ABP's Lowestoft Eastern Energy Facility

How can we make the most of the UK's green industrial revolution?

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As the UK accelerates its journey towards net zero, the offshore wind industry has emerged as a key driver of the green industrial revolution. Associated British Ports (ABP) is investing to meet the industry's requirements by providing state-of-the-art port infrastructure and creating favourable conditions for energy clusters, which will benefit the wider economy.

Why is the offshore wind industry vital?

The offshore wind industry is particularly important to the UK because of the country's commitment to a legally-binding 2050 net zero target. Whatever mix of renewables is deployed to achieve this, we will still need a lot of offshore wind energy to support it, with required levels expected to be between 65 and 125 GW. To put this into context, the amount of installed capacity is currently around 10 GW, so there is a long way to go in order to achieve our goals.

There is clearly an opportunity for offshore wind companies to play a leading role in the UK's green industrial revolution. The Government has also strengthened the market by announcing its ambitions for a green recovery, in a series of public policy documents. As a result, there is a whole host of different projects ready to bring additional offshore wind capacity to the market and The Crown Estate continues to lease new seabed rights.

As the UK's leading and best-connected port operator, ABP is an ideal partner for offshore wind energy businesses. We have over 30 years' experience in supporting developers through the full offshore wind project lifecycle. One of the biggest offshore wind projects the company has supported over the years is Green Port Hull, where leading wind turbine supplier Siemens Gamesa Renewable Energy has been manufacturing offshore wind turbine blades since 2016 and has facilitated the load out of over 2GW of turbines from the 54-hectare, £310 million state-of-the-art production and assembly facility. Building on this experience, the company is exploring other opportunities across its estate of 21 ports to attract more manufacturers into the UK.

However, when it comes to operations and maintenance (O&M), there are still several important pieces of the puzzle missing. What we need to see is innovation in O&M facilities to satisfy growing market demand. The challenge for the UK ports industry is that it tends to deprioritise speculative building in favour of projects with existing specific and well-defined use. That is always a difficulty when it comes to the timing of investments. At ABP, we aim to address this problem by acting early and developing projects with future requirements in mind.

Whilst we have historically supported a variety of energy industries, including the import of coal, biomass and bulk energy liquids, we are also shifting our focus towards renewable sources of energy. ABP has identified offshore wind amongst other strategic areas for future growth, such as hydrogen and carbon capture and storage. Playing a key role in supporting the offshore wind industry is important because it will solidify our place at the forefront of green innovation within the ports industry.

ABP: the number one host of O&M bases in the UK

ABP is the number one host of O&M bases in the UK, providing infrastructure for O&M facilities and the ongoing operations and maintenance of offshore wind farms in Barrow, Grimsby and Lowestoft.

The Port of Grimsby is the largest O&M port in the world and is located on the Humber estuary on the East Coast of England, making it ideally placed for access to operational and planned offshore wind farms in the North Sea. It is already home to Ørsted's East Coast hub along with RWE and XceCo's O&M bases and has the space, facilities and flexibility to suit future offshore requirements. The port has also recently been chosen by Offshore Renewable Energy (ORE) Catapult as its new O&M Centre of Excellence to develop research and innovation projects to improve the way offshore wind farms are operated and maintained.

Andy Reay

The Port of Barrow also plays a key role in serving the offshore energy industry in the Irish Sea and in East Anglia, the Port of Lowestoft has emerged as the East of England's Energy Hub supporting developments in the Southern North Sea.

Investing today to meet evolving requirements

Over the next ten years, a significant proportion of new offshore wind developments will be located around Dogger

Green Port Hull

ABP's Port of Grimsby

Bank, off the East Coast, at Hornsea, off the Humber Coast and in the Southern North Sea. We are seeing a concentration of large offshore wind energy projects off the East Anglian Coast, with the involvement of significant industry players such as Vattenfall and Scottish Power Renewables.

Currently, port infrastructure and capabilities to support these large future wind farms are limited. To address this challenge, ABP will be investing in a new Lowestoft Eastern Energy Facility (LEEF) project, which will significantly upgrade the capability and capacity of the Port of Lowestoft. The project will enable us to build port infrastructure to meet the offshore wind industry's current and future demands. One of the key requirements for an O&M facility is its geographical proximity to the wind farm it is looking to serve and with its space and strategic position, the Port of Lowestoft provides an ideal base for this.

ABP's LEEF project represents a step change in our ability to service customers in the growing Southern North Sea energy business, by re-engineering the existing quay and creating the modern infrastructure needed to support a rapidly changing energy industry in a growing regional economy. The project will ensure that the Lowestoft berths can support larger vessels and will also provide a site that is suitable for O&M bases or laydown areas as part of the construction phase of these offshore wind farms. We recognise that during the construction phase of offshore wind projects multiple construction vessels will need port access in order to load on mission equipment and transfer their crews off and on. Therefore, LEEF will enable us to provide not just O&M but also construction support.

LEEF Outer Harbour

The LEEF project is centred around the Outer Harbour East in the Port of Lowestoft and is a major opportunity that will require around £25m of investment. When complete in 2023, we will have replaced the existing quay wall, created 360m of berthing space for simultaneous use by three SOVs and created over 1 acre of new infill land. We will also be deepening the Harbour Approach channel, creating the berth pockets needed for flexible operations.

In addition, quayside will be constructed to deal with high point loads and provide a total of 8 acres of open storage and marshalling space needed by key customers. Around 5,000 sqft of new office space with direct quayside access and parking is also expected.

The second aspect of LEEF will create new capacity at the western side of the Outer Harbour. When delivered, both projects will complete the modernisation of Lowestoft Outer Harbour's marine facilities, creating key UK capabilities for the journey to net zero.

Creating an O&M energy cluster

The LEEF project will not only bring additional capacity but can also encourage supply chain companies to locate in Lowestoft in order to support O&M operations. We're working with local stakeholders to create an innovative environment that will be attractive to other offshore wind support companies and help draw them to the area. I think that investing in the port infrastructure of the existing O&M energy cluster in Lowestoft will contribute to the town's prosperity, creating a new growth pathway for the Port with important implications for the surrounding area.

A bright future for the Port of Lowestoft

Economic impact work in 2018 demonstrated that the Port of Lowestoft contributes £30m to the economy annually and supports around 580 local jobs. This is a role that is set to grow with a rise in activity, new investments and new customers. In recent years the Port of Lowestoft has completed a two-year contract to support the construction of the Galloper offshore wind farm, a 353MW project located 30km off the coast of Suffolk.

In addition, the port is now home to the O&M base for the Greater Gabbard offshore wind farm, which is a 504MW located 23km off the coast of Suffolk in England. The long-term collaboration between SSE and ABP on this project began in 2012 and is projected to continue to positively contribute to the local economy for decades to come. In 2019, Scottish Power Renewables opened a new operations and maintenance building, which will support its 714MW East Anglia ONE offshore wind farm at the Port of Lowestoft's Hamilton Dock.

The port's offer is complemented by Orbis Energy and PowerPark, where key offshore energy developers, operators and service providers are located, including SSE, ScottishPower Renewables, SLP and Turner Iceni. The PowerPark also provides a base for a number of businesses in the engineering, marine and fishing industries. Strengthened by ABP's LEEF project, which is tailored to the offshore industry's latest requirements, the Port of Lowestoft provides an ever more competitive package for offshore wind customers.

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ABP's Port of Lowestoft