

EAST CO₂AST CLUSTER



Humber
Carbon Capture
Pipeline

Humber Carbon Capture Pipeline

Consultation brochure
July 2024



Introduction

The proposed Humber Carbon Capture Pipeline is an important part of the Northern Endurance Partnership's end-to-end carbon dioxide transportation and storage infrastructure network, which enables the East Coast Cluster.

The East Coast Cluster, which serves the industrial powerhouse regions of Teesside and the Humber, has been selected as one of the first two carbon capture, usage, and storage (CCUS) clusters to be taken forward by the UK Government. It includes a diverse mix of projects, including industrial carbon capture, low-carbon hydrogen production, negative emissions power, and power with carbon capture. These technologies are essential for the UK to meet its net zero targets; both regions would also benefit from an influx of green jobs, skills development and supply chain benefits.

Net Zero North Sea Storage Limited via its Northern Endurance Partnership (NEP) project will be the carbon dioxide transportation and storage infrastructure provider for the East Coast Cluster. Net Zero North Sea Storage Limited is progressing the Humber Carbon Capture Pipeline, a proposed onshore infrastructure project that would transport carbon dioxide from carbon capture projects in the Humber region to secure offshore storage under the North Sea. This infrastructure is crucial to achieving net zero in the Humber – the UK's most carbon intensive industrial region.

EAST CO₂AST CLUSTER

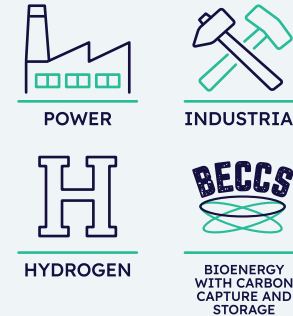
By helping to decarbonise the industrial heartlands of Teesside and the Humber, the East Coast Cluster could capture and store almost 50% of the UK's total industrial cluster emissions.



The shareholders in Net Zero North Sea Storage Limited, bp, Equinor and TotalEnergies, have experience in successfully delivering ambitious and complex energy projects, such as the Northern Endurance Partnership (NEP) project.

Humber Carbon Capture Pipeline

The Humber Carbon Capture Pipeline has a vital role to play in the decarbonisation of the Humber industrial cluster, and towards the achievement of the UK's 2050 net zero targets.



By enabling the decarbonisation of a wide range of existing and proposed carbon capture projects, the Humber Carbon Capture Pipeline could help to protect thousands of existing jobs and create and support an average of 25,000 new jobs across Teesside and the Humber from 2030*.

*NEP: Economic Assessment, Vivid Report, 5 July 2021.

What are we consulting on?

The Humber Carbon Capture Pipeline is a proposed underground, onshore pipeline with above ground installations that aims to transport carbon dioxide produced by industrial projects in the Humber region to secure offshore storage under the North Sea.

The pipeline would be built between Drax in North Yorkshire and the coast north of Easington in the East Riding of Yorkshire, via North Lincolnshire.

The consenting process

Due to its scale, the Humber Carbon Capture Pipeline project is a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008. This means that it will follow a different process to an ordinary planning application and require a Development Consent Order (DCO).

The application for the DCO will be submitted to the Planning Inspectorate and the final decision will be made by the relevant Secretary of State on behalf of the Government. Local councils and communities have a very important role in helping to inform the evolution of the plans through a process that is set out in the Planning Act 2008 and associated guidance.

This consultation

This is the start of our engagement with communities, with further rounds of consultation in the future. As we work to develop our vision for this project, we want to ensure that the communities living and working in the Humber region have the opportunity to see and comment on our emerging proposals.

We are sharing maps showing the proposed pipeline corridor and early details of the pipeline and its associated infrastructure.



Please take part in this consultation and provide your comments by 20 August 2024.

You can give feedback **in person** at our events, online at www.nephccp.co.uk or via email at info@nephccp.co.uk

What is carbon capture, usage and storage?

