

Welcome

The Net Zero Teesside Project (NZT) will be the UK's first commercial scale, full chain Carbon Capture, Usage and Storage (CCUS) project, and has the potential to capture up to 10 million tonnes (Mt) of carbon dioxide (CO₂) emissions per year, the equivalent to the annual energy use of up to 3 million homes in the UK. NZT will therefore make a significant contribution toward the UK reaching its net zero greenhouse gas emissions target by 2050.

NZT is being promoted by Net Zero Teesside Power Limited (NZT Power) and Net Zero North Sea Storage Limited (NZNS Storage); together these form the Applicant for the consent to build and operate the NZT Project. NZT will comprise a number of elements, including a new gas-fired power station, with state-of-the art carbon capture technology. CO_2 from the power station, as well as from a cluster of local industries on Teesside, will be captured through a common CO_2 pipeline network and transported for permanent storage at a suitable offshore geological site under the North Sea.

Following our initial (Stage 1) consultation in autumn 2019, we are holding this further (Stage 2) consultation to seek the views of the local community and other stakeholders on our more developed proposals for NZT.

Who is the Applicant?

The Project is being developed by a consortium of energy companies, led by BP, working under the remit of the Oil and Gas Climate Initiative (OGCI). Other members of the consortium include Eni, Equinor, Shell and Total.

OCGI has 12 members (see below) and significant expertise in the field of CCUS, with 17 of the operational large-scale CCUS projects worldwide being operated by OGCI members. OGCI has earmarked over \$1 billion for accelerating the deployment of innovative low emissions technology. NZT is one of OGCI's key investments. Further information on OGCI can be found at: https://oilandgasclimateinitiative.com

























What are the aims of the Stage 2 consultation?

Before construction can begin on the onshore parts of the NZT development, we need to apply for and obtain various permissions, including a Development Consent Order (DCO) from the Secretary of State (SoS) for Business, Energy and Industrial Strategy under the Planning Act 2008.

Consultation is a key part of the DCO process and it is a requirement to consult people living within the vicinity of a project and to take into account their views in preparing the application to be submitted to the SoS.

Our Stage 1 Consultation in autumn 2019 introduced NZT to the local community and presented information on the broad locations and route corridors being proposed for the various onshore elements of the Project and also provided the findings of our early environmental work. Since autumn 2019 we have undertaken further technical and environmental work on NZT. The Stage 2 Consultation will therefore provide information on our more developed proposals, including:

- the decisions made about the locations, route corridors, design and layout of the onshore elements of NZT and how the route corridors are being narrowed as we move toward submission of the DCO application;
- the potential environmental effects of the construction and operation of NZT, including the duration of the construction programme;
- the findings of the Environmental Impact Assessment (EIA) work undertaken to date presented in the form of a Preliminary Environmental Information (PEI) Report; and
- the proposals for avoiding, minimising and/or mitigating any likely environmental effects of the Project.

How can I submit comments?

Comments can be submitted in the following ways:

- Completing a Feedback Form and returning it to the Freepost address below.
- Completing an online version of the Feedback Form available on the Project Website: <u>www.netzeroteesside.co.uk</u> or through the virtual consultation event at <u>netzeroteesside.consultation.ai</u>
- Webinars on the following dates:

Tuesday July 7th 2pm – 4pm
Tuesday July 14th 10am – 12pm
Thursday July 30th 2pm – 4pm
Tuesday August 11th 10am – 12pm
Monday August 24th 6pm – 8pm

Friday September 4th 10am – 12pm

- By email: consultation@netzeroteesside.co.uk
- By post: Freepost NET ZERO TEESSIDE PROJECT CONSULTATION
- By telephone: Freephone 0800 211 8185 lines will be open 10am to 4pm Monday to Friday.

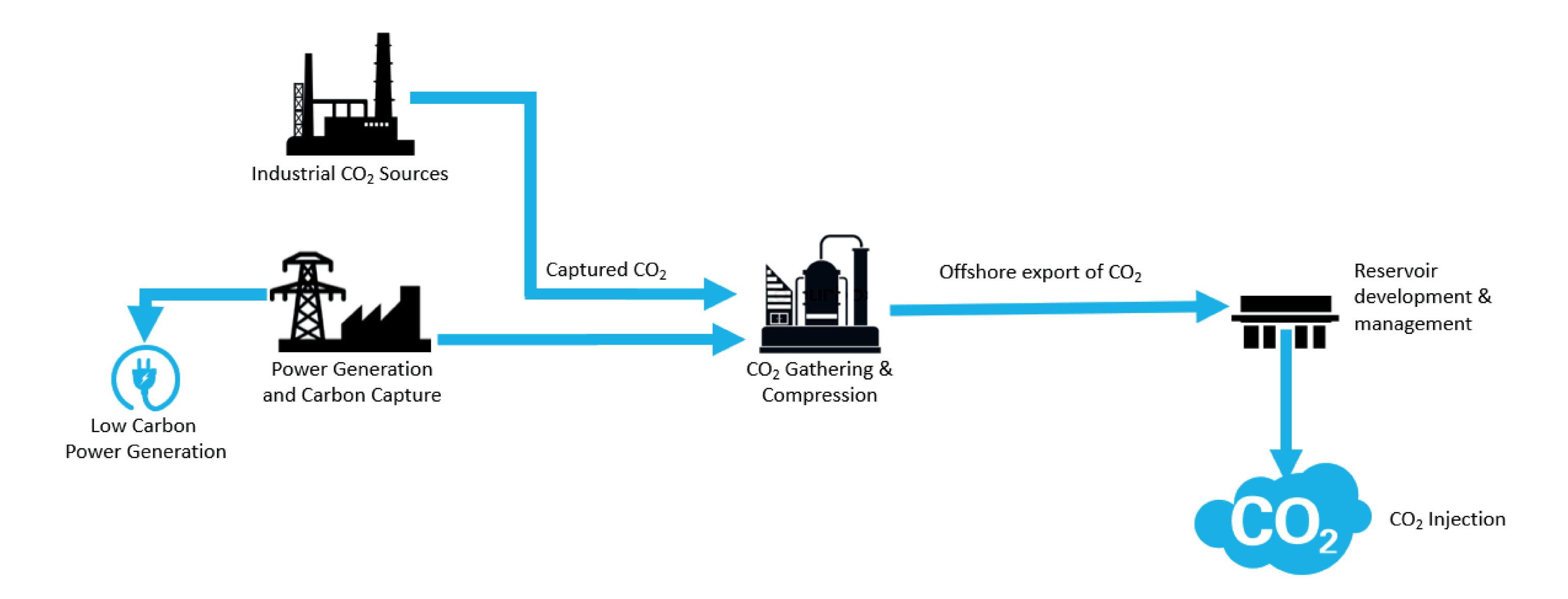
We would ask that comments are submitted no later than 18th September 2020.

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Carbon Capture, Utilisation and Storage (CCUS) – What is it?

Carbon Capture is a process that removes CO_2 from emissions at source, for example emissions from a power station or chemical manufacturing installation, and then compresses the CO_2 so that it can be safely transported to secure underground storage sites. It is then injected into layers of solid rock filled with interconnected pores where the CO_2 becomes trapped and locked in place, preventing it from being released into the atmosphere.



The technologies used in CCUS are proven and have been used safely across the world for many years. Storage sites are located several kilometres underground and are subject to stringent tests to ensure that they are geologically suitable. In the UK, it is expected that the storage sites will be located offshore, in areas such as the North Sea.

Why is CCUS needed?

CCUS is proven technology and is already in use around the World. It is one of a number of technologies that are crucial to reducing CO₂ emissions and combatting global warming. The UK Government has committed to achieving net zero in terms of greenhouse gas emissions by 2050. This is a legally binding target.

