

Humber Leadership Board

25 March 2021

Offshore Wind Update

Introduction

The recent announcement of proposals to double the capacity of the Siemens Gamesa has once again placed a positive spotlight on the offshore wind sector in the Humber. This paper updates the Board on the Siemens Gamesa proposals along with a number of other key projects progressing across our region. These other initiatives will be the focus of future papers to come to the Board.

A separate paper sets out the current position in terms of the wider decarbonisation programme of which offshore wind is such an important element.

Background

The Humber Estuary, the Energy Estuary, is home to one of the UK's most significant industrial clusters, spanning both banks. The Humber has long been a primary location for energy generation and associated industries but it's now perhaps better known as the main centre for developing the UK's world leading offshore wind sector with flagship investments from Siemens Gamesa in Hull and Orsted in Grimsby.

The Humber Estuary Plan prioritises 'Accelerating clean growth' recognising that the Humber is central to the government's vision of a net zero carbon future, whilst recognising the need to protect strategically important industries through a fair transition and securing local benefits for deprived places. Growing the cluster is supported through the OSW Sector Deal.

Over £650m has now been invested in the offshore wind cluster in the Humber region through renewable energy projects and Orsted is investing £6b in Hornsea One and Two – and the world's largest East Coast Hub operations and maintenance facility at Grimsby.

Green Port Hull, home to Siemens-Gamesa, is critical to achieving the Government's targets of 40GW installation capacity of offshore wind by 2030 and net zero emissions by 2050. Associated British Ports and Siemens invested £310 million in a state of the art offshore wind turbine blade manufacture, assembly and servicing facility at Hull's Alexandra Dock, directly creating over 1,000 new jobs with 98% of the employees come from the local area, and many more in the supply chain.

Siemens Gamesa

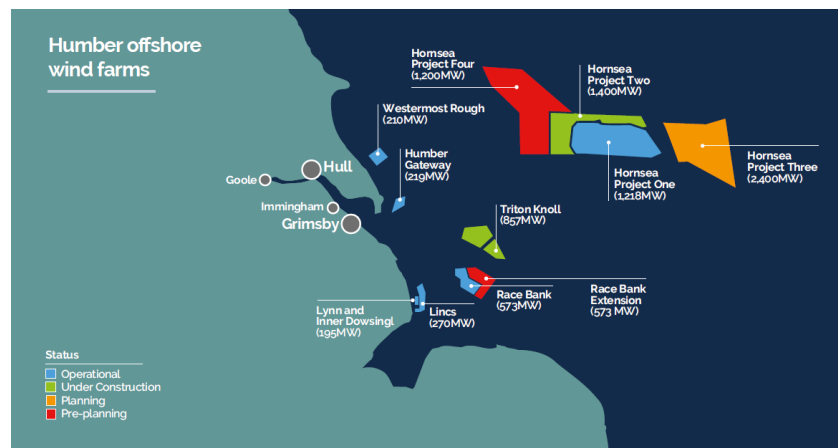
Opened in December 2016, the factory initially produced 75m blades which have been used in offshore wind farms off the east coast of the UK including Race Bank Dudgeon, Beatrice, Walney Extension, Sea Made, East Anglia One and Hornsea

One and are currently gearing up for Hornsea Two the world's largest offshore wind farm for Orsted. Siemens Gamesa remodelled its production facility in 2019/20 to enable it to manufacture the new larger 81 metre-long blades for the new 8MW turbine to meet the needs of the industry.

Taking offshore wind to the next level, Siemens Gamesa submitted a planning application to Hull City Council in February 2021 with a plan to double the size of the existing factory to facilitate the production of the next generation of 108m blades for the new 1.4GW turbines, showing the company's commitment this region, its on-going development of blade technology and future proofing operations and enhancing the longevity of the Humber as an offshore wind hub. The application clearly demonstrates the company's commitment to the area and positive experience of Hull.

