Humber Industrial Cluster Plan: Inward Investment

Final report March 2023

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Executive summary

The Humber Industrial Cluster Plan (HICP)

As part of the UK's world-leading industrial decarbonisation strategy, a target has been set to ensure that there will be at least four low-carbon clusters by 2030 and at least one net zero cluster by 2040. At the forefront of this are plans to decarbonise the UK's most carbon-intensive cluster – the Humber industrial cluster.

The cluster plan, announced in January 2021, aims to support the transition towards the UK's first net zero cluster by 2040. It is based on a roadmap of multiple projects (centred mainly around Carbon Capture and Storage (CCS) and hydrogen technology) set to commence construction in 2024, working towards deployment in 2027. This opens the opportunity for investment in maintaining, upskilling and growing the labour workforce in the region, in turn creating a world-leading net zero skills hub that can benefit the UK as a whole and act as a centre of excellence for global industrial decarbonisation.

LOT 6 – Inward Investment

This report focuses on Lot 6 of the overall cluster plan and covers inward investment as well as investment in the UK.

Foreign Direct Investment (FDI) or inward investment refers to cross-border investments from one country into another, with the aim of establishing a lasting interest in a business where the investor's purpose is to have an effective voice in the management of the enterprise. According to FDI statistics, an effective voice is defined as ownership of at least 10% of the equity share capital. From a UK perspective, inward FDI is an investment by foreign investors who add to or acquire equity share capital in a UK resident affiliate enterprise (subsidiary or associate) or branch by a non-UK parent company or head office.

Purpose

The purpose of the report is twofold: to provide a comprehensive overview of the inward investment opportunities and challenges for the Humber region in the context of decarbonisation, and to propose an action plan to maximise the inward investment opportunity that net zero presents to the region.

While this report focuses on attracting inward investment, the recommendations also apply to investment within the UK.

Methodology

This report is based on evidence obtained from economic literature reviews and a stakeholder engagement campaign.

Key themes for the action plan were tested during a stakeholder workshop convened to discuss inward investment issues and further refined following stakeholder feedback.

As part of the stakeholder engagement campaign, interviews with a pool of investors and interested parties were conducted under Chatham House rules. The interviewees included (non-exhaustive list): DIT, National Grid, Harbour Energy, Equinor, SSE, Pensana, British Steel, Shell, BEIS, Uniper, Phillips 66, Drax, VPI, local authorities and Local Enterprise Partnerships (LEPs).

Executive summary

Overall Assessment

The Humber industrial cluster has a number of key positive factors to attract inward investment, including:

- The UK has a positive profile for attracting inward investment and the infrastructure in place to support that investment (the support offered includes for example, Freeports, the decarbonisation agenda, public funds and tax incentives).
- Government policy is supportive of the net zero transition and the Humber region was selected as a Track 1 cluster for Carbon Capture Usage and Storage (CCUS) development.
- The fact that the Humber industrial cluster has established inward investment operating in the region already and established supply chains means that there is a clear precedent for further inward investment.
- A focus within international funds and investors on green investment opportunities such as those on offer in the Humber industrial cluster.

The Humber investment opportunity and challenge in the context of a decarbonised economy

- The Humber is the largest industrial decarbonisation opportunity in the UK.
- Decarbonising the Humber region is likely to require investment of circa £6bn of CAPEX and £20bn total investment.
- Securing the incremental inward investment required for net zero will require addressing some of the key barriers to FDI identified in this report.

The decarbonisation opportunity for the Humber has the potential to benefit many sectors. The initial stages of decarbonisation infrastructure development are expected to support three key areas of development: CCUS infrastructure, decarbonisation of power generation, and the development of storage facilities.

Local initiatives to stimulate growth

Humber Enterprise Zones and the industrial legacy

Enterprise zones are areas around the country that support existing and new businesses by offering incentives. The region benefits from the legacy of the Humber Enterprise Zone. The HEZ contributed to the growth of ports, logistics and renewable energy. The HEZ legacy successfully built the blocks needed to achieve Humber's ambition to become a leading national and international low-carbon energy centre. The Humber is home to a well-established cluster of energy-intensive and continuous process industries that are strategically critical to the UK and its economy.

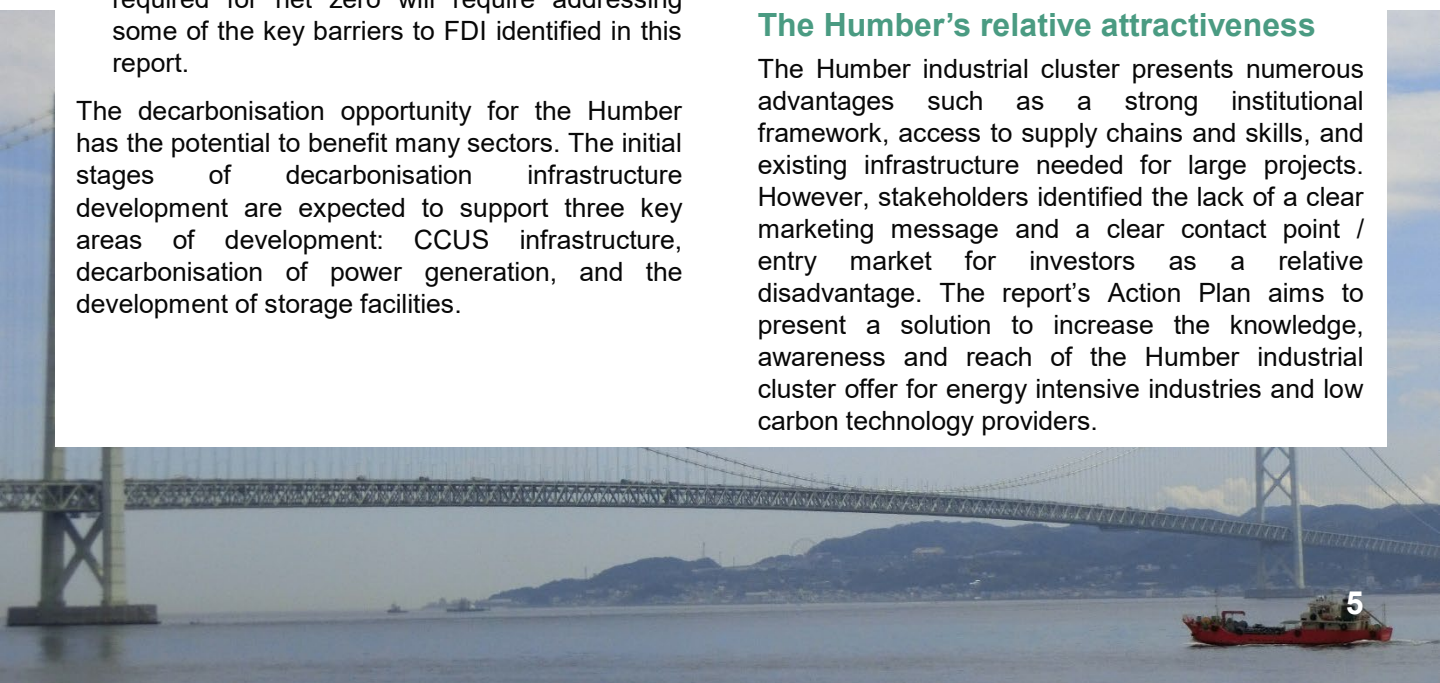
The Humber Freeport

Humber Freeport will take in a wide 45 square kilometre area spanning both banks of the Humber. The Humber Freeport:

- Has the potential to support low-carbon hub development.
- Will make trade-related processes more efficient and will provide an advantageous route for the import of low-carbon technologies and products supporting the decarbonisation of the Humber industrial cluster.
- Will provide an easy route for the export of low-carbon products within the Freeport area. There are two types of zones, each with different advantages to stimulate economic growth: Customs Zones and Tax Zones (more details on these can be found in the subsequent chapters).

The Humber's relative attractiveness

The Humber industrial cluster presents numerous advantages such as a strong institutional framework, access to supply chains and skills, and existing infrastructure needed for large projects. However, stakeholders identified the lack of a clear marketing message and a clear contact point / entry market for investors as a relative disadvantage. The report's Action Plan aims to present a solution to increase the knowledge, awareness and reach of the Humber industrial cluster offer for energy intensive industries and low carbon technology providers.



Executive summary - Action Plan

The key challenges we have identified facing the Humber industrial cluster are:

- In many cases, major investment decisions are made outside the Humber region, e.g. in the boardrooms of multinational investors. In this context, it is essential that the appeal of investment in the Humber region is clearly communicated locally and internationally in a coordinated manner.
- While significant potential funds are available for investment in decarbonisation projects, there are competing projects and clusters in the UK and internationally; in this context, the case for the Humber region will need to be conveyed clearly and widely.