CCUS technologies will play an important role in meeting energy and climate goals. In the International Energy Agency future Sustainable Development Scenario, CCUS needs to achieve 7% of the cumulative emissions reductions needed globally by 2040. This implies a rapid scale-up of CCUS deployment is needed, from capturing around 30 million tonnes (Mt) of CO₂ globally each year today, to 2,300 Mt per year by 2040

In the UK the Government is committed to decarbonising the country's national emissions in order to meet its legal commitment to achieve 'net zero' in terms of greenhouse gas emissions by 2050. The important role that CCUS has to play in contributing to net zero is set out in the following documents:

- The National Infrastructure Plan (2014) produced by the National infrastructure Commission.
- The Clean Growth Strategy (2017) UK Government.
- Clean Growth The UK Carbon Capture usage and Storage deployment pathway An Action Plan (2018) UK Government.
- Net Zero The UK's Contribution to Stopping Global Warming (May 2019) The Committee for Climate Change.
- Net Zero: Opportunities for the Power Sector (March 2020) produced by the National Infrastructure Commission.

On 27 June 2019, the 'Climate Change Act 2008 (2050 Target Amendment) Order 2019' came into force. The Order sets out within UK law the Government's commitment to achieve 'net zero' in terms of greenhouse gas emissions by 2050. The Order amends the previous target (within the Climate Change Act 2008) to achieve a reduction in greenhouse gas emissions of 80% by 2050 compared to 1990 levels.

The commitment to achieve net zero by 2050 is in line with the recommendations that the Committee for Climate Change ('CCC') set out in its May 2019 strategy 'Net Zero – The UK's Contribution to Stopping Global Warming'.

The view of the CCC is that CCUS is a necessity, not an option, in achieving the Government's net zero 2050 target.



Why Teesside?

Teesside has long been a focus for industry, ranging from steelmaking to chemicals. Today some of the region's leading industrial businesses together generate £2.5 billion each year for the UK economy. However, as the UK transitions to a low carbon economy, and with the commitment to achieve net zero by 2050, local industry faces a fundamental challenge - to sustainably remove CO_2 from industrial emissions. CCUS is critical to this.

Teesside is an ideal location for NZT and was carefully selected after an extensive site selection process. Teesside industries account for 5.6% of industrial emissions in the UK. CCUS can therefore make a real difference on Teesside. With the existing concentration of industries located within a relatively compact area, captured CO₂ can be gathered and transported to an offshore storage site relatively easily. Teesside also benefits from proximity to the North Sea with access to some of the largest and most secure potential CO₂ storage sites anywhere in the world, deep under the seabed, with over 1,000 Mt of potential storage capacity, enough for many decades to come.

NZT will not only create jobs during its construction and the operation of the gas-fired power station but will also safeguard existing jobs by decarbonising local industries under increasing environmental pressure and help stimulate inward investment in new low carbon industries to the area.

How will NZT work?

NZT will work by enabling a cluster of industries on Teesside to capture CO₂ at source, then transport it via a common pipeline network to an offshore geological storage site under the North Sea. It will provide the potential for CO₂ to be captured from the proposed gas-fired power station as well as neighbouring facilities, such as a biomass power station, hydrogen production facility and a range of other local industries.

NZT comprises both onshore and offshore elements, including:

On-shore

- a high efficiency gas-fired power station with a capacity of up to 2.1 gigawatts output, including a carbon capture plant, that can flexibly deliver low carbon electricity to the UK transmission system;
- cooling water, gas and electricity connections for the gas-fired power station;
- a CO_2 gathering network connecting to other facilities on Teesside allowing them to capture CO_2 from their own processes and direct them through this network so that their CO_2 can be transported and stored;
- a CO₂ compressor station, which will receive the captured CO₂ from the power station and other facilities and compress the CO₂ to high pressure; and
- the on-shore part of a CO_2 transport/export pipeline.

Off-shore

- the off-shore part of the CO₂ export pipeline for the onward transport of the captured and compressed CO₂ to the offshore storage site; and
- a geologically secure offshore storage site under the North Sea where the CO₂ will be permanently stored this will either be a depleted oil or gas field or a saline aquifer.

The gas-fired power station and CO₂ compressor station will be located on part of the former SSI steel works site in Redcar, land that is controlled by the STDC. The CO₂ transport/export pipeline will also start in this location before heading offshore. The power station connections and the CO₂ gathering network will involve land within both Redcar and Stockton-on-Tees, including crossings beneath the River Tees.

Our application for a DCO will encompass all the onshore elements of NZT and the crossings beneath the Tees. The offshore elements of NZT (the continuation of the CO₂ transport/export pipeline and the storage site) will be subject to separate consent applications.





The Project Site

The current extent of the Project Site is shown below edged in red. It is located either side of the River Tees, from Redcar in the east to Billingham in the west. The land around Redcar, to the south of the Tees, lies within the administrative boundary of Redcar and Cleveland Borough Council, with the land north of the River within the boundary of Stockton-on-Tees Borough Council.



The gas-fired power station and CO, compressor station will be located on part of the former SSI steel works site in Redcar, land that is controlled by the South Tees Development Corporation. The CO, transport/export pipeline will also start in this location (minimising the distance it has to travel over land) before heading offshore. The power station connections and the CO, gathering network will involve land within both Redcar and Stockton-on-Tees, including crossings beneath the River Tees.

Power Station and CO, compressor station

An indicative layout and 3D visualisation of the gas-fired power station and CO, compressor station are provided below. The design has been developed since the early ideas shared during Stage 1 consultation.



Building Form, materials and use of colour

Building Form

The main image above shows a standard design with a conventional appearance, determined by functional consideration. We want to develop the NZT Plant to provide a visually attractive scheme through the implementation of good design that is also sympathetic to the surrounding SSSI Nature Reserve.



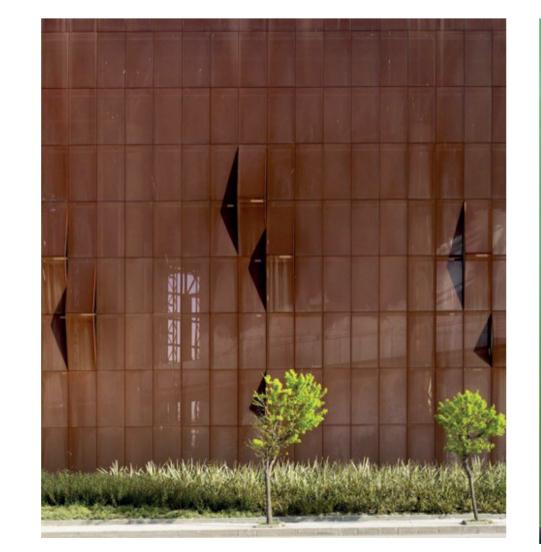
Cladding might be arranged in an Simple pitched roof forms angular format to create texture and interest. North facing rooflights allow natural light to penetrate the plant and limit the requirement for artificial lighting.



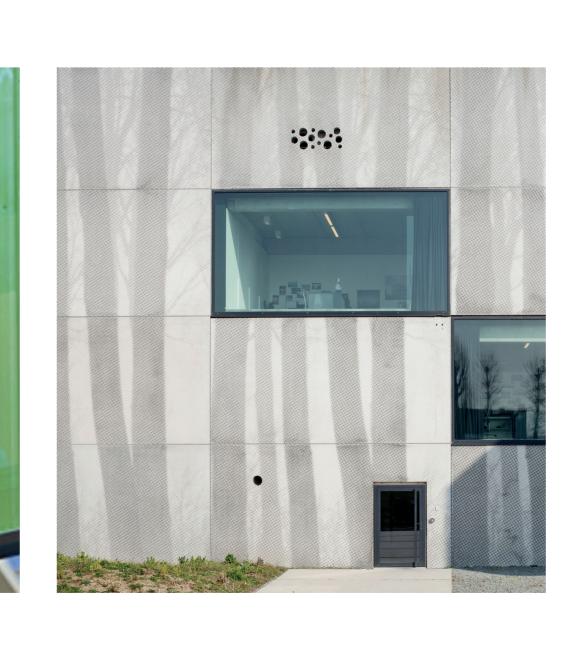
reflect those of the neighbouring fishermans huts.