The application benefits from Hull City Council's Port of Hull Local Development Order, a flexible outline permission for a range of renewable energy uses. Through significant front-

loaded local authority investment in Environmental Impact, Habitats Regulations and other necessary assessment work normally the responsibility of the applicant, and having secured the input and cooperation of key statutory consultees in the Environment

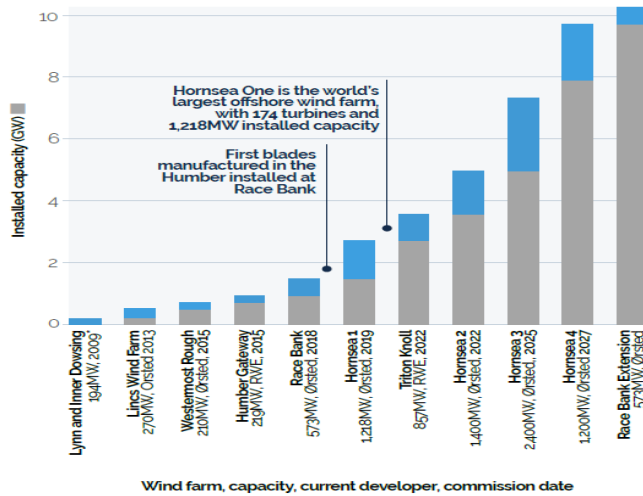


In 2016 Centrica sold Lynn and Inner Dowsing to UK Green Investment Bank Offshore Wind Fund and funds managed by BlackRock.

Agency, Highways England, Historic England, and Natural England, the Council have reduced risk, cost, and timeframes for LDO-compliant development, shaving many months off pre-application preparation and anticipated decision-making timeframes. The flexibility provided by the LDO's outline consent affords investors greater confidence that Green Port Hull can accommodate the ever-evolving requirements of dynamic renewable energy sectors.

- The Siemens Gamesa investment is based upon them securing contracts for the supply of their Offshore Wind Turbines to the developers of the round three wind farm zones.
- Innogy has chosen Siemens Gamesa as the preferred supplier for the Sofia Offshore Wind Farm Zone (Dogger Bank) for its 1.4 GW offshore wind turbine with construction expected to get underway in 2023.
- They are also the preferred bidder for ScottishPower Renewables East Anglia Hub as the two companies work together ahead of the next Contract for Difference auction scheduled for later this year. Construction of the East Anglia Hub is expected to commence in 2023, with completion in 2026.

Growth in offshore Wind farms' installed capacity



The region is playing a key role in driving down the production costs of the offshore wind sector and maximising the advantages for the UK Industry in clean growth.

Clean growth is important to the area particularly as the Humber is one of the highest emitters in the region. There are a number of major projects planned for the future that will enable the region to achieve these targets. Here is just taste of what is happening.

Orsted - East Coast Hub

Orsted has built the world's largest offshore wind operations and maintenance centre at Grimsby employing 350 local people with five offshore wind farms directly managed from the East Coast Hub. Hornsea Two will be joining the East Coast portfolio as the UK's largest offshore wind farms in 2022. Once complete, the six sites will contribute to the generation of clean electricity for 3.2 million homes across the UK. Link to <https://orsted.co.uk/>

Zero Carbon Humber

Zero Carbon Humber (ZCH) partnership plans to capture carbon dioxide at scale from industry around the estuary via pipelines that transport the emissions to permanent storage in naturally occurring aquifers under the southern North Sea which could reduce the UK's annual emissions by 15% billion in carbon taxes by 2040.

The Anchor project led by Equinor Hydrogen to Humber (H2H) will establish the world's largest hydrogen production plant with carbon capture at px Group's Saltend Chemicals Park.

Capture technology is already under development at Drax Power Station's bioenergy carbon capture and storage pilots which could be scaled up to create the world's first carbon negative power station in the 2020's.

SSE Thermal has over a decade of experience with carbon capture and storage projects and is now developing Keadby 3 which could become the UK's first gas-fired power station with CCS by the mid-2020's.

Renewable Hydrogen – Gigastack

ITM Power, Ørsted, Element Energy and Phillips 66 the Gigastack project will conduct a Front-End Engineering Design ('FEED') study on a 100MW electrolyser system, and further develop the manufacturing for ITM Power's next generation stack.