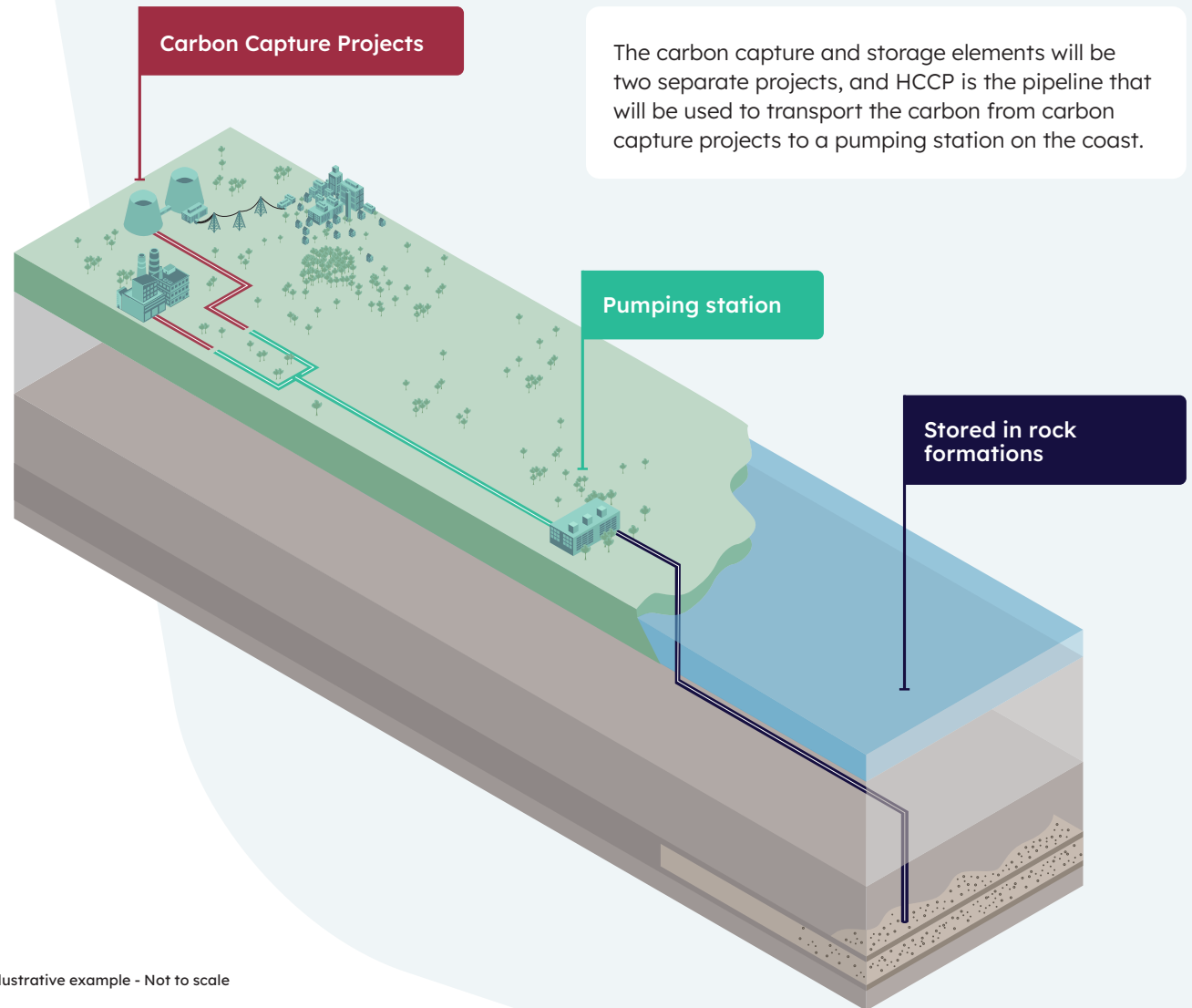
Carbon capture, usage and storage (CCUS) is a process which removes carbon dioxide emissions from industrial processes and power generation and transports them to secure storage areas.

Several industrial sites in the Humber region are developing plans to capture their carbon emissions and we anticipate other carbon capture projects are likely to come forward in the near future.