Materials and Colour

Materials will be chosen to reflect the industrial nature of the plant but also to enhance and respect the surrounding nature reserve area. Colour can be used to highlight certain areas, or ancillary structures on the buildings, to create focal points, add depth and visual interest.



Mesh cladding would allow views through to the plant inside, using Cor-Ten steel would reflect the previous steelworks on the site. Hues of green mesh or cladding could be added, influenced by the surrounding landscape and would provide contrast with the rusty rich brown of the Cor-Ten.



Images might be incorporated into the cladding, such as silhouettes of trees which are natures own carbon capture machines.

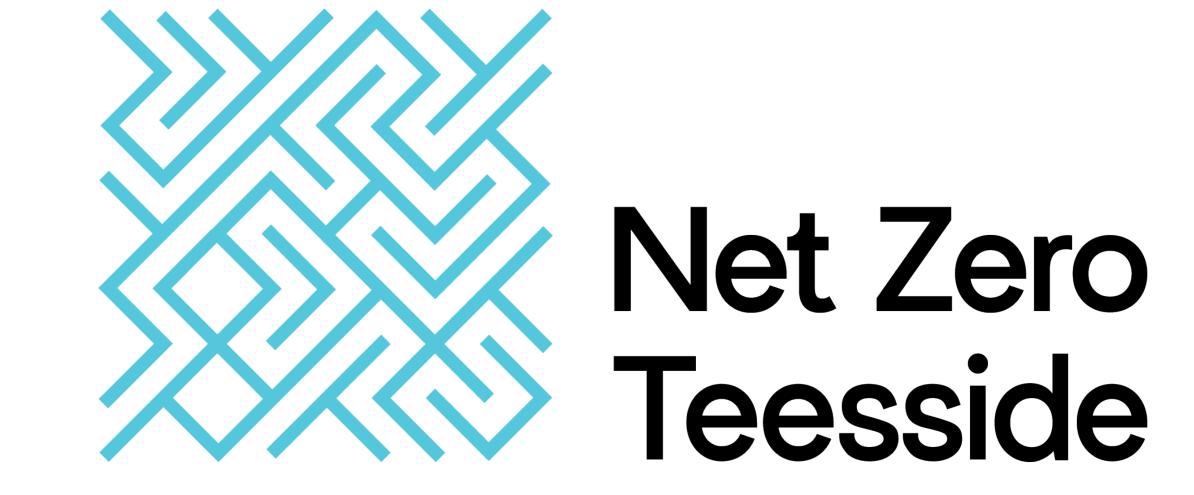
Transparency & Lighting

Parts of the buildings may be clad in transparent material to allow the public to view the NZT process. These elements will be particularly visible at night creating interest.



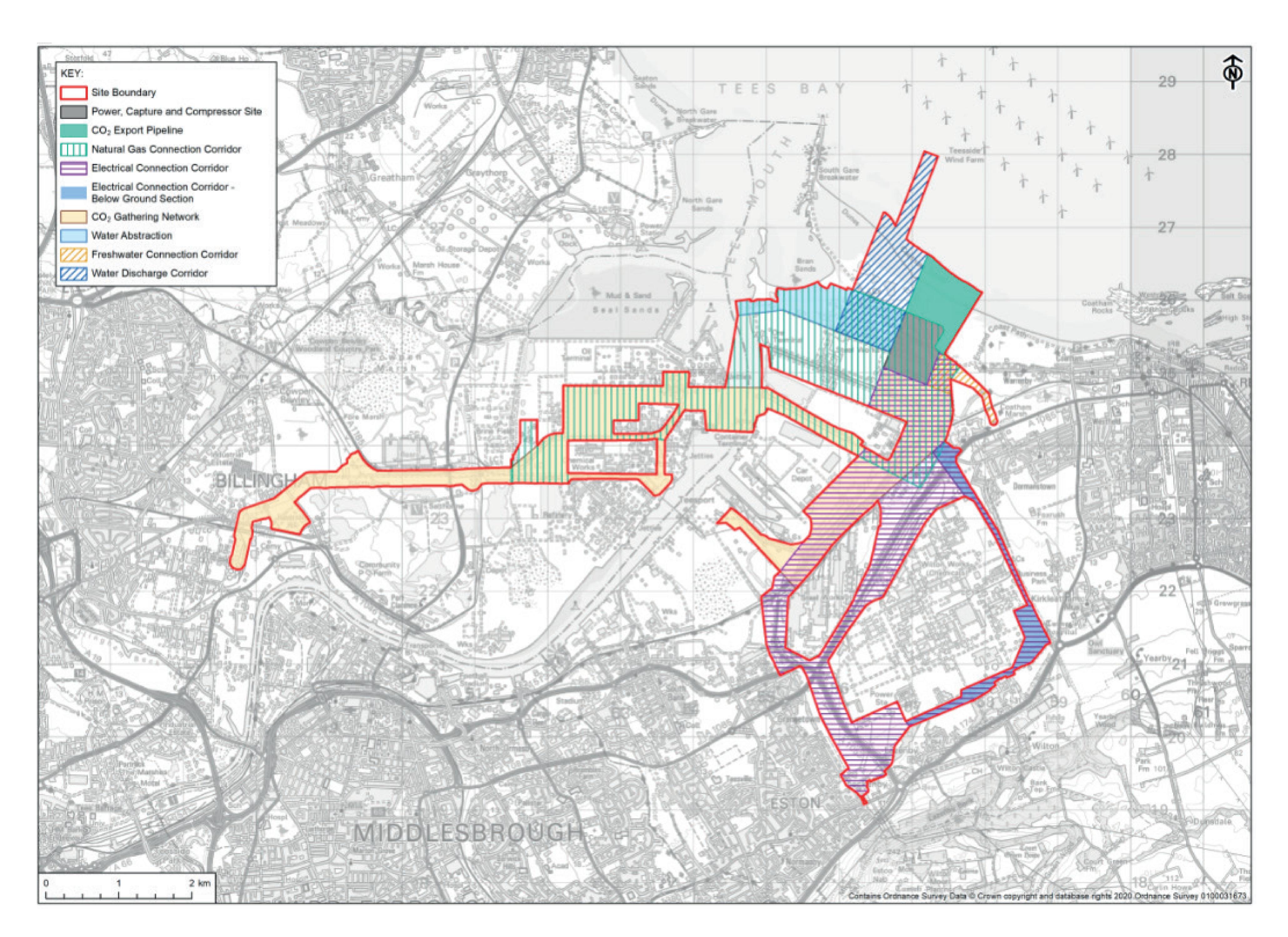


If selected, mesh or polycarbonate materials will become transparent at night allowing views inside the buildings. Coloured lighting may highlight the stacks, or other prominent parts of the site.



Connection Corridors

During the Stage 1 Consultation, we provided some indicative connection corridors for the gas, water, electrical and CO₂ connections. Since then, the corridors have been refined; our latest proposed routes are shown on the plan below:



The design of the NZT Project is being further developed and may be further refined as the EIA process progresses. In order to assess worst-case effects, the maximum parameters of the Project have been defined as the basis for technical assessments supporting the EIA – this is known as the 'Rochdale Envelope' approach. For the purposes of PEI, a preliminary worst-case boundary has been assessed. This preliminary route will be subject to ongoing appraisal and refinement as the preparation of the DCO application progresses.