Able

The sector has had a further boost in recent days with the announcements of support for the Able Marine Energy Park.

the first phase of AMEP works will see the development of up to 217ha (536 acres) of land and the construction of 1,349m of heavy-duty, deep-water quays. It is anticipated that facilities for manufacturers will be constructed, including potentially for the Korean steel producer SeAH.

AMEP's primary activities will cover the manufacture, storage and installation of offshore wind components within a new 'world-scale' industrial cluster. The quays will provide four adjacent installation bases c. 75ha with a likely annual capacity to install c. 4GW of offshore wind power.

In terms of job creation, it is anticipated that by 2030, 1,500 direct on-site jobs will be created, along with 1,500 in the immediate supply chain.

ORE Catapult

We would also bring to the Board's attention the work of the ORE Catapult.

The Offshore Renewable Energy (ORE) Catapult is the national innovation centre for offshore wind. There are a number of national catapults serving different sectors across the country. The big prize for the Catapult is their aspiration for a £30m centre of excellence. Whilst the proposal is supported, it remains unfunded and this commitment would help enhance Grimsby as the global market leader for O&M, building on the recent publication of the offshore wind prospectus.

The UK has ambitious targets to grow the installed capacity in offshore wind (OSW) to 40GW by 2030 on the way to achieving Net Zero. As the world has realised the potential of Offshore Wind, numerous new markets are now active in the US, China, Taiwan, Japan and Europe – and they are capitalising heavily and rapidly. The UK will not be the largest deployer of Offshore Wind beyond 2027. Remaining the world leader in Offshore Wind O&M is time sensitive and requires immediate investment to capitalise on the UK's existing advantage. The role of the Catapult in keeping the Humber region at the forefront of innovation is therefore essential.

The Policy Toolkit

The area has a strong track record in successfully utilising the government's policy toolkit to attract and develop investment. The Green Port Hull investment was supported by a £25m RGF programme to ensure the investment secured local benefits – Siemens now employs 1000 people, 98% live locally. A further 2800 local jobs were secured in as a result of the funding supported by a significant skills programme. In addition to jobs and skills, land assembly, innovation and support for businesses were all elements of the programme. The Humber Enterprise Zone, arguably one of the most successful in the country, and the first to be fully developed in Hull, supported the supply chain. This policy has rewarded the brave steps taken by Hull City Council to secure Siemens, with uplift being utilised for other capital schemes and employment support initiatives.

The EZ LDO is a tantalising factor when investors are considering port related land options, particularly Hull's QE Dock North, collocating the major component supply chain remains an ambition. Further support from the Government came in the Budget when the Humber was declared a Freeport which included 3 major tax sites in Goole, East Hull and Able Marine Energy Park.

More recently, the area has been awarded funding from Innovate UK for the trailblazing Humber Zero Carbon Cluster Plan and proposals for a Freeport that supports related development, particularly Hull East, (supporting significant investments in Yorkshire Energy Park and Saltend Chemicals Park) and Able Marine Energy Park where OWMIS funding has now been committed to.

The new Offshore Wind Investment Programme to support the delivery of manufacturing investment in the offshore wind supply chain in disadvantaged or deprived regions in the UK is a welcome intervention to further incentivise the industry to further invest where they have a foothold; and supports Quayside developments and expansion plans which have been submitted to the £160m Offshore Wind Manufacturing Investment Support Scheme that closed in February 2021.

How to maximise the opportunity

Clearly the confirmation of the Humber Freeport and funding for the Able Marine Energy Park are clear signs of the Government's support for the clean Energy revolution on the Humber. However, the following actions would help to maximise the opportunity available. Therefore, the following need to be promoted:

1. The importance of the Offshore Wind and other forms of energy strike price to incentivise manufacturers of offshore wind turbines and their supply chain to the Humber.
2. Asking the government to enforce, at least, the 60% UK content currently prescribed.
3. Support for skills funding packages to ensure the people of the Humber benefit from this growth opportunity
4. Utilising the information in the attached to demonstrate the strong track record the Humber has of turning a vision into a reality

5. Supporting any funding bids for innovation centres, R&D facilities and manufacturing facilities within the Clean Energy sector
6. Contribute as appropriate to the All-Party Parliamentary Group for Energy Studies
7. Maximising the opportunity afforded by the BEIS Cluster Programme.