Based on the situation assessment outlined in this report, the recommended action plan for the Humber region and for inclusion in the Humber Industrial Cluster Plan as follows:

A coordinated regional strategy

Action 1: Formulation of a regional decarbonisation plan

The Humber Industrial Cluster Plan will help achieve the UK government's ambitions by defining how industrial emissions will change over time and providing a well-defined, optimal pathway to achieving net zero in 2040 for projects and industry in the region.

A focused and easy-to-understand marketing and promotion strategy

The existing structures have a coordinated approach, and processes are already in place. Communication strategies, however, need to be reviewed in order to prepare for the scale and scope of net zero investment.

Action 2.1: A standardised first point of contact for investment opportunities.

Existing organisations such as the Department for International Trade (DIT), Local Authorities (LAs) and Local Enterprise Partnerships (LEPs) continue to work together to ensure industrial cluster investors receive a compelling and aligned response to queries that can delivered through the existing LEP and DIT enquiry handling mechanisms.

Action 2.2: Promote the HICP website as a valuable source of information for investors looking to make decarbonisation-related investments

The volume of information available online for the region can act as a barrier for investors to access summarised, holistic and up to date information about the Humber industrial cluster.It is a priority to position the HICP as a key document and a comprehensive source of information on decarbonisation opportunities. This is the first source of information from which investors can be directed to more specific sites.

A standardised approach to investor support

Action 3: Targeted investor support

Organisations such as DIT, LAs and LEPs to ensure all investors can access to same level of support. Ideally major investors should benefit from a dedicated ‘concierge’ type of support.

Scale up resources and support to match a new and more demanding investment environment

Action 4: Increase the resources available to fund actions and activity highlighted

All the above action points will require additional resources, in particular given the amount of investment and change required to meet decarbonisation targets and ensure the Humber industrial cluster’s position as a leading region supporting the industrial road to net zero.

It is imperative to take into account the duplication of effort when discussing organisational structures for inward investment. The goal of attracting inward investment is to develop long-term relationships both directly with the investor as well as with the agencies and departments that will facilitate the investment process.

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The Humber decarbonisation investment opportunity & challenge

The Humber investment opportunity & challenge

The concentration of industry in the Humber will require significant investment to decarbonise…

The Humber region emits more CO_2 than any other UK industrial cluster – 50% more than the next largest – thus providing the Humber industrial cluster with the largest opportunity.

The transition to net zero is of vital strategic and economic importance to the region and the wider UK. Industry is a large-scale provider of high-value employment in the region. Humber is the UK's 'Energy Estuary'. It contains over 20% of the UK's electricity generation, refineries processing a significant proportion of the fuel used in this country, numerous gas terminals and storage facilities in the area. Therefore investment in low-carbon infrastructure to safeguard the cluster's future is vital.

The HICP includes estimates that circa £6bn of CAPEX and circa £20bn of total investment(1) will be required to support the cluster's decarbonisation plans, not including investment in hydrogen production. The necessary level of spend represents a significant opportunity to secure increased inward investment.

There are some barriers to securing inward investment that will need to be addressed to meet that investment requirement…

The barriers/challenges to securing low-carbon investments in the industrial sector include:

- Long investment cycles (50-year machinery lifecycles are common) meaning high-carbon processes are 'locked in' until beyond 2050.
- Uncertainty regarding future Government policy to support decarbonisation.
- Global, competitive markets lead to a strong emphasis on cost efficiency: as a higher-cost market, the UK may not be as attractive as overseas alternatives for low-carbon investments.
- Investment decisions across global investment portfolios. UK clusters can face internal competition from investment proposals in other markets, and UK managers may struggle to get sufficient 'air time' with key decision-makers around low-carbon investments.

It is pertinent to note that inward investment in net zero opportunities can be routed to a number of locations in the UK. As a global leader in offshore wind and a 'first mover' in deep decarbonisation technologies, the Humber can overcome these barriers by adopting a targeted marketing strategy to better convey the investment opportunity to large international firms operating in increasingly carbon-constrained markets.

The Humber is the largest industrial decarbonisation opportunity in the UK.

Decarbonising the Humber region is likely to require investment of circa £6bn of CAPEX and circa £20bn of total investment

Securing the incremental inward investment required for net zero will require addressing some of the key barriers to FDI identified in this report

(1) More information can be found on the Lot 1 report on modelling

The Humber investment opportunity & challenge

The Humber has a number of positive aspects to offer as a low carbon investment hub:

Real estate

The Humber region offers competitive prices for land acquisition or rental compared to other regions in the UK, which makes the region attractive. Stakeholders commented on the type of real estate and highlighted that there are more greenfield sites than brownfield compared to other industrial regions. Greenfield sites offer the advantage of not requiring demolition or site clearance as brownfield sites usually do. Greenfield sites do not need decontamination or remediation, but infrastructure installation is still required. To take full advantage of the land situation, "plug and play" developments could be a solution as investors find these offers particularly attractive. Equally, sites that have been master planned, with clarity around site service provision, are likely to be attractive to investors.

Bespoke support from the region

Some stakeholders cited the role of local authorities and other bodies such as the LEPs as an essential factor in their investment decision. Examples include: introduction to the relevant utilities providers, land owners, planning authorities and facilitating workshops.

The Humber has existing capabilities. 1720 companies have the potential to move into the carbon capture space*.

Please see HICP supply chains report ('Lot 7')

The Humber has a geographical and natural advantage in the form of access to over 80% of the UK's licensed CO_2 storage capacity.

Infrastructure

Investors can benefit from existing infrastructure. The Humber Enterprise Zone supports growth in ports, logistics and renewables and is a key tool in achieving the region's ambition to become a leading national and international centre for low carbon energy.

Investment Zones will help enhance and accelerate the delivery of the Freeport benefits and the links into the broader innovation agenda, through their offer of enhanced tax benefits and easing of planning restrictions to stimulate new economic growth. Equally the inclusion of a Virtual Innovation Campus as part of the Freeport development will give access to new innovative processes and technologies. These measures will help consolidate the Humber region at the forefront of the energy transition and facilitate significant inward investment.

The region has invested in climate-related mitigation infrastructure such as flood risk alleviation schemes, offering greater security to investors for protection of infrastructure.

Local connectivity

Humber's logistics platform consists of land, air and sea connectivity, plus the logistics services, policies and regulations that enable the distribution, transport and storage of goods to support national and international trade.

As a result of its location in a strategic region of the country, the River Humber is ideal for the movement of goods into and out of the area. The Humber has direct access to the M62 corridor and the M1's north-south connection. In addition, the region benefits from established rail freight connections. The benefits of this access include efficient cargo transportation options in terms of travel time, distance, and ultimately a reduction in CO2 emissions.

The Humber net zero investment opportunity & challenge

THE HUMBER FREEPORT

Humber Freeport will encompass a 45 kilometre area spanning both banks of the Humber. Within the outer area there are Customs Zones and Tax Zones, each with different advantages aimed to stimulate economic growth. The Humber Freeport will deliver investment on specific sites benefiting from tax and customs incentives.

The Freeport has the potential to support low carbon hub development through:

Making trade processes more efficient, accelerating and supporting the decarbonisation of industry and the net zero economy in the region and acquiring specialist expertise to secure the Humber position as a net zero leader.

Facilitating the creation of net zero jobs and supply chain. The local economy will grow and facilitate further investment in a decarbonised world.

TAX ZONES

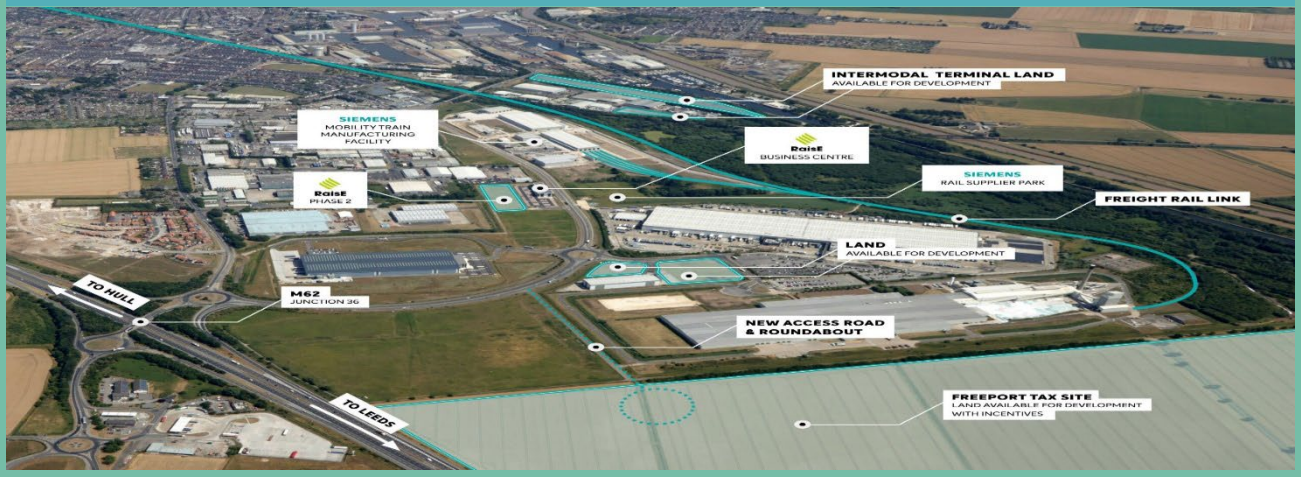
There are several advantages to being located within a new tax zone. These zones are designed to attract new businesses and stimulate investment in the area. Benefits include accelerated capital allowances, relief from stamp duty and land taxes, relief from business rates and employer's National Insurance contributions for the first three years of operations.