The final connection routes/corridors will be determined through on-going technical and environmental studies, in conjunction with discussions with landowners, National Grid and existing emitters of CO₂ that may wish to utilise the CO₂ gathering network.

The corridors for the gas supply connection (for the gas-fired power station) and the CO₂ gathering network would be required to cross the River Tees, which is part of the Teesmouth and Cleveland Coast Site of Special Scientific Interest ('SSSI')/Special Protection Area ('SPA').

North of the River Tees (east of Billingham), the proposed CO₂ gathering network would pass close to the Teesmouth and Cleveland Coast SPA/Ramsar Site following existing easements. It is anticipated that the gas supply connection and the CO₂ gathering network would cross the River Tees under the river bed, and that the CO₂ gathering network would be built in or adjacent to existing above ground pipeline corridors that are present in this area.

Electrical connections from the gas-fired power station are expected to connect to the National Grid substation at Lackenby. Water abstractions and discharges that will be required for the CCGT power station are anticipated to directed through existing infrastructure.

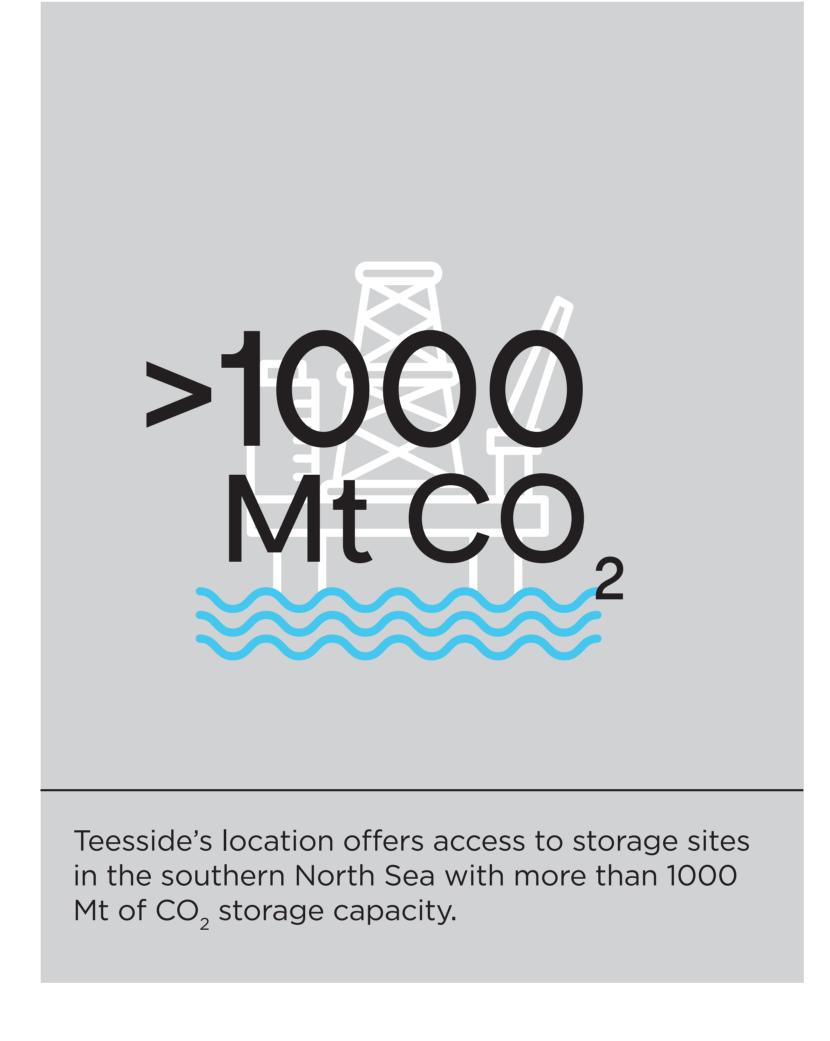


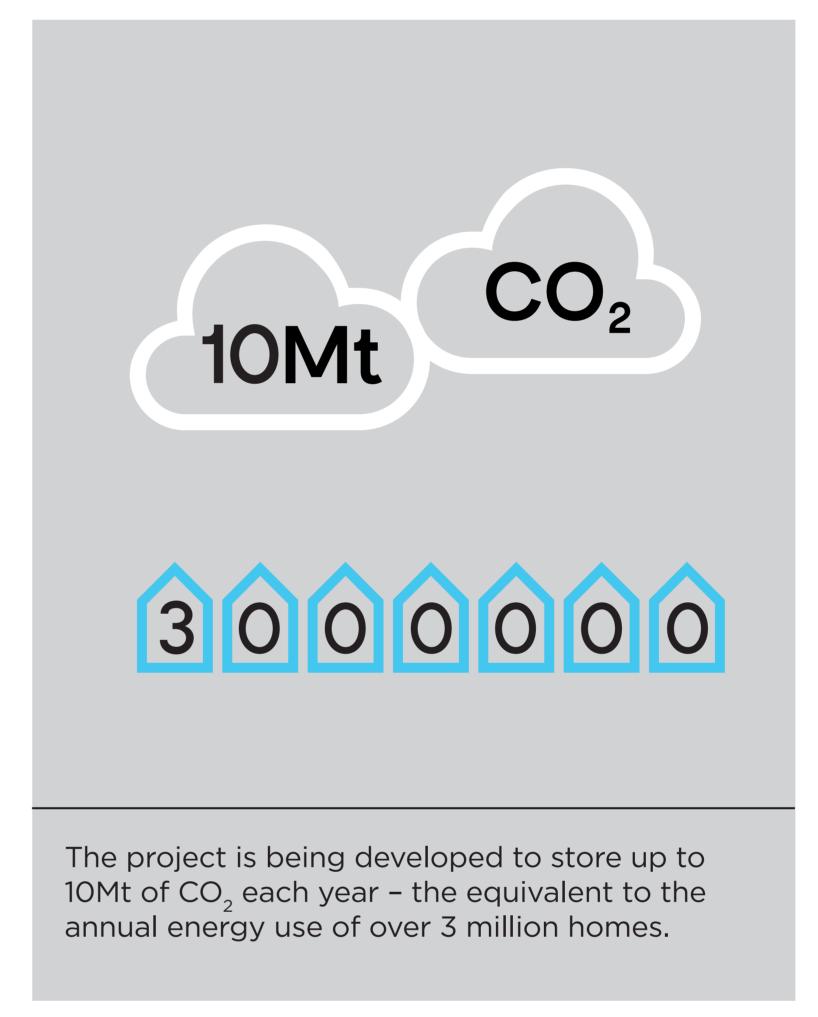
Key facts

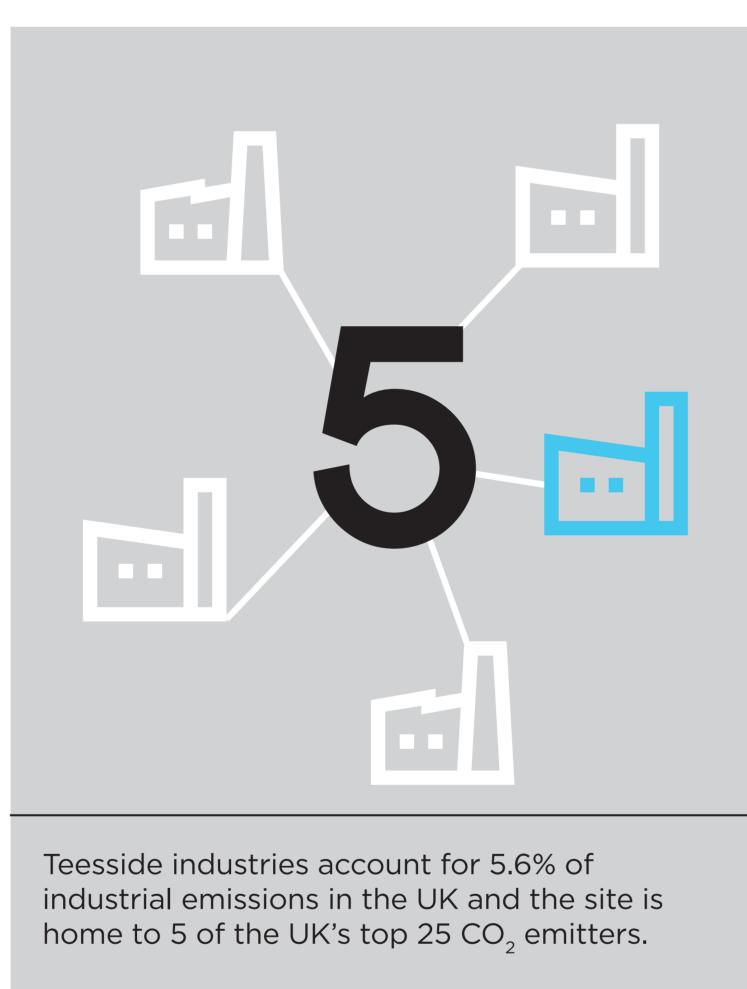
- £450m an extensive assessment of NZT's construction phase estimates an annual gross benefit of up to £450 million for the Teesside region.
- 5,500 NZT could support up to 4,500 direct jobs annually between 2024 2028 during construction, reaching a peak of 5,500 direct jobs in 2025.
- >1000 Mt CO₂ Teesside's location offers access to storage sites in the North Sea with more than 1,000 Mt of CO₂ storage capacity.
- 10 Mt CO_2 NZT is being developed to store up to 10 Mt of CO_2 each year the equivalent to the annual energy use of over 3 million homes.
- 5.6% Teesside industries account for 5.6% of industrial emissions in the UK and it is home to five of the UK's top 25 CO, emitters.
- 7% reduction in the International Energy Association Development Scenario, CCUS accounts for 7% of the cumulative emissions reductions needed globally by 2040

