Installation ship capacities have been fully utilised in recent years in the UK.

BRITANNIA rules the wind

Compared with some other European countries, the British were a bit late. But then they reflected on their oil and gas industry heritage and took off. In the space of just ten years, they have built a well-functioning supply chain for the offshore wind industry.

The British technology and innovation centre Offshore Renewable Energy (ORE) Catapult published a study at the end of March attesting to the huge economic benefits of the offshore wind industry for the UK. The technology could bring the country as much as GBP 2.4 billion (€ 2.7 billion) a year by 2030. Andrew Jamieson, CEO of ORE Catapult, explained that the offshore industry was capable of delivering much more. It could act as an engine for job creation and strengthen exports.

The growth of offshore wind fits nicely with declining oil and gas production in the North Sea. In British waters, only 25 % of rigs are producing oil and gas. The decommissioning has been underway for some time: some 470 installations have had to be dismantled and disposed of. The installation and dismantling has given participating British companies a significant lead in expertise.

Consulting services in demand

The competencies acquired in oil and gas production are not limited to the mere building and commissioning of oil rigs. Major players, especially in the field of consultancy services, with a long track record of success have emerged. Offshore Wind Consultants Limited (OWC) is one of these

Photos(2): e.on

globally active consulting firms which has specialised in consulting services in the field of the offshore wind industry. OWC refers to itself as one of the leading companies and has served both investors and wind farm developers since the late 1990s.

In June 2014, Offshore Wind Consultants was acquired by Aqualis ASA. In August 2015 OWC opened a German office in Hamburg. Today, customers can tap into a core group of experts whose expertise reaches all the way back to the development of the UK's very first offshore wind farm. This team has taken part in the development of offshore wind technology mainly in Europe, but also in North America and the Far East.

Flagship of research

Offshore Renewable Energy Catapult is also in the ranks of the major consulting and research organisations. It is the self-described flagship of the British research landscape for wind, wave and tidal power. One of the teams there is working with the Scottish company ACT Blade, for instance, on the development of a textile-based rotor blade with just half the weight of a "normal" blade. The technicians working on the project have access to a 7 MW demonstration turbine in Levenmouth, the largest turbine in the world accessible to researchers. The ACT Blade has the potential to reduce the LCoE by 8.7 %, while boosting yields 9.7 %.

"Being able to test equipment on a full-scale, energy-generating offshore wind turbine – that can be accessed simply by walking across a ramp from the shore and is within an hours' drive from Edinburgh airport – is of huge significance in terms of reducing the cost and time to bring new systems to market," explains Philip Taylor, Limpet's Business Development Director. Limpet is a company that takes advantage of opportunities that ORE Catapult offers to small and medium-sized enterprises to test its safety devices.

The headquarters of e.on Climate & Renewables in Coventry

Tough, tougher, e.on

While in the field of consulting British companies dominate the picture, the major players among the operators have foreign roots. e.on Climate & Renewables is among the heavyweights in the British offshore market. e.on is the second-largest operator of offshore wind farms (OWF) in the world, with more than 1,100 MW of its own production capacity. The company was involved in the operation of Alpha Ventus, the first German OWF. Together with Dong Energy and Masdar, e.on manages the world's largest wind farm, the 630 MW London Array. Humber Gateway is currently the fifth offshore wind farm, operated by e.on in the UK.

With its 2 MW Airborne Wind Energy System, e.on is among the front runners in the industry. In county mayo in Ireland e.on is supporting a demonstration project in collaboration with the company Ampyx Power. The Dutch company Ampyx speaks of a milestone; e.on sees the whole thing with a bit more sobriety. "Airborne wind supports one of our overall targets to drive down cost for renewable energy. In addition to making airborne wind competitive to conventional wind power, we would like to work with authorities and legislators to pave the way for introducing this exciting technology and eventually make it eligible to participate in tendering processes," explains Anja-Isabel Dotzenrath, CEO of e.on Climate & Renewables.

The Danish Dong Energy is in the same league as e.on. The company suffers somewhat from relatively weak brand awareness outside the offshore industry. Nonetheless, Dong is the global market leader – no other company operates more offshore wind farms worldwide. Although the headquarters of the company is located in Denmark, Dong is in the operational leadership of several wind farms in the UK.

Ex-local provider with a strong background

Generally, Dong does not build its own generation capacity. The company leaves that to providers like ScottishPower. The firm has bundled all of its wind activities in the subsidiary ScottishPower Renewables. The company has a deep-pocketed partner in the background, however, as it press spokesperson Stephanie Todd underscores: "Since 2006 we have been part of the Iberdrola Group."

That has transformed ScottishPower Renewables from a local provider to a globally active company with 31 offshore wind farms and 1,600 MW of capacity. Iberdrola itself will invest some GBP 24 billion in the years up to 2020 and expects a return on investment of 6 % annually.

Increasing demand for ships

Yet another important service company is Maritime Craft Services Ltd. The company has a fleet of 24 ships for nearly every application. Its crew transfer vessels could be of particular interest. With all of the offshore wind farms in the waters off the British Isles, there is a rising demand for transfer options. Maritime Craft Services appears to be prepared for future requirements, since by its own account it is developing new ships.

It is beyond the scope of this article to give a full account of all of the players in the British offshore market. But one thing is clear: the supply chain for the UK wind farms is nearly closed. A similar survey of the actors five years ago still revealed some gaps, while ten years ago there was scarcely a supply chain at all, as such. The British industry has managed with a tremendous effort, to adapt to the new industry. This is particularly true in the area of service.

Jörn Iken