The Humber Carbon Capture Pipeline is an essential part of carbon capture, usage and storage on the Humber and would provide the infrastructure required to transport the captured carbon dioxide to secure storage.

The carbon dioxide would be stored in geological formations under the North Sea. The offshore transportation infrastructure and storage facility is subject to a different consenting process.

HOW DOES CARBON CAPTURE, USAGE AND STORAGE WORK?



Illustrative example - Not to scale

Capture

Carbon dioxide is captured at a fossil fuel power station or industrial facility.

Transportation (this project)

Carbon dioxide is compressed and transported via onshore and offshore pipelines to a suitable storage location.

Storage (Endurance stores)

Carbon dioxide is injected into natural rock formations offshore where it will be stored permanently.

- Capture
- Transportation (this project)
- Storage (Endurance stores)

What is proposed?

A proposed underground, onshore pipeline with above ground installations, running between Drax in North Yorkshire and the coast north of Easington in East Riding of Yorkshire to transport carbon dioxide.

At this early stage the pipeline has been designed to enable a connection to the consented carbon capture project at Drax as well as to provide connections to the Keadby, Croxton, Killingholme and Salt End areas, to link to carbon capture projects that were shortlisted by the Department for Energy Security and Net Zero (DESNZ) in the cluster sequencing process in August 2022.

The pipeline would enable a connection to carbon capture projects in the Humber selected by DESNZ. We expect DESNZ to set out a selection process for East Coast Cluster expansion from 2024.

The proposed pipeline corridor has been designed to be away from residential areas and to avoid sensitive locations where possible. It mostly passes through agricultural land; we will be working closely with landowners to minimise disturbance.

The pipeline would have a diameter of up to 66cm. Our plans show a proposed pipeline corridor which is typically 300m wide. This includes areas required for temporary and permanent works. The exact location of the pipeline within this corridor has not yet been determined.

We will be undertaking surveys and gathering feedback from stakeholders and landowners to identify the best location for the pipeline. As the project design develops, the width of the pipeline corridor will be reduced.

Above ground installations (AGIs) required for the operation and maintenance of the pipeline.

AGIs would be required near each carbon capture project and at intervals along the pipeline. The size and type of equipment which could be needed at each AGI would vary depending on the function it serves.

The AGIs may be made up of a small structure, pipework and a limited amount of equipment which would be securely fenced. Each AGI would also have space for vehicle parking and an access track connecting to the existing road network.

The AGIs would be remotely monitored and operate as un-staffed facilities but would require security and maintenance visits. A smaller AGI would typically be 30m by 30m. A larger AGI would typically be 80m by 80m. Most equipment contained within the AGIs would be low-level, with some being up to approximately 4m high.

A pumping facility is also required near the coast, north of Easington, to enable the onward transportation of carbon dioxide offshore. The pumping facility would potentially be larger than the other AGIs - further details will be shared at the next consultation.

The AGIs and pumping facility would be surrounded by planting including trees and shrubs, to enhance the natural environment and screen views from the surrounding area.

Preliminary locations of AGIs and the pumping facility are shown on the plans. This includes options for the location of the AGIs near Drax and Thorgumbald, which we welcome comments on.