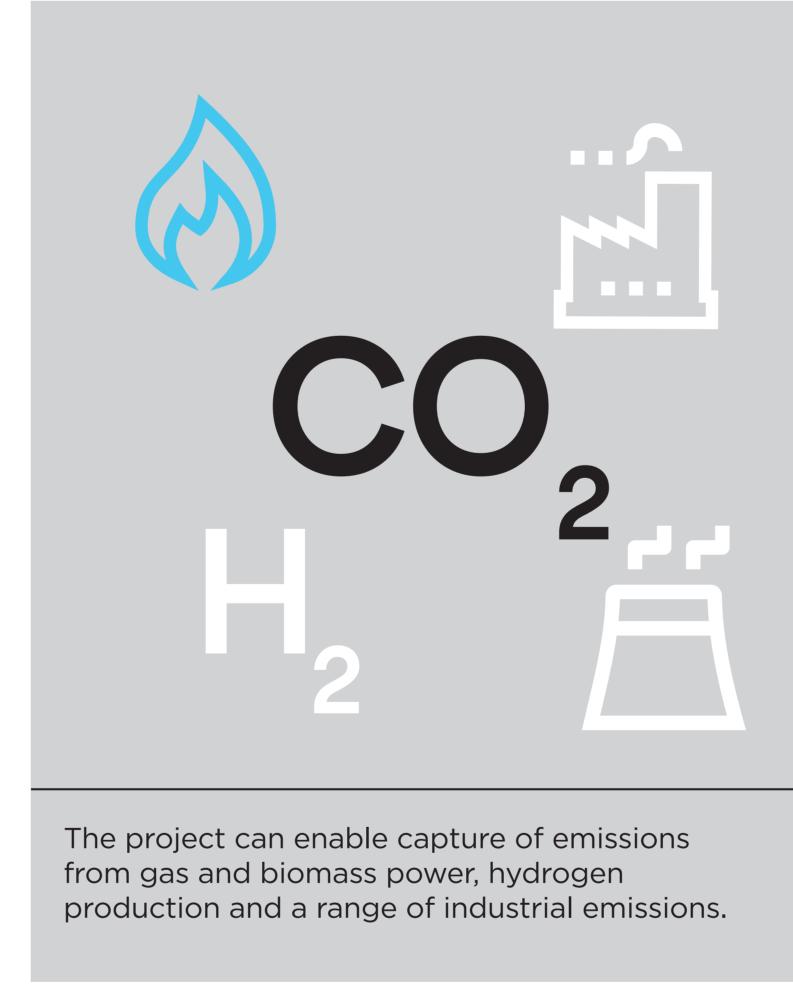


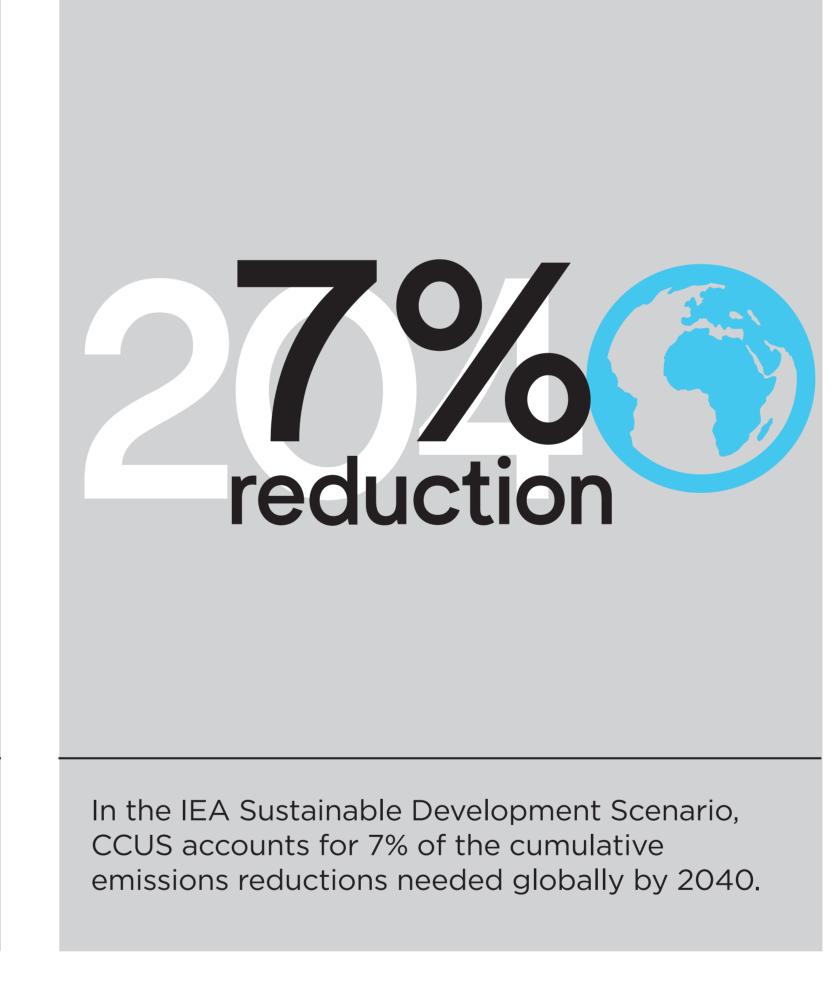


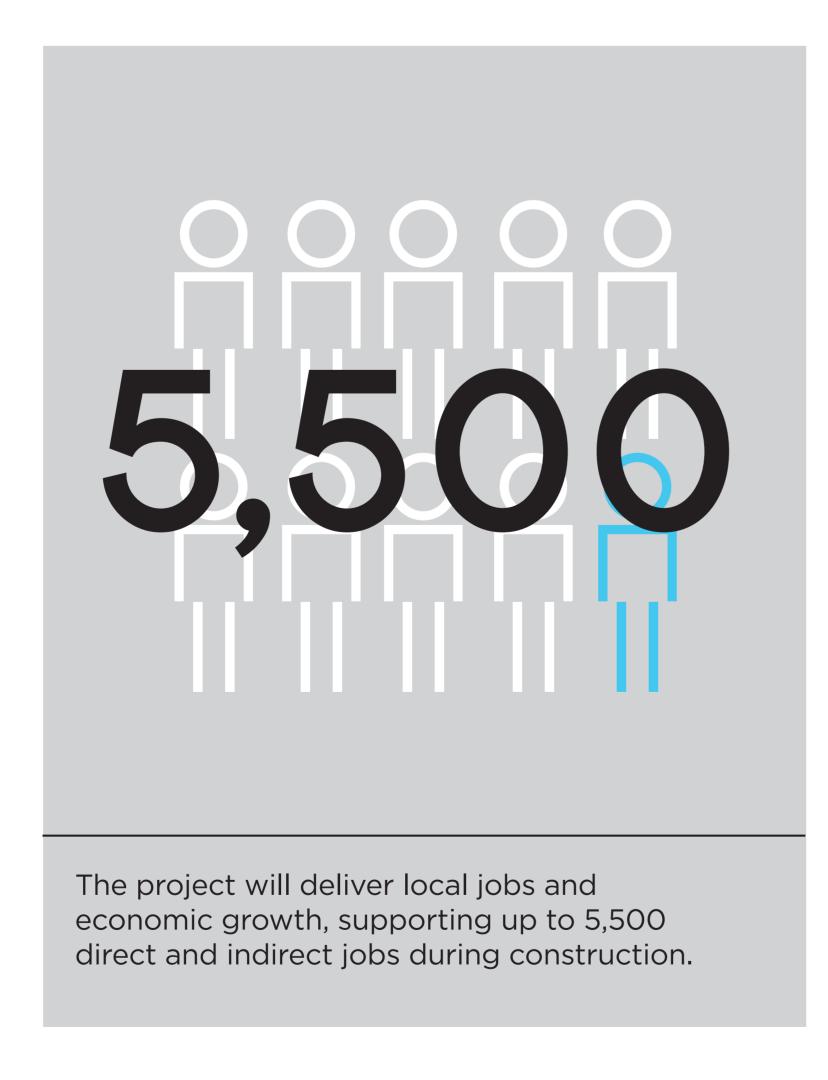


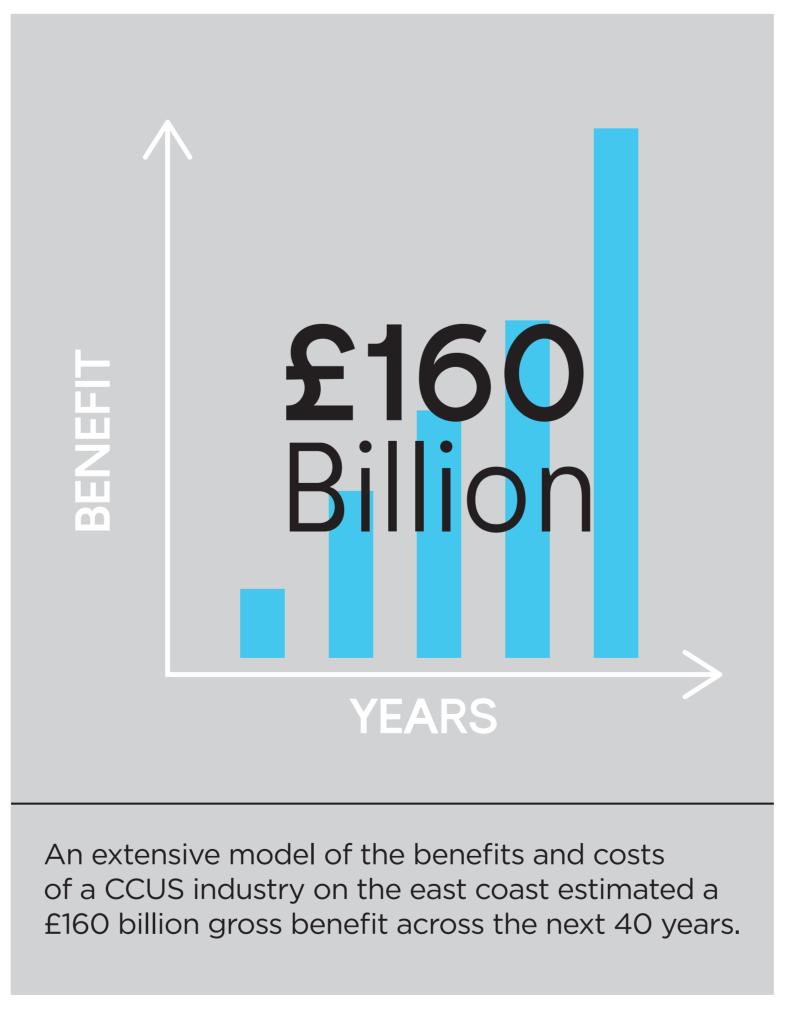












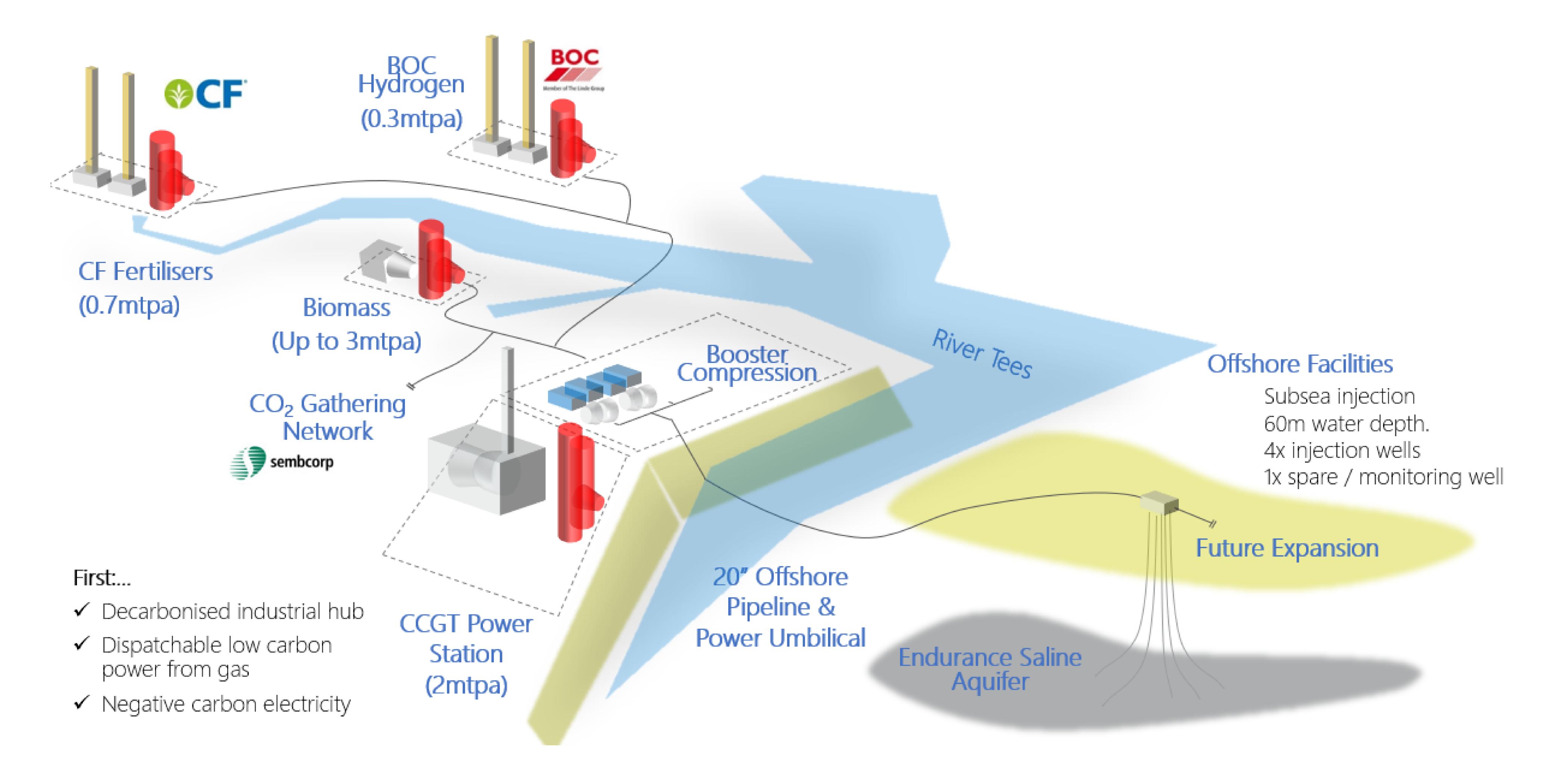




Offshore elements of the NZT

The boundary between the onshore and the offshore elements of NZT is Mean Low Water Springs (MLWS). The captured CO₂ will be transported offshore via a subsea transport/export pipeline to an offshore platform, located approximately 100 km offshore in the North Sea, and injected into a selected geological store (e.g. a depleted gas or oil field). The offshore elements of NZT (excluding the crossing beneath the River Tees which will form part of the DCO application) will be consented under the offshore regulatory regime. The Oil and Gas Authority (OGA) regulates offshore pipelines and carbon dioxide transportation and storage.

NZT world's first zero carbon industrial hub by 2030



