMMARY & CONCLUSIONS

1. Introduction

The POWER Project regions who have commissioned this study, in Denmark, Germany, The Netherlands and The UK are the centre of the world's offshore wind industry. It was here that the first offshore wind farms were built and it is here where the industry is forecast the strongest growth in the future.

The POWER Project seeks to identify future markets and develop co-operation between individual countries in order to achieve maximum benefit for the Southern North Sea region, and the industry as a whole.

2. Market Forecasts

There is currently over 700 MW of offshore wind capacity installed worldwide across 20 offshore wind farms in 7 countries. 96% of all current capacity is from the four POWER countries.

The total global offshore wind capacity forecast for installation between 2006 and 2010 stands at 7.8 GW. The four POWER Project countries have a total of exactly 4.6 GW of this total capacity, over half the world market. This shows the considerable importance of Denmark, Germany, The Netherlands and the UK on a global scale.

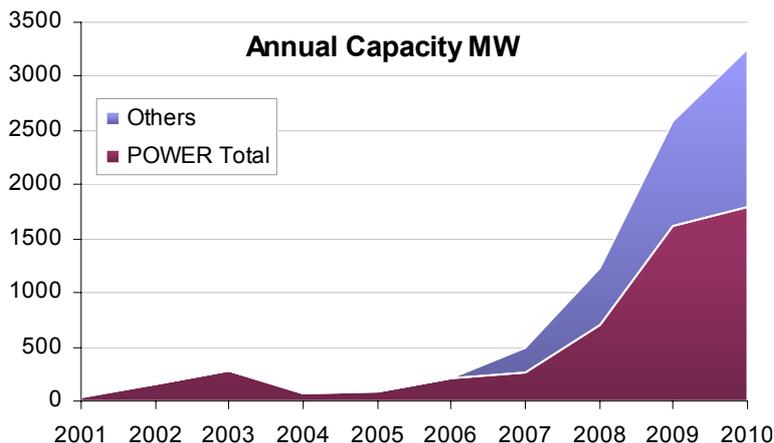


Figure 0-1: Annual Capacity



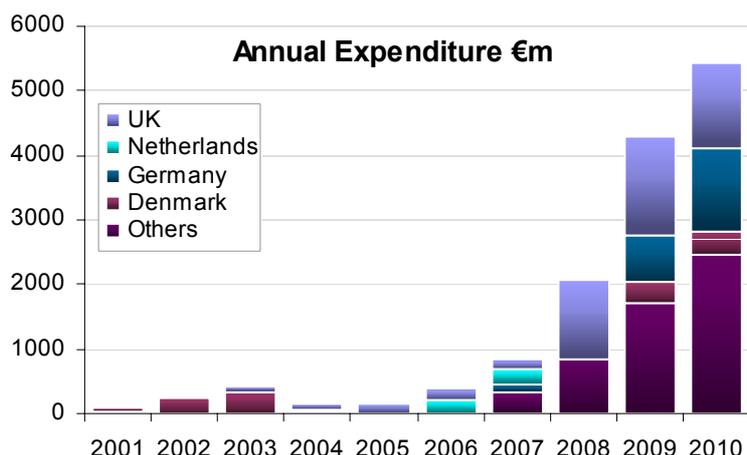


Figure 0-2: Annual Expenditure

Total global expenditure in offshore wind is forecast to exceed €13 billion for the 2006-2010 period. Annual expenditure will quickly grow until the end of the period to a level in excess of €5 bn/yr.

The POWER Project countries are forecast a total expenditure of over €7.6 billion over the next five years which is 59% of all global offshore wind expenditure.

3. Employment Forecast

As part of the research undertaken for the study, the potential for job creation in each of the POWER countries was investigated for the size of the offshore wind market that is forecast. The job creation figures below are from across the project lifecycle – development through construction to operation.

A total of 10,555 new jobs in offshore wind power could be created between 2006-2010. It is forecast that 5,666 of these jobs would be in the POWER Project countries.