Pipeline route

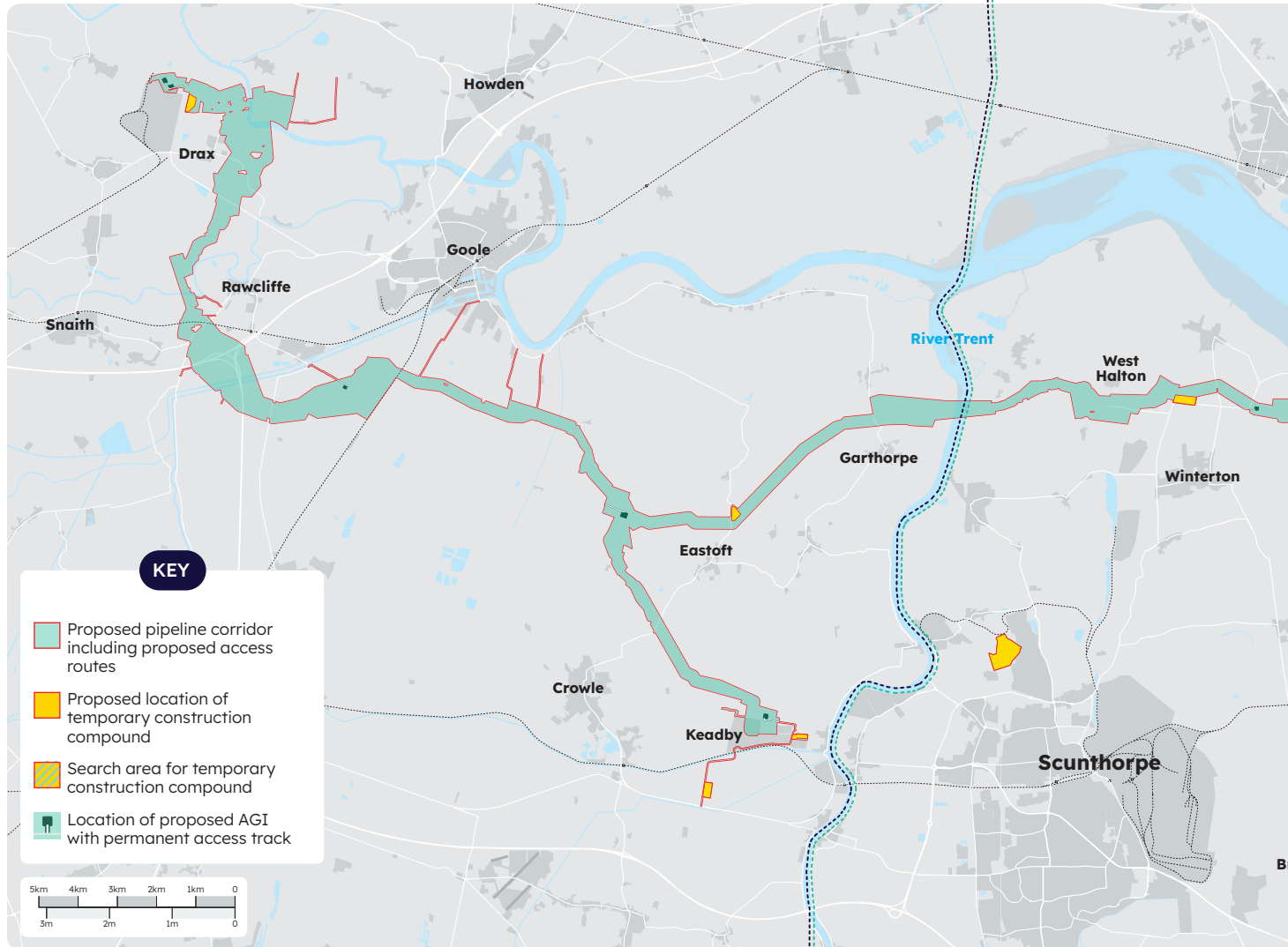
The proposed pipeline corridor has been developed following extensive engineering, environmental and safety considerations, including:

- Providing a feasible route to connect to carbon capture projects in the Humber region;
- Public, construction and operational safety;
- Planning, environmental and land use constraints; and
- Engineering, constructability and cost.

The proposed pipeline corridor for the Humber Carbon Capture Pipeline is different to that you may have previously seen proposed by National Grid, although there are similarities in some sections. The proposed pipeline corridor takes into account feedback that was previously received by National Grid to its consultation of the Humber Low Carbon Pipelines project in 2022. The National Grid Humber Low Carbon Pipelines project is no longer progressing.

The proposed pipeline corridor is described over the following pages in three sections.