We will consult with the relevant stakeholders on the offshore works, including the OGA/BEIS, the Marine Management Organisation, other environmental bodies, conservation groups and other users of the sea to ensure their views are taken into account and incorporated into the process. The consultation on the offshore works is expected to run from mid 2021 to late 2021.

A separate Environmental Statement will be produced in support of the offshore consent application, in accordance with current offshore Environmental Impact Assessment regulations.

Assessment of environmental and social impacts for the offshore works will look at all likely significant effects on the environment associated with drilling, construction, operation and eventual decommissioning of the offshore element of NZT.

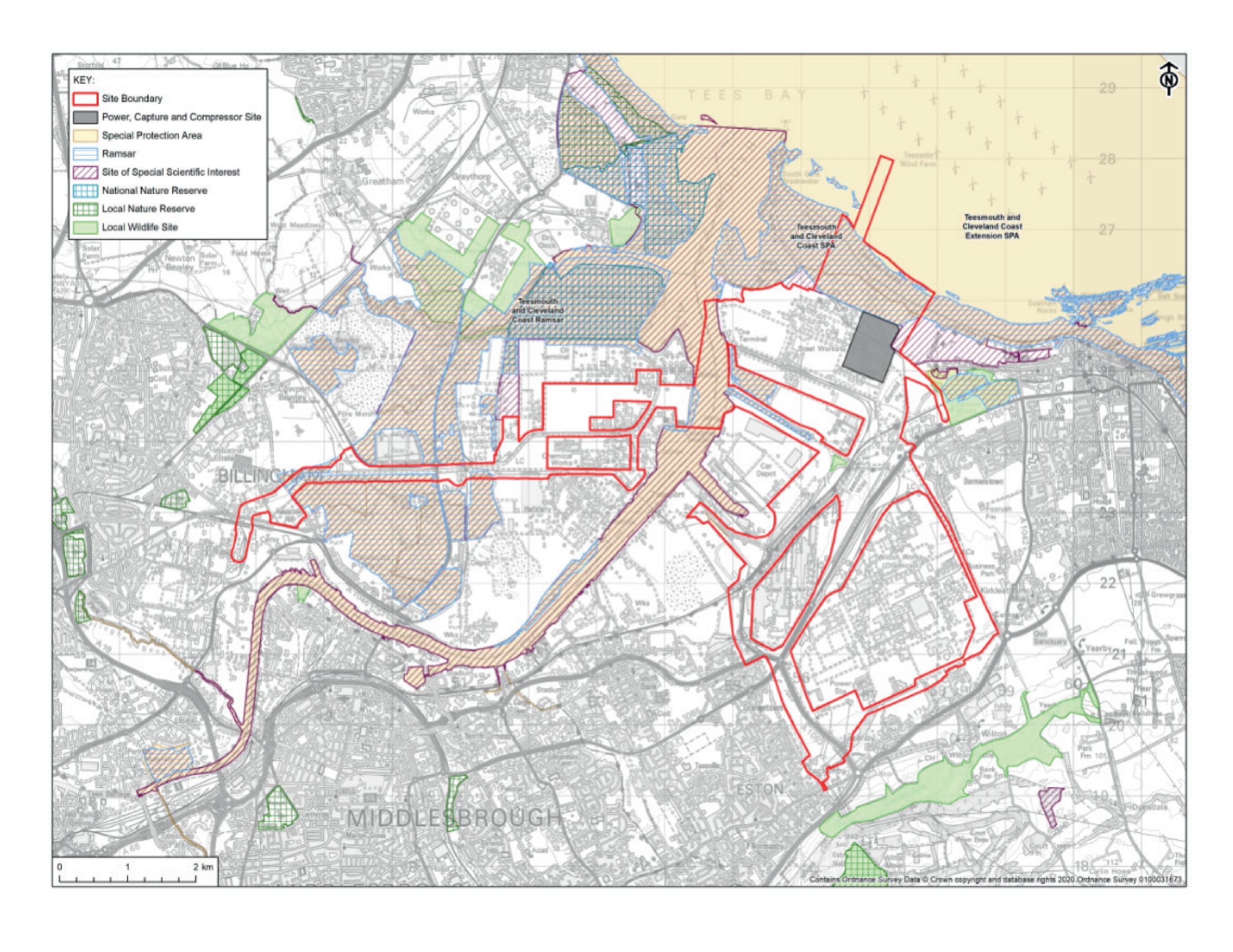
The Environmental Statement for the offshore element of NZT will be submitted for approval in late 2022.



What has changed?

- Confirmation of the former SSI Steelworks as the location of the Power, Capture and Compressor elements of the Proposed Development.
- Development of concept design layout and worst case building sizings for the power station and carbon capture plant
- Completion or commencement of survey work including:
 - Baseline noise monitoring
 - Baseline air quality monitoring
 - Ecological surveys
 - Traffic counts
 - Viewpoint photography
- Preliminary Environmental Information (PEI) Report prepared.
- Narrowing and refinement of the connection corridors for gas, water and electrical connections

Environmental Impact Assessment



As part of the consenting process for the onshore element of NZT, we are undertaking an Environmental Impact Assessment ('EIA') to consider the impact of the Project on the environment and to develop measures to avoid or reduce any impacts (known as mitigation).

The EIA, which is underway, considers all likely significant effects on the environment associated with site preparation works, construction, operation and eventual decommissioning of the NZT Project.

Since the Stage 1 Consultation, significant progress has been made on the EIA for the Project. This has been informed by a formal Scoping Opinion received from PINS in April 2019, ongoing stakeholder engagement and various engineering, technical and environmental studies.