Goole Tax Zone / Freeport

The Goole Tax Zone site is a large undeveloped site adjacent to the existing Enterprise Zone and benefits from the same excellent transport links.

Invest East Riding are working with ARUP to produce a Local Development Order, which will enable investing businesses to benefit from a simpler planning process in order to reap the benefits of the Freeport Tax Site quicker. This process will create an overall masterplan which will allow businesses to see the potential opportunity and options for locating here.

There are many exciting projects happening in the area including the £25m Goole Town Deal to regenerate the town centre, along with a district heat and steam network which will reduce the area's carbon footprint and promote energy efficiency.



The Humber net zero investment opportunity & challenge

Hull East Tax Zone / Freeport

Siemens Gamesa are already located in this area.They employ 1,000 local people and continue to grow. They have invested significantly over recent years as the offshore wind sector develops and are now doubling the size of their facility to manufacture the next generation of offshore wind turbine blades. Future proofing operations and enhancing the longevity of the industry in the area is testament to the company's commitment to the city. Suppliers and sub-contractors also operate around the port area such as A2Sea and ALE.

Significant developments in hydrogen production are also underway to the east of the city with Equinor developing facilities to produce hydrogen from natural gas in combination with CCS.

Hull is home to one of the largest energy from waste plants in the UK that produces enough energy to power 43,000 homes and recycle 250,000 tonnes of waste per annum.

The University of Hull combines academic expertise with energy industry know how at the Aura Innovation Centre where businesses can access innovation and collaboration support. A dedicated Masters programme provides essential knowledge for the industry, where 27,000 new jobs are expected by 2030.

Plans for the Yorkshire Energy Park, creating 4,000 jobs and providing low cost energy, data resilience and superfast broadband for its occupiers, are in the pipeline. Leading energy supplier E.ON, Asanti Datacentres, L&G Investment Management, SSE Utilities, BYD, Dell, WMG and local education provider Hull College, have already announced their support for the energy park plans.

The Humber net zero investment opportunity & challenge

Hull East Tax Zone /Freeport (ctd)

The Able Marine Energy Park (AMEP) is a fully consented project solely owned by Able Humber Ports Ltd that will be a bespoke port facility for the renewable energy sector, particularly offshore wind. It will represent a c £450m investment and covers an area of c 331 ha and will feature 1,349m of new heavy-duty deep-water quays. AMEP is a very simple concept based on industrial logic that will meet the needs of emerging renewable energy sectors. For a sector where proximity to market is paramount, it makes sense to offer a 'big space in the right place', with substantial quays built to accommodate the deployment of large industrial components to the North Sea and beyond – all this, in the heart of the largest offshore wind market in the world.

AMEP initially offers 217 ha of developable land (phase 1 – could increase to 331 hectares). It is designed specifically for the marine renewables sector providing a multi-user facility for the manufacture, storage, assembly and deployment of next generation offshore wind turbines and their associated supply chain(s). AMEP quays have been designed following extensive liaison with the offshore wind industry (developers, manufacturers and installation vessel operators). They will not be affected by higher current velocities that occur in other parts of the estuary providing 24-hour access to AMEP. The facility will be fully fit for purpose, future proofed, and particularly suited for the deployment of new generation jack-up installation vessels. The quays are suitably designed for importation of components and raw materials.

Customs Zones

These allow port operators and other companies to defer tax duty and import VAT on goods.

There are several new proposed customs zones to be located inside Humber Freeport, including the four main ports of Grimsby, Immingham, Hull, and Goole, as well as British Steel's facility and several other smaller terminals along the Humber. These sites are now be undergoing an approval process by Government.

03

The benefits of securing inward investment

Securing the additional FDI required has the potential to bring economic benefit

Countries receiving inward investment gain in a number of ways, including:

- An increase in GDP, initially through the investment itself, typically followed by a positive multiplier effect on the receiving economy. The final increase in national income is greater than the initial injection of investment.
- The creation of jobs.
- An increase in productive capacity.
- On some occasions, producers have access to the latest technology from abroad, linked to the inward investment.
- Less need to import because goods are produced in the domestic economy.
- The positive effect on the country's capital account – inward investment represents an inflow (credit) on the capital account.
- Inward investment can augment local investment, and can help accelerate the process of development at previously undeveloped sites e.g. if inward investment allows a large greenfield site to be developed which in turn incentivises the landowner to organise wider site infrastructure.
- Conduit for domestic firms to access international markets and integrate in global value chains.

Table 1.1 below summarises the economic impacts of international investment in the UK across Capex and Employment based measures. DIT has identified manufacturing as a sector where the Capex measure is most appropriate: the Employment measure is shown for information.

Table 3.1: UK Economic indicators impact of a 1% increase in foreign direct investment (FDI) on key economic measures

FDI Measure	GVA	Employment	Average Annual Wages	Apparent Labour Productivity (ALP)
Capex FDI	0.094%	0.084%	0.045%	-
Employment FDI	0.243%	-	0.106%	0.031%

Source: Understanding FDI and its impact in the United Kingdom for DIT's investment promotion activities and services: Phase 2 Analytical report, Department for International Trade (2021)

As is shown in the table above:

- The Department for International Trade's analysis estimates that a **1% increase in FDI capital expenditure leads to a sectoral increase in GVA of 0.094**% for a sector such as manufacturing where the Capex FDI measure is appropriate.
- FDI into the UK in 2019/20 created around 56,000 new jobs through 1,852 projects. **DIT analysis found that a 1% increase in FDI leads on average to an increase in employment of 0.084%** based on the Capex FDI measure.

The work on FDI undertaken by the UK Government is reinforced by studies from the IMF concerning the economic multipliers from low carbon/green investment internationally. The economic multipliers from green investments are estimated to by up to 3x greater than the levels for investment that are not classed as green (see following page).

Sources:
Trade, D. for I. (2021, August 25). DIT Inward Investment Report 2020 to 2021.
The OECD. (2020). Foreign direct investment (FDI) - Inward FDI flows by industry - OECD Data

Securing the additional FDI required has the potential to bring economic benefit

Recent research by the IMF has shown that investment on carbon-neutral activities generates more economic activity than equivalent investments in non-environmentally friendly investments. Below we provide details of the IMF's analysis on this subject, and estimate the economic value generated if the IMF's green multipliers are applied to a selection of infrastructure projects in the Humber.

Table 3.2: IMF assessment of economic multipliers arising from green/low carbon investment

Impact	Horizon Green Energy Investments Multiplier	Non-Eco-Friendly Energy Investments Multiplier Impact
1 year	1.68	0.65
2 years	1.61	0.64
3 years	1.53	0.61
4 years	1.45	0.58
5 years	1.39	0.55

Source: The International Monetary Fund, Building Back Better: How Big Are Green Spending Multipliers? study.

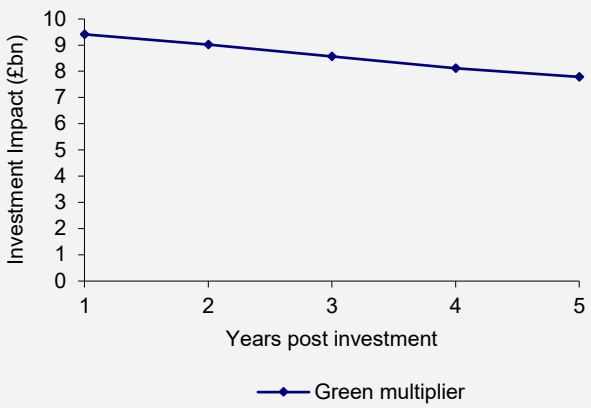
Based on the IMF multipliers the graph shows the differential value impact that can be secured from net-zero/green investments vs non-green investments.