SECTION 1 - PAGES 7-8
DRAX TO THE EASTERN BANK OF THE RIVER TRENT



SECTION 2 - PAGES 9-10
RIVER TRENT TO THE NORTHERN BANK
OF THE RIVER HUMBER

SECTION 3 - PAGES 11-12
NORTHERN BANK OF THE RIVER HUMBER TO
THE COAST NORTH OF EASINGTON



Section 1

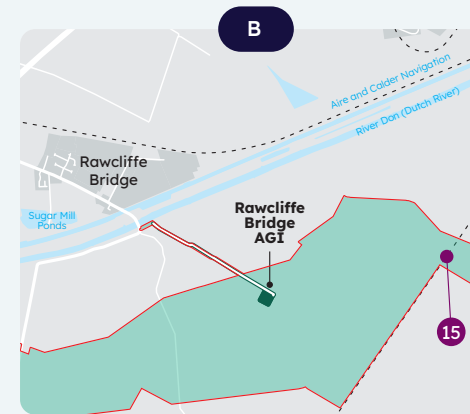
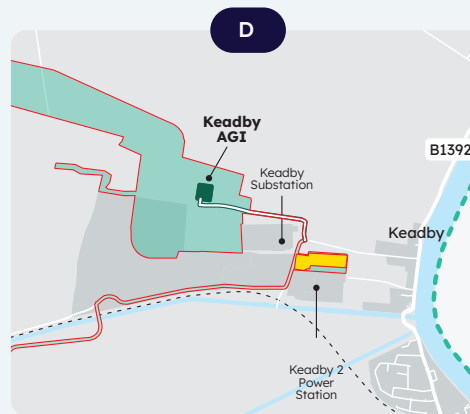
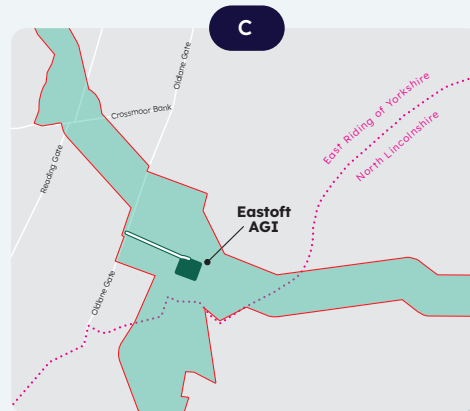
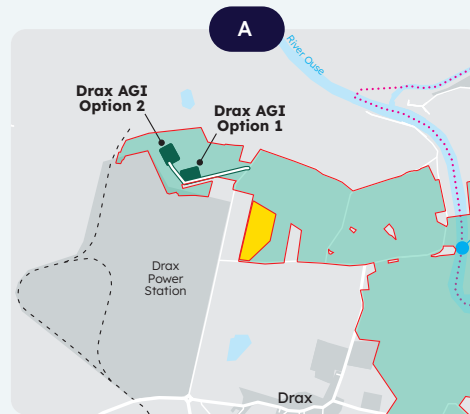
Section 1 extends from Drax to the River Trent. The western part of this section is within North Yorkshire whilst the middle part is in the East Riding of Yorkshire and the eastern part is within North Lincolnshire.

The proposed pipeline corridor provides a connection to a recently consented carbon capture project at Drax, where we are considering two options for the location of an Above Ground Installation (AGI). This area of the proposed pipeline corridor is wider to allow for design development to explore options that minimise the potential impacts to the villages of Drax and Long Drax and the River Ouse.

Continuing south, the proposed pipeline corridor passes west of Rawcliffe and under the Wakefield and Goole railway line, M62, M18 and the River Don. The proposed Humber Freeport – Goole development site constrains the more direct route to the east. An AGI is proposed south of Rawcliffe Bridge.

The proposed pipeline corridor then continues through the agricultural area of Goole Fields. It avoids the River Ouse to the north, and Thorne Moors to the south.

West of Eastoft, an AGI is proposed. A smaller diameter section of pipeline goes to the south to a consented carbon capture project in Keadby. The main pipeline corridor continues eastwards through fields to the crossing of the River Trent between Adlingfleet and Garthorpe, avoiding the Alborough Flats to the north and Burton upon Stather to the south.

