

Humber Leadership Board

3rd December 2020

1. Decarbonisation and Renewable Energy

Decarbonisation has been identified as a critical area for collaboration between the Humber local authorities. This paper sets the context and rationale for that collaboration and recommends two specific areas of focus for discussion, namely Industrial decarbonisation and offshore wind development.

2. Context

Achieving clean growth, while ensuring an affordable energy supply for businesses and consumers, is at the heart of the UK's Industrial Strategy. Clean growth means growing the national income while cutting greenhouse gas emissions. Clean Growth will increase productivity, create good jobs, boost earning power for people right across the country, and help protect the climate and environment upon which we and future generations depend. The recently published Humber White Paper for Clean Growth sets out how the Humber generates a significant part of the UK's energy and is leading in the deployment of renewables, especially **offshore wind power**. The area is central to the further roll-out of offshore wind in the North Sea and hosts the largest wind farm under construction in the world. The Humber's cluster of **energy-intensive industries** create products that the wider economy and society depend on, including steel, petrol, chemicals, plastics and cement. These are strategically important to the UK. However, through these processes the Humber emits more CO₂ than anywhere else in the country, whilst also being one of the places most vulnerable to climate change.

3.0 Industrial Decarbonisation

Decarbonisation matters more to the Humber than most places in the UK:

- The Humber is especially vulnerable to climate change, with an economy dependent on water and the second highest flood risk in the country;
- The Humber's industrial cluster emits more CO₂ than any other UK cluster (30% more than the next largest)¹. Total emissions stand at 12.4MtCO₂ per year, or 13.9 tonnes of CO₂ for each Humber resident – more than double the national average;
- Energy intensive industries, which are also directly and indirectly large emitters of CO₂, account for 23% of the value of the Humber economy and around one in ten jobs. If not carefully managed, decarbonisation could be a serious economic shock;
- Decarbonisation is a major economic opportunity. Nationally, low carbon sectors are growing significantly faster than the wider economy, and the Humber has already become a magnet for the renewable energy sector.

The Humber's contribution towards the UK's decarbonisation goals is multi-faceted:

- it is a leading location for the transition to clean energy, with a substantial concentration of renewable energy generation assets and businesses;

- it has a large and dynamic industrial cluster that is ideal for piloting an ambitious approach to decarbonisation, in support of the government’s Industrial Clusters Mission;
- the Humber is committing to an innovative “whole place” approach to decarbonisation, integrating activity across the economy and society through its future Local Industrial Strategy.

Carbon capture and storage in the Humber

The Humber’s sizeable industrial cluster and power generation assets provide the critical mass required for large-scale deployment of carbon capture technology with transportation infrastructure. The area’s close proximity to large available storage sites means there is capacity to deliver substantial reductions of carbon emissions in a relatively short period of time.

Businesses in the region are actively developing projects that capitalise on this opportunity. For example:

- ▶ VPI Immingham, one of Europe’s most thermally efficient gas-fired combined heat and power plants, supplies steam and electricity to the Humber’s two oil refineries, as well as up to 2.5% of UK electricity demand. Together with owner Vitol, the company is developing proposals for producing blue hydrogen and using it in its fuel mix, reducing the CO₂ footprint of VPI and the adjacent refineries by 2.75 Mt per annum. Remaining CO₂ created by the power plant, and potentially the refineries, would be captured and stored under the North Sea.
- ▶ Drax Group, Equinor and National Grid Ventures are exploring how scaling-up bioenergy carbon capture and storage (BECCS) could make Drax Power Station the world’s first carbon negative power station in the 2020s and enable the development of a large-scale blue hydrogen demonstrator at the Drax site. This would anchor the development of a pipeline network that could also transport CO₂ captured from industry to permanent storage in naturally occurring aquifers under the southern North Sea, and supply hydrogen to industry.

Projects such as these would support the Humber to become a net zero carbon industrial region and further develop its hydrogen economy.

Through the ISSCF the Humber Industrial Decarbonisation Roadmap is seeking to establish “the world’s first net-zero carbon industrial cluster by 2040 and at least one low-carbon cluster by 2030”, involving the Humber Local Enterprise Partnership (LEP) and led by CATCH (Immingham). It is essential that this work continues and will continue to require effective collaboration across boundaries. This is aligned with delivery and the **Humber Industrial Decarbonisation Deployment Project** that brings together multiple stakeholders from industry and the power generation sector. Failure to collaborate effectively will impact negatively on all sectors and put at risk the ambitions for clean and inclusive growth across the Humber.

4. Offshore Wind

Energy is an essential foundation for economic growth. The UK is transitioning to clean sources of energy, and the pace of change is set to accelerate. Over just a few years, the Humber has transformed into one of the world’s leading hubs for clean energy. The Humber Energy Estuary has a vital role to play as the offshore wind sector scales up to deliver the Sector Deal, and the opportunity to create more sustainable new jobs and business opportunities throughout the energy system.

The Humber Energy Estuary makes an important and diverse contribution to the UK’s clean energy mix, including offshore wind. This includes manufacturing of blades, assembly and

installation from Siemens Gamesa's facility at Greenport Hull; and operations and maintenance from the Port of Grimsby, including Ørsted, RWE, Centrica and others, servicing six operational wind farms including Hornsea One, the world's largest wind farm, supplying 2.5GW of clean energy to British homes and businesses.

The Humber Offshore Wind Cluster is the most advanced of 8 identified offshore wind clusters across the UK, all with distinct possibilities and at varying levels of progress. **The Humber Offshore Wind Advance Cluster Prospectus** is the result of consultation between manufacturers, developers, businesses, academics, policymakers, trade and membership organisations, and training providers. It draws on experiences to date, assesses strengths and weaknesses against the 20 attributes of an advanced cluster, and sets out a plan to bridge gaps and build on successes to achieve the ambition to lead the Humber to become a recognised Advanced Offshore Wind Cluster which continues to drive benefits for the area.

Next Steps and Recommendations

- 1. The Humber Leadership Board is asked to endorse the proposed way forward utilising both sub-sectors and their representative organisations within the broader energy theme.**
- 2. Terms of reference are being developed to ensure a seamless link and added value to all parties involved.**