We assessed the multiplier effect of the following investments (assumed to meet the IMF's definition of a 'green investment'):

- The Humber Low Carbon Pipelines (various parties) - £1bn private sector investment
- Rough Hydrogen Storage (Centrica) - £1.6bn private sector investment
- Viking CCS CO_2 Transport and Storage (Harbour Energy) - £3bn across the full CCS chain

Project data taken from Humber 2030 Vision report

Figure 3.1: Indicative multipliers from £5.6bn green investment in Humber



Sources include:

Understanding FDI and its impact in the United Kingdom Understanding FDI and its impact in the United Kingdom for DIT's investment promotion activities and services Phase 2 Analytical report.

Additional benefit of inward investment

The Humber region has the opportunity to build on the existing supply chain infrastructure and its workforce. Industry and public bodies are working together to be prepared for the scale of growth needed in terms of supply chain and skills to meet net zero requirements.

Supply Chains

Future supply chain requirements

- Net zero represents a major opportunity for the region to attain a sustainable, future-proofed growth path for its industrial base. Timelines for the creation of a net zero cluster in the Humber are challenging, with the ambition of achieving carbon neutrality by 2040. The coming years will therefore be a period of intensive activity and high demand for the goods and services needed to drive decarbonisation.
- There will be a large increase in parts and materials demand from the Humber industrial cluster as net zero projects move into their development and construction phase. There is significant overlap in the equipment demands of different technologies e.g. CCUS equipment, hydrogen production plants and low-carbon generation technologies will all require turbines and compressors which will heighten demand and could highlight supply constraints.
- Wider UK low carbon projects (such as those in other clusters and Hinkley Point C) will increase pressure on supply chains, at a time of adjustment to new global realities e.g. Ukraine war, COVID-19.
- The HICP supply chain report assesses the readiness of supply chains to meet the demands of the decarbonisation programme in the Humber industrial cluster and identifies steps that need to be taken to ensure local supply chains play their full role in creating a net zero cluster.

Job creation

- The HICP skills report estimates the number of jobs created by the decarbonisation opportunity to be 22,800 direct jobs by 2040 in the Humber.
- There is an opportunity to increase collaboration between training providers and industry closing the gaps between education and the evolving labour market.
- The Humber industrial cluster could further benefit from Government schemes and funding opportunities that support the energy transition.
- Decarbonising the economy presents an opportunity to increase the number of skilled and well-paid jobs in the region.
- The skills developed in the region are likely to be in demand as other countries develop their industrial decarbonisation journeys.

More information can be found on the HICP reports on skills and supply chains

Additional benefits of inward investment

The evidence around the economic benefits of investment in the decarbonisation of the Humber region e.g. multiplier effects has been shown earlier in this document. However, the position of the Humber region as an "early mover" on industrial decarbonisation provides some additional benefits as described below.

Public infrastructure

- The creation of low-carbon infrastructure and services has the potential to attract further investment from energy intensive industries in the future.
- The provision of CO_2 storage facilities and a CO_2 transportation network on a third-party access basis means that high emissions processes have access to a decarbonisation facility in Humber in a similar way to other utilities, communications or waste management facilities The third party access approach is likely to be cost competitive compared with the standalone decarbonisation investments that might be required in other locations.
- The hydrogen produced could be used to decarbonise heavy industry, transport, heating and power throughout the Humber region and beyond.

A decarbonised economy in line with net zero targets

The ambitious plans for decarbonisation of the Humber industrial cluster and being an early global mover has the potential to develop long-term benefits, in particular:

- As manufacturing and supply chains become established in the Humber region, there is the potential to export knowledge and technology to other UK regions and internationally as the decarbonisation journey accelerates globally (availability of the freeport facilities may be particularly helpful for access to export markets).
- The UK's unique geology and North Sea infrastructure offers the chance to decarbonise British industry through mitigating millions of tonnes of CO_2 emissions through compression, transportation and storage in offshore underground stores.
- In the future, there is an opportunity that CO_2 will be imported to inject into CO_2 storage sites in the region. In addition, there is the possibility that green hydrogen will be exported.

04

Segmentation of investment opportunities in the Humber

Segmentation of investment opportunities in the Humber

The decarbonisation opportunity for the Humber has the potential to benefit many sectors. The initial stages of decarbonisation infrastructure development are expecting to support three key areas of development specifically CCUS infrastructure, decarbonisation of power generation and the development of storage facilities. Examples of the opportunities are described below.

	New technologies and network expansion	Power Generation	CO_2 Capture & Storage Energy Storage
Technologies	• CCS / CCUS pipeline and abatement technologies • Hydrogen pipelines • Expansion of existing electricity networks • Further private wire network solutions	• Biomass • Hydrogen production • Solar • Wind • Thermal • Combined Heat and Power	• CCUS/ CCS storage • Hydrogen storage • Electricity storage
Projects	Humber Zero will be one of the UK's first large-scale carbon capture projects with the potential to remove up to 8m tonnes of carbon dioxide (CO_2) from emission to the atmosphere by 2030. CO_2 is produced when industrial plants in the area such as VPI Immingham and Phillips 66 Humber Refinery burn fossil fuels is burned. Humber Zero will remove the CO_2 produced from the atmosphere. The Humber Low Carbon Pipelines project forms the backbone of the Zero Carbon Humber vision to become the UK's first net zero carbon cluster by 2040. The proposed project aims to deliver a new onshore network of pipelines to transport the captured CO_2 emissions from the region's industrial emitters for safe storage in the North Sea, and enable industries to fuel-switch from fossil fuels to low-carbon hydrogen.	The Gigastack renewable hydrogen project will facilitate the development of a UK renewable hydrogen technology hub. Drax Power Station generates renewable electricity using biomass. This is soon to be combined with CCS to create a BECCS project with negative emissions. The site near Selby in North Yorkshire provides some 14 terawatt hours per year (TWh) or enough electricity to power the equivalent of five million homes. H2H Saltend is Equinor's flagship 600 megawatt (MW) low carbon hydrogen production plant with carbon capture, which offers to reduce the site's CO_2 emissions by nearly 1m tonnes annually, representing a 30% reduction in the Saltend Chemicals Park's total current carbon emissions. The Humber Zero project has plans for large-scale hydrogen production, with potential to produce up to 173,000 tonnes each year. This will happen at a brand new facility adjacent to the current VPI Immingham power station. One of the gas turbines at the power station will be converted to run on hydrogen, and will provide decarbonised electricity for industry and up to a million homes.	From 2027, CO_2 captured on the Humber will be permanently stored in depleted gas reservoirs 9,000ft below the North Sea and other geological features such as saline aquifers. Opportunities for the development of hydrogen storage at the Rough facility may also have the potential to develop as the hydrogen market matures. SSE Thermal and Equinor are actively developing Keadby 3, which could become the UK's first power station equipped with carbon capture technology by the mid-2020s. The UK Government recently announced its ambition for the UK to become a world-leader in CCS technology, with a target to remove 10MT of CO_2 by 2030. Keadby 3 is expected to offset at least 1.5m tonnes of CO_2 – 15% of the Government's target.

Segmentation of investment opportunities in the Humber

	New technologies and network expansion	Power Generation	CO_2 Capture & storage Energy Storage
Projects (ctd)	The UK government has selected Prax Lindsey Oil Refinery as one of 20 projects to proceed to the due diligence stage of Phase 2 of the Cluster Sequencing process. As part of its CCS project, the flue gases from refinery processes will be captured by a dedicated amine-based unit. The Associated British Ports are seeking to construct a new green energy terminal within and adjacent to the Port of Immingham. Air Products would be the first customer to use the new facility.	Humber H2ub project is a proposed large scale low carbon hydrogen production facility at Uniper's Killingholme site, being delivered in partnership with Shell. The planned development will include blue hydrogen production capability with a capacity of up to 720 MW, using gas reformation technology with carbon capture and storage (CCS). The proposed Keadby Hydrogen Power Station (SSE + Equinor), located in North Lincolnshire, could be the world's first 100% hydrogen-fuelled power station, producing zero emissions at the point of combustion. Centrica has restarted injecting gas at the Rough storage facility off East Yorkshire coast with a long-term potential goal is to repurpose Rough field into the world's biggest methane and hydrogen storage facility. Triton Power, through its Hydrogen to Humber (H2H) partnership, will generate power with reduced emissions by converting its natural gas fired CHP station at Saltend to burn hydrogen, initially as a 30% blend until there is a functioning hydrogen economy which will enable a 100% hydrogen conversion.	ZerCaL250 is a collaboration using Origen's zero-carbon technology and Singleton Birch's lime production know-how. The proposed Aldbrough Hydrogen Storage (SSE Thermal +Equinor) facility could be in operation by early 2028, with an initial expected capacity of at least 320 Gigawatt hours (GWh), which is enough to power over 860 hydrogen buses a year. Viking CCS will develop infrastructure in the Humber region to transport and store CO_2 in secure offshore storage sites. The network is targeting a reduction of 10 million tonnes of UK greenhouse gas emissions per annum by 2030, with first capture planned for as early as 2027. The carbon capture, transport and storage network project is led by Harbour Energy.