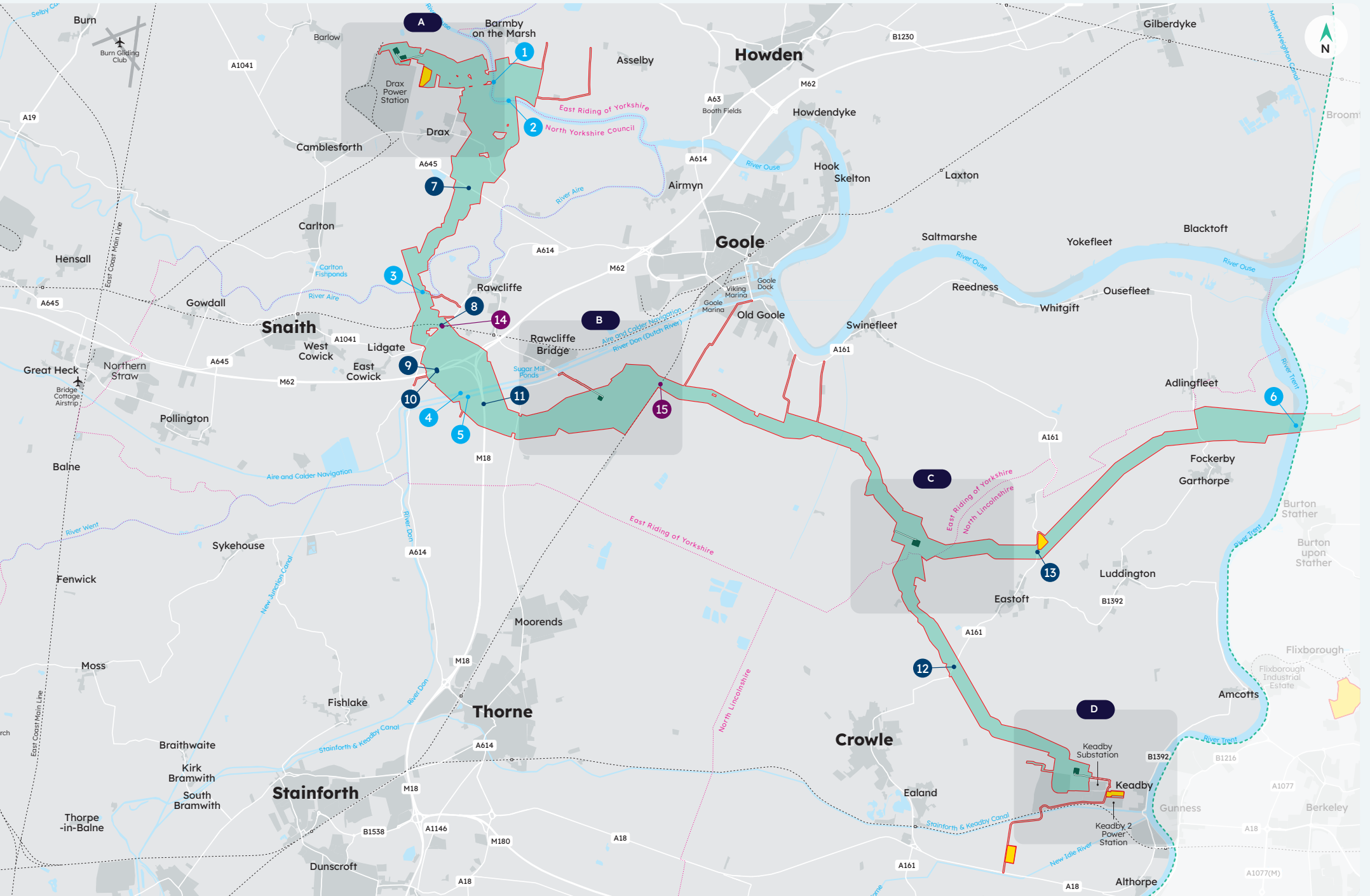


PROPOSED TRENCHLESS CROSSINGS

- 1 Watercourse - River Ouse
- 2 Watercourse - Rusholme Reach
- 3 Watercourse - River Aire
- 4 Watercourse - Aire and Calder Navigation
- 5 Watercourse - Dutch River
- 6 Watercourse - River Trent
- 7 Road - A645
- 8 Road - A614
- 9 Road - M62
- 10 Road - M62
- 11 Road - M18
- 12 Road - A161
- 13 Road - A161
- 14 Railway
- 15 Railway

