The North East of England has the potential to power over 3.3 million homes if the wind farms in the region are developed and deployed to their full capacity.

The region is the home to the UK’s first offshore wind farm, Blyth Offshore Wind Farm and will soon be home to the Blyth Offshore Wind Demonstrator. The Blyth Offshore Wind Demonstrator will be the world’s first offshore wind farm to use 66kV technology which hopes to demonstrate increased efficiency of the wind farm. In addition, the Offshore Renewable Energy (ORE) Catapult’s testing site at Blyth is an innovation hub for the offshore wind industry and will shortly be welcoming the world’s largest offshore wind blade, manufactured by LM Wind Power, who have chosen the facility to test their 88.4 metre blade.

The Round 3 Zone, Dogger Bank, has also received full consent and will consist of 4 offshore wind farms of up to 1.2GW, all of which will be at least 80 miles from shore. The wind farms in the Dogger Bank Zone will sit on the ancient Doggerland which had previously connected the United Kingdom to mainland Europe during the last Ice Age.

Wind farms

<table>
<thead>
<tr>
<th>Wind farms</th>
<th>Owner/Operator</th>
<th>Capacity (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational Blyth Offshore</td>
<td>E.On</td>
<td>4</td>
</tr>
<tr>
<td>Teesside</td>
<td>EDF Energy</td>
<td>62</td>
</tr>
<tr>
<td>Consented Blyth Offshore Wind Demonstrator</td>
<td>EDF Energy</td>
<td>40</td>
</tr>
<tr>
<td>Dogger Bank Teesside A&amp;B</td>
<td>SSE Renewables, Innogy Renewables UK, Statoil, Statkraft</td>
<td>2400</td>
</tr>
<tr>
<td>Dogger Bank Creyke Beck A&amp;B</td>
<td>SSE Renewables, Innogy Renewables UK, Statoil, Statkraft</td>
<td>2400</td>
</tr>
</tbody>
</table>
The North East is home to a number of dedicated skills and training facilities. In collaboration with the Port of Tyne, Northumberland College have invested £1.3m in a Wind Hub and Renewable Energies Centre. The Saltire Siemens Training Centre has dedicated areas where employees and apprentices are trained in an environment closely resembling what they will experience in the field.

A number of other companies operate training centres in the North East including Maeser Training (North Shields), Safety Technology (South Shields), South Tyneside College (South Shields) and Falck Safety Services (Billingham).

**DeepOcean**

Darlington

DeepOcean has been active in offshore wind for eight years, providing the installation and protection of subsea power cables, seabed survey, site investigation, subsea inspection, maintenance and repair services.

The company employs 250 individuals in the UK, all of whom work on offshore wind projects. Following on from successful contract awards in offshore wind, DeepOcean have been able to create over 50 engineering and operational positions in the UK.

DeepOcean has most recently secured contacts on Race Bank and Walney Extension Offshore Wind Farms in the UK and Bligh Bank and Nemo Link in Belgium.

**MPI Offshore**

Stokesley

MPI Offshore provides a number of services to the offshore wind industry including the installation of foundations and turbines, consultancy, workboats, technicians and engineers.

The company has won a number of contracts for projects including Rampion and Doggerland Offshore Wind Farms in the UK and Nordsee 1 and Sandbank Offshore Wind Farms in Germany.

**Tekmar**

Newton Aycliffe

Tekmar has been active in the offshore subsea sector for over 30 years and first entered the offshore wind market in 2007 through the development of a cable protection system for the Hoekse-l demonstrator project in Germany. Since then, the company has supplied 4800 cable protection systems for 43 projects across seven countries and three continents, with contracts usually ranging from £1m to £8m.

Approximately 110 out of the company’s 100 employees work across the offshore wind projects delivered by Tekmar.

Tekmar has recently opened a new 80 000 sq foot production facility and is now investing in a new R&D facility.

The company is headquartered in Newton Aycliffe and also has representation across USA, UAE, Germany, Singapore and China.

**Offshore Renewable Energy Catapult**

Blyth

Established in 2013 by UK Government, the Offshore Renewable Energy (ORE) Catapult is a technology innovation and research centre with the aim of reducing the cost of offshore renewable energy, supporting the growth of the UK industry.

The site at Blyth is home to two blade test facilities, including the world’s largest indoor blade test facility at 10m, a 15 megawatt power train test facility and a high voltage electrical lab which carried out the world’s first accelerated lifetime testing of 66kV cabling.

**JDR Cable Systems**

Hartlepool

JDR offer the design and manufacture of inter-array cables connecting offshore wind turbines. JDR first entered the offshore wind market in 2006 following on from a contract with the Beatrice Demonstrator Project in Scotland. 2008 was a key year for the company, with their first full project award (Greater Gabbard) and their Hartlepool site approved.

Since then the company has won multiple contracts with windfarms across the UK and Germany, with contracts in the range of £15m to £30m.

Approximately 500 people are employed at the firm with 50% of the workforce working in offshore wind. In addition, the company runs an annual apprenticeship scheme.

JDR recently invested circa £10m in an extension to the Hartlepool facility including new carousels and a state of the art layup machine for cable and umbilical manufacture. In addition, JDR has invested significantly in new technology developments, including recently a 66kV full subsea power cable system, as well as pioneering the design of inter-array cables in the offshore energy industry, contributing to cost reduction targets with innovations such as aluminium cores.

**Project Spotlight**

**Blyth Offshore Wind Demo**

EDF Energy Renewables

The Blyth Offshore Wind Demonstrator will showcase a number of innovations.

The project will comprise of up to 15 turbines which will be installed on self-floating and submerged gravity-based foundations, which will be designed and built by Royal BAM Group in the Neptune Dry Dock on the River Tyne. The project will also be the first offshore wind project to use 66kV cable technology to link the wind farm to the onshore substation; this represents a step forward in testing the efficiency and cost reduction impact of this technology.

This map demonstrates the spread of UK companies involved in offshore wind in the North East representing the employment and wider economic benefit from companies doing business in offshore wind.

N.B. The case studies included are intended to provide a representation of the types of projects and companies active across the offshore wind supply chain.