In addition, it is important to note that the development of decarbonisation infrastructure, while major projects in their own right, also provide low carbon platforms for other industries in the region to decarbonise. Access to low-carbon energy and the facilities to remove and store CO_2 on a shared infrastructure basis will make the region attractive for traditionally carbon-intensive processes.

Segmentation of investment opportunities in Humber

As part of the cluster's net zero pathways, Element Energy identified major regional industrial sites. This was a sectoral split between power generation, combined heat and power, iron and steel, refining, fuels, cement, and chemicals. Below we examine some of the key existing and emerging sectors likely to present decarbonisation investment opportunities.

Electric transport and supply chains

The Humber Refinery is the only European facility producing battery anode coke, which forms a critical component for lithium-ion batteries used in electric vehicles (EVs) and in consumer electronics.

The current production of battery anode coke is sufficient for batteries for placing 1.3m EVs on the road every year.

By 2024, all UK and EU-produced EVs are required to have at least 55% of the vehicle content by value produced domestically. Phillips 66 Limited is actively working to support this through its work with the Advanced Propulsion Centre by conducting a feasibility study into building a battery anode production facility and battery recycling capability in the UK.

Chemicals and refineries

Two major chemical emitting sites are considered as part of the cluster plan: the Saltend Chemicals Park and Tronox Pigment. Emissions from the chemicals sector are relatively small at 0.7mtCO_2e/pa. However, effective decarbonisation of chemicals processes in Humber is likely to provide reference cases for chemicals decarbonisation in other jurisdictions.

Refineries

Phillips 66 Ltd owns and operates 18% of UK's oil refining capacity. The Phillips 66 Humber Refinery is located in North Lincolnshire and has a processing capacity of 221,000 barrels per day and has opportunities to extend its existing biofuel production.

In the Humber Region refining produced emissions of c4.5MtCO_2e in 2019.

Iron and Steel

In 2020, the steel industry supported 33,400 jobs in the UK in 2019, 0.1% of all UK jobs according to the 2020 House of Commons report on the steel industry.

British Steel operates in Scunthorpe and other UK locations. Currently steel facilities account for 4.5mtCo_2e/year of emissions in the Humber industrial cluster.

In 2019, the UK produced 7m tonnes of steel; China produced 996m tonnes. The UK has an opportunity to increase its share in the market.

With new rules and tax incentives that favour greener products, the steel industry could benefit from the decarbonisation infrastructure in the region.

Manufacturing

The Humber region can benefit from increased demand for the manufacture of decarbonisation infrastructure equipment and also green energy produced products.

An example of this is Siemens Gamesa Renewable Energy. The company is the result of a merger between Siemens Wind Power and Gamesa.

In Hull, the facility located on Sir William Siemens Way at Alexandra Dock is currently having its footprint doubled with a further 41,000 sq. m added as it scales up to handle the demands of the industry. The expansion will lead to significant job creation in the region.

05

Investment community and key decision-making criteria

Key investor groups

Overview

In this section, we present our analysis of key investor groups that our research indicates are involved in, or interested in decarbonisation and net zero project investment. The groups of investors generally fall into UK-based investors, or international investors that either may be interested in the UK or have a presence in the UK already. In both categories, some already have a presence or investment in the cluster.

The investment community approach will vary depending on various factors, two of the more relevant factors for the Humber decarbonisation strategy are:

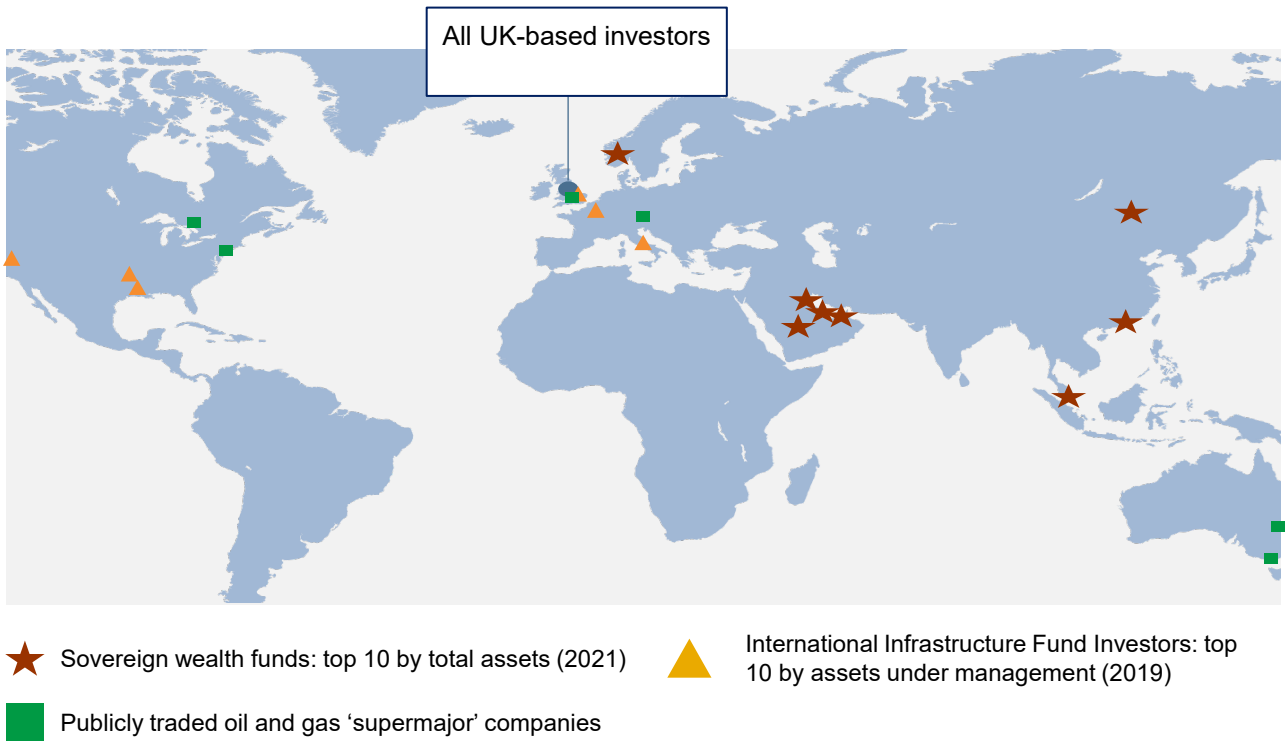
- The presence in the region
- The net zero role: net zero facilitators or industries looking for a net zero transformation

The strategies used to attract the different groups will differ.

Investors with existing assets have established relationships and a deep understanding of the region and are currently the major group investing in the net zero economy in the Humber. Maintaining these established relationships and providing critical players with the confidence that the Humber region will continue to grow and offer an attractive long-term environment for investors will be vital. It is crucial to maintain relationships and facilitate cross-sector synergies where possible.

Investors with little or no knowledge of the region will compare the Humber with international and UK clusters. Targeted marketing, communication and engagement campaigns are therefore critical. These investors will also require additional support from partners such as the Department of International Trade (DIT) to make final investment decisions.