	2006	2007	2008	2009	2010	Total
POWER	394	198	1,463	2,996	615	5,666
Others	0	745	1,008	1,473	1,663	4,889
Total	394	943	2,471	4,469	2,278	10,555

Table 0-1: Employment Forecast

4. Supply Chain Capability

The POWER regions currently have varied offshore wind supply chains that have developed around existing domestic and international wind power markets. Denmark and the German regions, for example, have a very high capability in procurement and manufacturing, being home to the world’s biggest turbine manufacturers and the supply chains that have been established around them. The UK and The Netherlands POWER regions’ supply chains are structured differently, being stronger in servicing functions and weaker in manufacturing.

Whilst no individual region can demonstrate excellence in every aspect of the offshore wind supply chain, **together, the individual POWER regions have full capability throughout all identifiable supply chain activities.** This has already been proven in the establishment of the world offshore wind market here. Already home to market leaders, as the offshore supply chain grows, the focus of it will continue to be based in the POWER region.

The POWER region contain the world's leading suppliers to the offshore wind industry and together with their supply chain they have the ability to present an unequalled offering in European and global markets.

The development, procurement, installation and operation of offshore wind farms in the Southern North Sea region already utilises skills and experience from the entire region. This will increasingly be the case as companies with key competences undertake international work.

The combined excellence possessed by the POWER region as a whole will be further proven as the offshore wind industry enters the forthcoming high-growth period from 2008 onwards. The region is fully capable of supporting projects undertaken within its own area, in Europe as a whole, and holds potential to gain value from market developments elsewhere in the world.

5. Challenges

Offshore wind is a high risk industry and its growth has been constrained through challenges which continue to prove difficult to overcome. Through co-operation each of these challenges must be overcome for the POWER region as a whole to maintain and build upon its world-leading status. The major issues that have been identified throughout the POWER regions are centered on the issues of:

- **Planning** – The offshore wind planning and approval process is often vague, inadequately structured and frequently slow. It does not currently fit with country's offshore wind development scenarios.
- **Cost** – The main issue at present in the industry relates to the cost of offshore wind development which is estimated in this report to be approximately 20% too high. Cost savings must be found.
- **Risk** – Strongly related to the issue of cost is risk. Improperly managed it inflates project costs to inoperable levels. The imbalance of risk on developers and contractors is causing real problems.
- **Contracting** – Contracting strategies are currently changing from an EPC basis to a multiple-contract approach in an effort to address the issue of risk and with the aim of reducing costs.
- **Financing** – Financing provided via subsidies or grants remains crucial to offshore wind development and will do so until the industry can demonstrate cost-competitiveness without them.
- **Technology** – Technology development is crucial to maximise the potential of offshore wind. Primarily surrounding larger models of turbines, the introduction of new technologies needs to be carefully assessed to avoid costly failures that have already impacted on the industry.
- **Politics** – Politics remains the single largest driver for the development of offshore wind. Whilst offshore wind remains so costly continued support is vital through renewable energy targets and government coordinated development programmes. Energy need is secondary to this but is of growing importance.

6. Recommendations

The POWER region is the world leader in offshore wind, both in operational and planned capacity, and in capability. This is not enough to ensure the successful development of offshore wind projects in the region. Actions must be taken to increase knowledge and build relationships between individual regions and the companies in them.

At present the POWER regions are clearly 'ahead of the game' and have major advantages in seeking export business. The challenge is now how to use this position to maximum long-term advantage to realise the considerable offshore wind potential of the southern North Sea and to capture and defend future export markets.

The recommendations made in the report are targeted at government, public bodies, development agencies and individual companies. Examples of the recommendations include:

Market information

There is a lack of easily accessible information dissuades companies from considering market entry.

- Offer a free market intelligence service to companies including a future projects database, a database of supply chain companies and a tendering opportunities database.

Coordinated policies & agencies

Competing publicly funded organisations duplicate work and generate confusion.

- Initiate a series of workshops to bring together public bodies involved in offshore windpower

Offshore oil & gas expertise

This considerable experience has not been fully utilised.

- Seminars / share fairs
- Participate in O&G trade shows
- Articles in O&G magazines

Business to business linkage

Considerable benefits to new entry companies.

- 'Speed dating' (introductory service) via POWER website

The full report is available for download on the POWER website at www.offshore-power.net

Contact for the POWER Case Study - Offshore Wind Farms:

For questions regarding this study and the supply chain work of the POWER project, please contact:

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