In support of this Stage 2 Consultation, we have undertaken a preliminary assessment of the likely significant effects arising from NZT. The results of this assessment are presented in full within the Preliminary Environmental Information Report (PEI Report) and a summary of key conclusions at this stage is provided in the following table.



Environmental Impact Assessment continued

	Construction	Operation
Air Quality	• Through the use of a Construction Environmental Management Plan (CEMP), no significant effects are predicted.	 Work is ongoing to further characterise the expected emissions and will inform the need for any additional mitigation measures. At this stage, no significant effects on human health are predicted (see below for effects of air quality on ecology).
Hydrology and Water Resources	 Potential significant effects can be avoided through implementation of a CEMP. Flood risk is low at the PCC and will be minimised through the use of a surface water collection and discharge system and a CEMP. 	No significant effects are predicted during operations at this stage.
Geology and Hydrogeology	 With mitigation measures in place and the application of a CEMP, construction phase effects are shown to be not significant at this stage. 	With mitigation measures in place and the application of a CEMP, operational phase effects are shown to be not significant at this stage.
Noise and Vibration	 Using best practice measures to control construction noise no significant noise effects are predicted. 	With mitigation no significant adverse noise effects are predicted to occur at residential or ecological receptors during operation.
Terrestrial Ecology and Nature Conservation	 Adverse effects on terrestrial ecology receptors during construction are likely to be manageable through implementation of a CEMP. 	• There are a number of mitigative measures that are to be evaluated as design progresses, which will aim to reduce effects to no signficant adverse effects.
Aquatic Ecology	 Potential adverse effects on aquatic ecology receptors during construction will be managed through implementation of a CEMP. 	With mitigation measures applied, no significant adverse effects to aquatic ecology during operations are predicted.
Marine Ecology and Nature Conservation	 Potential adverse effects on marine ecology receptors during construction will be managed through implementation of a CEMP. 	With mitigation measures applied, no significant adverse effects to marine ecology during operations are predicted.
Ornithology	 With suitable mitigation it is not expected that construction will lead to more than temporary significant effects during construction. 	• In advance of detailed engineering design and assessment it is considered that there is preliminary potential for some adverse air quality effects on habitats; mitigation to be considered as above.
Traffic and Transportation	 No significant effects are predicted. 	No significant effects are predicted
Landscape and Visual Amenity	 During construction temporary significant effects are expected to occur at nearby visual receptors in Redcar, North Gare Sands and the South Gare Breakwater and on the England Coastal Path at Warrenby. 	• During opening and operation there are expected to be significant effects on the England Coast Path and Redcar seafront. The design of the Proposed Development will aim to minimise adverse effects through optimised design and layout as well as appropriate use of materials and colours.
Archaeology and Cultural Heritage	 With mitigation, there will be no significant effects on archaeology and cultural heritage during construction. 	There will be no significant effects on archaeology and cultural heritage during operation.
Marine Heritage	 With mitigation, there will be no significant effects on marine heritage assets during construction. 	There will be no significant effects on marine heritage assets during operation.
Socio-economics and Tourism	 Construction employment opportunities (at least 1,740 jobs) are likely to have a significant beneficial short-term effect on the economy. 	• Operation is likely to generate employment opportunities for 130 employees and likely to have a moderate beneficial long-term effect.
Climate Change (Greenhouse Gases)	No significant effects are predicted during operation. The Project may result in a net reduction in carbon emissions and have a beneficial effect on annual UK carbon emissions. The Project will enable local industry to meet Net Zero.	
Major Accidents and Natural Disasters	The engineering design, construction and operation of the Proposed Development will reduce Major Accident and Disaster Risk to levels which are 'as low as is reasonably practicable (ALARP) as required by the HSE and Environment Agency.	
Population and Human Health	At this preliminary assessment stage significant effects relating to population and human health include construction and operation employment; these are beneficial effects and are discussed in detail within the PEI.	
Cumulative and Combined Effects	The assessment included within the PEI Report is currently at Stage 1 and has established the long list of developments to be assessed in the ES. Subsequent stages of the assessment (Stages 2-4) will be completed and presented within the ES.	

The assessment provided in support of this Stage 2 consultation is preliminary and the EIA is subject to ongoing refinement. The final findings of the EIA will be set out in an Environmental Statement. To inform the assessments, we will continue to liaise with key stakeholders, including the Environment Agency and Natural England.

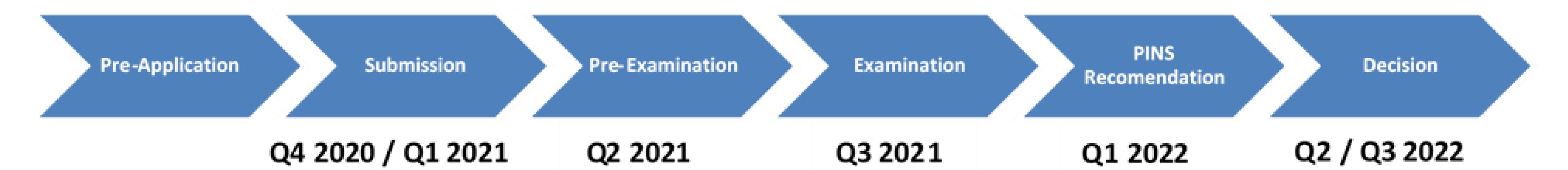
We will carefully consider the potential effects on nearby local populations, users of the area and also the ecological receptors present. It is recognised that there are a number of protected ecological areas near to the Project Site including the Special Protection Area/Ramsar site through which the CO₂ export pipeline will need to be laid. Various measures will be put in place and secured through the DCO to prevent or minimise the effects on these receptors; discussions regarding habitat management and translocation are ongoing with Natural England and lessons-learned with previous similar crossings are being reviewed.



DCO application process

Before NZT can be built, we need to apply for a Development Consent Order ('DCO') from the Secretary of State ('SoS') for Business, Energy and Industrial Strategy '(BEIS') under the Planning Act 2008.

Consultation is a key part of the DCO application process. Following our Stage 1 Consultation in autumn 2019, this Stage 2 consultation represents the next opportunity in the process for the local community and other stakeholders to comment on our proposals for NZT. The DCO application process and our expected timescales for obtaining consent are summarised below.



As required by the Planning Act 2008, we will prepare a Consultation Report showing how we have considered the comments received during our consultation on the proposals.

The DCO application will be submitted to the Planning Inspectorate ('PINS'), which will administer the application process for the SoS for BEIS. Following submission of the application PINS will first decide, on behalf of the SoS and within a prescribed period of 28 days, whether to accept the application for examination. If accepted, PINS will then appoint an independent inspector or panel of inspectors, also known as the Examining Authority ('ExA'), who will examine the application on behalf of the SoS.

Following an examination process of up to six months, the ExA will have three months to write a report setting out a recommendation as to whether development consent should be granted. The report is then sent to the SoS who has three months to consider it and to make a final decision on whether to grant development consent. If the SoS grants consent this will be in the form of a DCO.

Further details on the application process can be found at: https://infrastructure.planninginspectorate.gov.uk/application-process/the-process

What happens next?

project/

The comments and responses received to this consultation will be used to help us finalise our proposals for NZT prior to submitting the DCO application.

The Project Website will be updated regularly throughout the pre-application stage. If you are looking for information as to how the NZT Project is progressing, this will be the best place to start. The Project also has a dedicated page on the PINS National Infrastructure Planning Portal: https://infrastructure.planninginspectorate.gov.uk/projects/north-east/the-net-zero-teesside-

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- By telephone: Freephone 0800 211 8185 lines will be open 10am to 4pm Monday to Friday.

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