Fig 5.1: Map showing the geographic spread of key investor groups



Key investor groups (UK)

Investor Segment	Analysis of Investment Considerations	Examples
UK-owned trade and industry investors	'Green financing', or sustainable investment represents a large and growing share of UK-based investment activity, with shareholders, account owners, and the general public increasingly demanding their investment portfolios are driving decarbonisation and other social causes. The Investment Association has found that 49% of the £9.4trn in UK assets were integrating Environmental, Social and Governance (ESG) targets into their processes in 2020. **Key investment drivers:** • Economic outlook (projected GDP growth, inflation) • Political volatility, including whether asset values are 'safe' from political interference • ESG credentials of investment decisions	• SSE • BP
UK-based development investors	Development (or 'early-stage'/seed) investors, including venture capital, generally operate through financing early stages of projects, and then selling shares as projects approach maturity, often to larger industry investors and funds. Venture capital investment was at an all-time UK high in Q1 2022, with a spike in ClimateTech investment following COP-26.(1) There is likely to be some appetite for de-risking of portfolios given current economic uncertainty, and some diversification into later-stage project investment. **Key investment drivers:** • Investment proposition (demonstrated through effective management/pitching) • Size of market (growth potential) • Regulatory, political and economic risk	• Octopus Investments • BGF • Intermediate Capital Group • Apax partners
UK-based pension and infrastructure funds	Pension funds have historically invested significant shares of their overall portfolio in infrastructure, viewing it as a relatively safe asset offering stable long-run returns. Infrastructure funds are simply funds focussed on long-run infrastructure and public utilities investment. In the past decade, a number specialising in low-carbon infrastructure investment have materialised. **Key investment drivers:** • Stable cash flows often associated with regulated long-term utilities, including sensitivity to political volatility • Diversification (relative to overall portfolio) • ESG (driven by rising engagement by pension-scheme holders in their portfolios)	• Universities Superannuation Scheme • BT Pension Fund • Railpen • Brunel Pension Partnership • Standard Life • Aviva investors • Legal and General • Schroders • Greencoat • Renewables Infrastructure Group • JLEN Environmental Assets • East Riding Pension Fund (ERPF)

(1) The OECD. (2020). Foreign direct investment (FDI) - Inward FDI flows by industry - OECD Data

Key investor groups (International)

Investor Segment	Analysis of Investment Considerations	Examples
International Infrastructure Fund Investors	The global infrastructure investment market has expanded significantly in recent decades and has more recently focussed on green/decarbonisation-related investment opportunities. **Key investment drivers:** • Stable cash flows often associated with regulated long-term utilities • Clarity and stability over policy regulation • The ability to sell-on an asset in some cases after a 3-5 year investment horizon • Longer-term arrangements and contracts in place to manage volume risk in the operating entity Investment decisions are often made on a global basis, so a UK region needs to make a competitive investment case.	**Top 10 by Assets Under Management (€, 2019)** • Macquarie • Brookfield • GIP • M&G • IFM • Allianz • BlackRock • AMP • MetLife • InfraRed
International (non-state) Oil and Gas, and Industrial Companies seeking to decarbonise	A number of non-state international players (often with existing UK bases) appear to consider UK low-carbon investments as an opportunity for learning about technologies and low-carbon policy development. **Key investment drivers:** • The extent to which the UK is leading decarbonisation policy and investment regions are leading deployment • Stability of government and investment climate • Clarity over national decarbonisation policy • Macro-economic stability and policy and ability to make a return (taking into account any government support for decarbonisation)	**Oil and gas 'supermajors'** • ExxonMobil • Shell • BP • Chevron Corp. • Conoco Phillips • Total • ENI
Sovereign Wealth Funds	Several countries (in particular those with significant domestic oil reserves) hold substantial reserves of investable capital in 'Sovereign Wealth Funds'. **Key investment drivers:** • Providing returns which are diversified relative to the activities that their home economies depend on • Diversification of overall portfolio • Securing additional benefits for the home economy (e.g. learning and export agreements) • Criteria vary but often investments are used as a tool for a longer-term asset backed position	**Top 10 by assets ($, 2021** 1. Norway 2. China 3. Abu Dhabi 4. Kuwait 5. GIC (Singapore) 6. Saudi Arabia 7. Hong Kong 8. Temasek (Singapore) 9. Qatar 10. China (Social Security)

Sources include:

https://aiimafrica.com/media/media-centre/top-100-infrastructure-managers-2020-a-big-balancing-act/

Top 100 Largest Sovereign Wealth Fund Rankings by Total Assets - SWFI (swfinstitute.org)

Investment decision criteria

The basis for inward investor decisions varies widely between investors and opportunities which makes a systematic analysis of investment criteria challenging. However, it is clear that there is a number of key considerations which typically inform investment decisions.

These key considerations are outlined below

- **Ability to make a return in line with the investors' threshold criteria:** projects are typically valued by investors on the basis of the Internal Rate of Return (IRR) on the project or the investors equity (shareholding) in the project. Most investors retain confidentiality regarding their target IRR expectations from projects.

- **Identifiable and manageable investment risk in line with the investor's requirements:** considerations here will include overall assessment of country risk, risk associated with the specifics of any Government policy impacting the investment (such as CCUS funding and business models from UK Government in the context of projects in the Humber). Further considerations include the extent of any local support, as well as project specific risks and the extent to which they may be mitigated. Investors will be seeking to align the returns from the investment with their assessment of the risks associated with making the investment.

- **Organisation/fund specific investment requirements:** in targeting marketing activity to investors, researching and alignment with any investor specific investment criteria is essential. Criteria for investors can be "green projects" only, length of investment term, and ease of exit from the investment after a prescribed period. A wide range of criteria can apply and it is important to understand these and tailor the investment opportunity appropriately.

- **Opportunities to learn through the investment:** international trade investors will consider investment in leading projects in other countries if they see opportunities for corporate learning. Through their participation as an investor in a project they are seeking to secure learning which can be deployed in their home country or in other jurisdictions where they have investments.

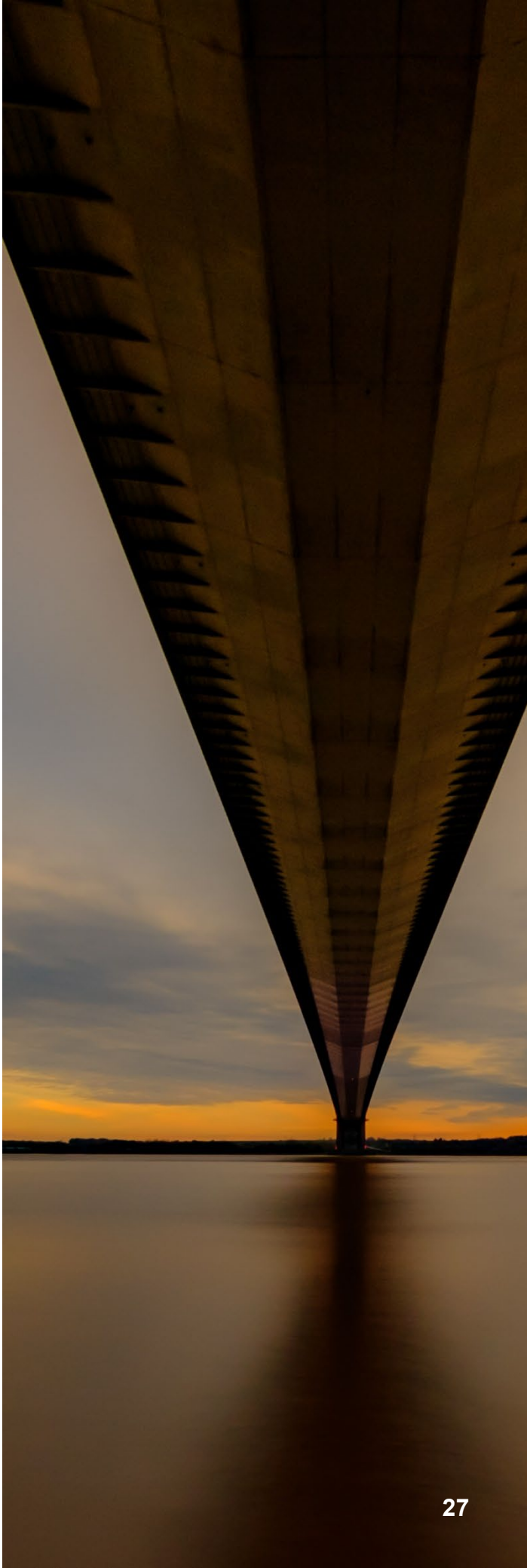
- **Stage of development of the project**: when promoting inward investment opportunities, it is important to align the development of the opportunity/project with the investment philosophy of the investor. Different classes of investors target different stages of project development. Early stage and high-risk projects will tend to appeal more to development capital, project developer companies and, potentially, start-up and venture capital. Established assets with more stable incomes can often seek pension fund or infrastructure fund financing.

- **Access to grant funding and other Government support:** investors will consider the extent of Government support for the project and the impact of that support on either the level of returns the investor can make or the impact on the risk associated with those returns.

Potential investment barriers

Our interviews with organisations in the region have identified a number of issues that might be considered as potential barriers to investment in the region, including, for example:

- **Profile of the Humber region in comparison with other regions:** as described in the next section of this report, there is a large number of other potential CCUS investment opportunities and ensuring the Humber secures appropriate profile will be critical.
- **Lack of visibility for investors on government support over the lifecycle of a project:** feedback from interviews indicates that there is hesitation to make investments in early-stage projects as the nature and extent of government support through the development and operation of the project is unclear. Uncertainty as to whether a project would secure funding in later stages serves to restrict commitment to a project in the earlier stages.
- **Security of offtake for low carbon services:** interviews identified that current uncertainty as to volumes and revenues for carbon reduction initiatives (i.e. the developer has to manage all offtake risk) represents a high risk which makes it difficult for many investors to commit.
- **Land access and availability in the Humber region:** land is considered less expensive in the Humber in comparison to other UK regions. Despite this, developers face some challenges in acquiring real estate because much of the land is privately owned and not fully serviced. Project developers and investors find Humber's 'plug and play' model, where available, highly attractive.
- **Power generation and network distribution threshold:** currently all generation with an export capacity of greater than 100 MW requires a Generation Licence. Generation between 50 MW and 100 MW capacity may be given an exemption from this requirement by the Secretary of State for Energy and Climate Change. Similarly, all networks surpassing 100 MW capacity need to obtain a distribution licence (a costly and resource-intensive process).



06

Competing regions

Competing regions

The international investment community tends to consider investment activity on a regional or global basis. As a result, the Humber industrial cluster is effectively competing for inward investment with clusters elsewhere in the UK and also internationally.

A sample of competing regions is described below:

South Wales Industrial Cluster (SWIC), UK	SWIC is a major industrial cluster of companies in the region stretching from the Pembrokeshire Coast to the Severn Bridge along the M4 motorway corridor. The backbone of SWIC is the oil refinery and proximate heavy industry/CO_2 emitters at Milford Heaven, and CO_2 capture and hydrogen production projects at Swansea and Port Talbot. Around 85,000 people are employed in manufacturing in this region.
Teesside Cluster, UK	The Teesside cluster has easy access to carbon storage sites in North Sea, with a capacity for 6m tonnes of storage per annum. This offers the opportunity to store other clusters' and dispersed sites' CO_2 Teesside is very heavily dominated by the chemicals industry (90% is chemicals and fertilisers). Stakeholders mentioned the political and regional coordination and unity as an advantage.
North West England and North Wales (HyNet), UK	Another Track 1 cluster, HyNet, is planned to service a region that has a high concentration of manufacturing and industrial energy users in the UK. 350,000 people are employed in almost 15,000 manufacturing businesses. Dominant sectors are automotive, aerospace, pharmaceuticals and chemicals and productivity is more than 115% of the national average. HyNet intends to initially service the heaviest CO_2 emitters and proposed blue hydrogen producers, many of which are located around the Mersey estuary, such as Stanlow oil refinery. With nuclear and shipbuilding industries providing major sources of regional employment in Cumbria there is support for developing an industry around pink* hydrogen production and use of depleted Morecambe Bay gas fields for CO_2 storage. * *Pink hydrogen refers to hydrogen which is produced through electrolysis powered by nuclear energy. In some cases, this production form is also referred to as purple or red hydrogen.*
Grangemouth, UK	The Grangemouth industrial cluster is focused around the Ineos refinery complex, which annually produces around 2m tonnes of chemical products and has Scotland's sole crude oil refinery. The cluster includes the proposed site of Summit Power's Caledonia Clean Energy Project, which has recently completed an interim engineering and design assessment and identified transport and storage options. ALIGN-CCUS (an international partnership to transform 6 industrial regions into low-carbon centres) will identify opportunities for cost reductions through shared infrastructure and optimised transport and storage plans.

Competing regions

Rotterdam, the Netherlands	The Rotterdam Port comprises five large refineries, production plants for hydrogen, industrial gases, and a variety of chemicals, coal and gas-based power generation and waste incineration. The ALIGN-CCUS project will develop plans for a centralised facility for the decarbonisation of natural gas in the Rotterdam port area in combination with nearby offshore storage for the separated CO_2 and increased hydrogen use in power generation and industry. This would replace the use of coal in power plants within the cluster. Rotterdam is the main port for large parts of Germany, as well as a major port for Central and Eastern Europe and Switzerland. As the port is publicly owned, it is easier to implement and enforce environmental policies.
Greenland, Norway	A number of process industries are located in the Greenland area of south-eastern Norway, including petrochemicals, ferro-manganese, cement and fertilisers. Norcem's cement plant and Yara's ammonia plant are the two largest CO_2 sources in the region. EGE's waste incineration plant is also located nearby, in Oslo. A recent study has already identified the Greenland cluster as being ideal for the development of a multi-user CO_2 infrastructure, which would be both economically and operationally efficient. ALIGN-CCUS will draw up engineering plans for an CO_2 surface storage facility for handling CO_2 from multiple sources.
The Oltenia, Romania	The Oltenia industrial cluster in South West Romania comprises mainly power generation, aluminum production and a soda production facility. Energy production in this region uses local lignite and provides nearly a quarter of the country's electricity production. The blueprint for the region, developed by ALIGN-CCUS, will identify the most feasible CO_2 transport routes for future captured CO_2 and will investigate storage options, including the possibility of using the CO_2 for enhanced hydrocarbon recovery in the region.
North Rhine-Westphalia, Germany	North Rhine-Westphalia is Germany's most populated state and the focal point of industry and energy production. It is responsible for one third of the country's CO_2 emissions. Three quarters of electricity generation comes from coal and lignite-fired power plants, and the region also has a large number of manufacturing industries, such as iron and steel, cement and chemicals. ALIGN-CCUS will evaluate carbon capture and utilisation as a multi-sector CO_2 mitigation option across the region.

Humber industrial cluster's comparative position

In the analysis presented below we have assessed the Humber industrial cluster's relative attractiveness versus other industrial clusters against a series of criteria. If a criteria is marked as green it is an area where investors may regard it favourable for the Humber, amber and red less favourable versus other clusters.

Theme / area And criteria	Humber
Institutional Framework	A successful record of manufacturing and industry in the Humber region, as well as Government support through the Track 1 CCUS process are key strengths. Being a part of the Government Track 1 process offers advantages in terms of timing and delivery compared to other UK sites. There has been the rapid progress made in the decarbonisation of the power sector, which is favourable for all UK clusters in comparison with some international clusters. Government support for CCUS is favourable recognising that there are further details of the policy to be worked out. The Humber industrial cluster being Track 1 for CCUS is regarded favourably.
Government Funding	Some EU regions are likely to seek EU funding and support. Therefore, further articulation of the UK Government proposition for CCUS, including the business model, the mechanism for accessing the transportation and storage network, and development timescales is particularly important for investors to understand how the UK proposition compares with the EU.
Supply Chain Skills And Existing Infrastructure	As described earlier in this document, the Humber industrial cluster has a range of favourable factors in terms of Freeports developments and existing skills and supply chains. Existing infrastructure provision in different regions will vary significantly. A challenge for the Humber industrial cluster will be to articulate to investors the commercial benefits of the Humber in terms of supply chain and other supporting infrastructure, and to ensure skills development matches the upcoming increase in labour demand (see HICP skills report).
Size of The Cluster Opportunity	The Humber region emits more CO_2 than any other UK industrial cluster – 50% more than the next largest – thus providing us with the largest opportunity to deliver decarbonisation initiatives at commercial scale. We will harness the collaborative power of regional industry to develop low carbon infrastructure and showcase the way forward to a low carbon future.
Coordinated and clear message. Clear contact point / entry market for investors	Whilst the range and scale of projects in the Humber is part of its strength, other areas benefit from more concise messaging and a joined up approach to targeted marketing activity. It is therefore important for the Humber to develop a compelling and aligned investment package that is recognised and endorsed by key investment partners. The ability to further enhance the enquiry process and invest in promotional activity and supporting materials will help attract further cluster investors.

Humber industrial cluster's comparative position

In addition to the analysis presented on the previous page, we have considered the strength of the key sectors/industrial market segments in the Humber versus other clusters.

Sector/ industrial segment	Cluster commentary
Cement	Most competing clusters have the presence of cement or concrete manufacture within or proximate to the cluster, largely reflecting that much cement manufacture is geographically dispersed and close to its markets rather than centralised production. The Humber may need to demonstrate how decarbonisation infrastructure can add long-term value to the energy-intensive cement industry if it is to attract further investment.
Chemicals	The development of decarbonisation infrastructure for the chemicals sector in Greenland in Norway, Rotterdam and Grangemouth where there are established industries has the potential to be a competitive challenge for the Humber.
Iron and steel	A key competitor cluster for the decarbonisation of the iron and steel industry is potentially North-Rhine Westphalia.
Glass and minerals	As with cement, glass and minerals tend to be distributed across many clusters including soda production in Romania. The Humber's existing glass or minerals plants could benefit from the decarbonisation infrastructure and to accelerate their net zero journey. Early mover advantages could position the cluster as a relatively more attractive cluster proposition.
EV	The development of EV and battery manufacturing is becoming increasingly competitive. Facilities already exist in the UK, Germany and Romania for example. While the market for EV production location is competitive, expected growth is also high. Humber's competitive position can draw on decarbonisation infrastructure, supply chains and the existing presence of the chemicals industry in the supply chain such as Phillips 66.
Refineries	A number of competing clusters have refineries already within the cluster. The Humber existing refineries could benefit from the decarbonisation infrastructure and accelerate their net zero journeys. Early mover advantages, particularly around hydrogen, could position the Humber as a relatively more attractive cluster.

07
Recommendations

Action plan

A coordinated regional strategy

Action 1: Formulation of regional decarbonisation plan

This action is covered by the Humber Industrial Cluster Plan. It will provide confidence in the UK government's ambitions, encompassing how industrial emissions will change over time and provide the region's projects and industry with a well-defined, optimal route to achieving true net zero in 2040.

Interviews identified an opportunity for coordinated messaging on low-carbon infrastructure and manufacturing to attract more inward investment into the region. A collaborative communication strategy for the Humber region is critical in competing for investment with other regions. Targeted communication about the investment opportunity arising from decarbonisation in the cluster will be required to reach international investors.

A targeted and easy-to-understand marketing and promotion strategy

There are already processes in place, and the existing structures have a coordinated approach. However, the communication strategy needs to be clearer.

Action 2.1: A standardised first point of contact for investment opportunities

Existing structures such as DIT, LAs and LEPs continue to work together to ensure industrial cluster investors receive a compelling and aligned response to queries that can delivered through the existing LEP and DIT enquiry handling mechanisms.

Action 2.2: A marketing strategy to promote the HICP website as a valuable source of information for investors looking to make decarbonisation-related investments

The sheer volume of information available online for the cluster can act as a barrier for investors to access summarised, holistic and up to date information about the Humber industrial cluster. It is important for the HICP website to provide investors with a clear gateway to enter existing investment enquiry handling mechanisms.

Interviewees identified that the region was presenting to external investors in the region in a number of different forms and with different levels of clarity over the potential for investment. This was identified as confusing particularly in the face of competition from other regions. Further research is required into the approaches taken by other clusters to providing a single, unified message, without distilling the level of detail available on the individual projects.

In addition to developing clearer online messaging, additional attention and funding should be sought to build on and develop:

- Investor events organisation
- Events attendance
- UK and international investor roadshows
- Co-ordinating activities between organisations in the region in relation to investors
- Retaining a range of information of benefit to investors (land availability, supply chain options, timelines for investments, other investors looking to co-invest, available projects etc)
- Co-ordination and participation with UK Government and DTI events to promote UK investment more generally

Action plan

A focused and easy-to-understand marketing and promotion strategy

Action 3.1: A bespoke investor support service

Existing structures such as DIT, LAs and LEPs to ensure all investors can access the same level of support; ideally, major investors from the UK should also be able to benefit from a dedicated concierge type of support which is already funded from DIT's Key Account Management programme, with agreed service standards. Additionally:

- Engage and develop overseas relationships with in-country DIT posts and foreign embassies with a particular focus on the key sectors related to decarbonisation
- Identify and engage with private sector intermediaries operating in markets and sectors of interest
- Lever alumni networks and trade contacts to unlock investment opportunities from overseas
- Agree on an operating protocol between the future Freeport operators and existing inward investment handling mechanisms

Action 3.2: An investor toolkit

Create a toolkit that can be updated to support the work of the inward Investment officers. This would be an internal resource to provide data and evidence to respond to enquiries. The toolkit could include key findings extracted from HICP reports that show the commercial attractiveness of the Humber offer for infrastructure providers and industrial users. This can involve graphical representation, project investment opportunities, company investment opportunities, case studies and a summary of the support available. Consideration should be given to creating a dynamic decarbonisation infrastructure asset map layer that could be interrogated with existing mapping tools to communicate with investors the site advantages for the Humber.

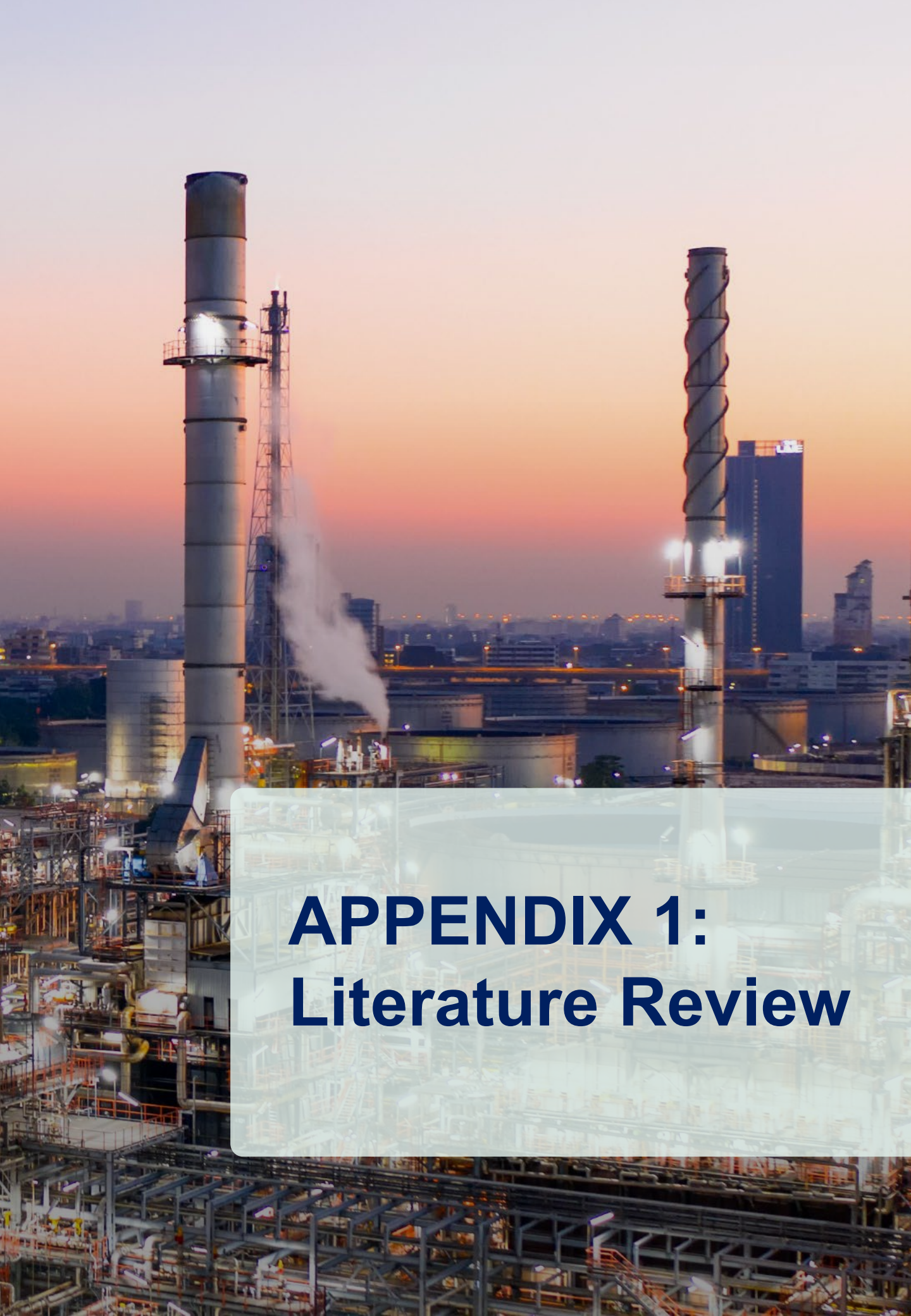
Scale up resources and support to match a new and more demanding investment environment

Action 4: Increase the resources available to fund actions and activity highlighted

It is clear that all of the above action points could require additional resources, especially since so much investment and technological change is required in order to achieve decarbonisation targets. There is no single solution and resources can be scalable and targeted at activity that cannot currently be funded through commercial investment. In this way, the Humber industrial cluster will be able to establish its reputation as the region leading the UK's industrial transition to net zero energy.

Due consideration should therefore be given to scalable funding models (such as using Freeport business rate retention monies, potential combined authority resources, commercial contributions or bidding for future Government grants) to support enhanced marketing and investment delivery.

It is imperative to take into account the duplication of effort when discussing organisational structures for inward investment. The goal of attracting inward investment is to develop long-term relationships both directly with the client as well as with the agencies and departments that will facilitate the investment process.



APPENDIX 1: Literature Review

Literature Review – Bibliography

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The report covers core themes from the last year such as:

- Expanding Britain's global horizons
- Resilience in the face of the pandemic
- The progress of Levelling Up across the whole of the UK
- How the UK is transitioning towards net zero emissions and a green economy
- The UK's position as a science superpower

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