KEY

- Proposed pipeline corridor including proposed access routes
- Section boundaries
- Proposed location of temporary construction compound
- Local authority boundary
- Location of proposed AGI with permanent access track



Section 2

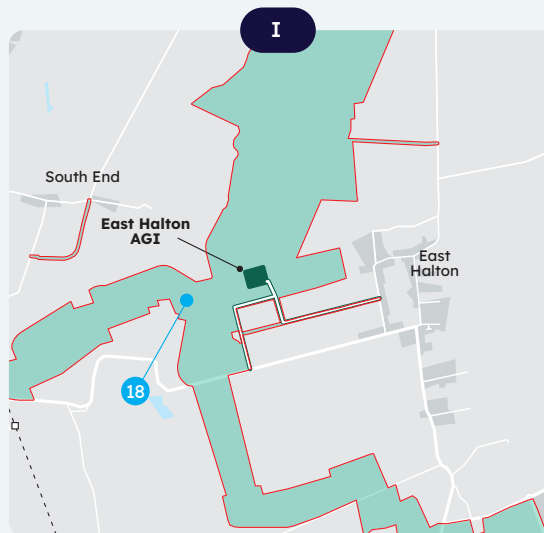
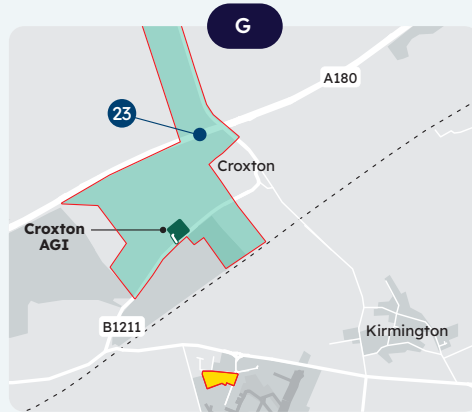
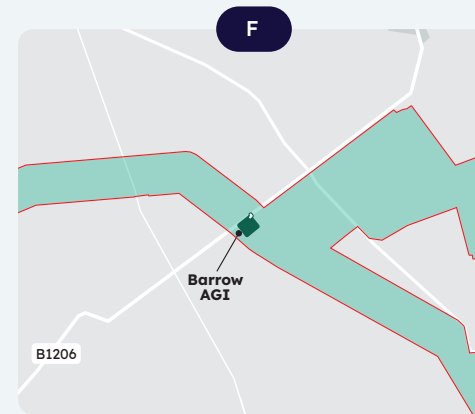
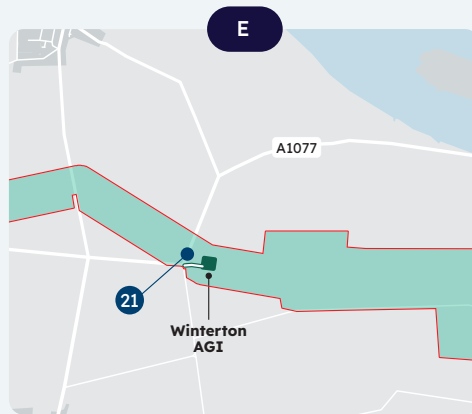
Section 2 is entirely within North Lincolnshire. The proposed pipeline corridor extends from the River Trent under the River Humber and goes north of Winterton, taking into account constraints such as towns, villages and habitats connected to the River Humber.

Starting from the west, the proposed pipeline corridor passes south of West Halton and South Ferriby, then crosses under the A15. An Above Ground Installation (AGI) is proposed north of Winterton.

Further east, near Barrow upon Humber, an AGI is proposed. From here, a smaller diameter pipeline goes south passing west of Wootton to an AGI which allows connection to carbon capture projects near Croxton.

The main route continues east, passing under the A1077 and south of Goxhill and South End. Near East Halton, an AGI is proposed, from which the corridor connects to three AGIs that would allow connection to carbon capture projects in the Killingholme area.

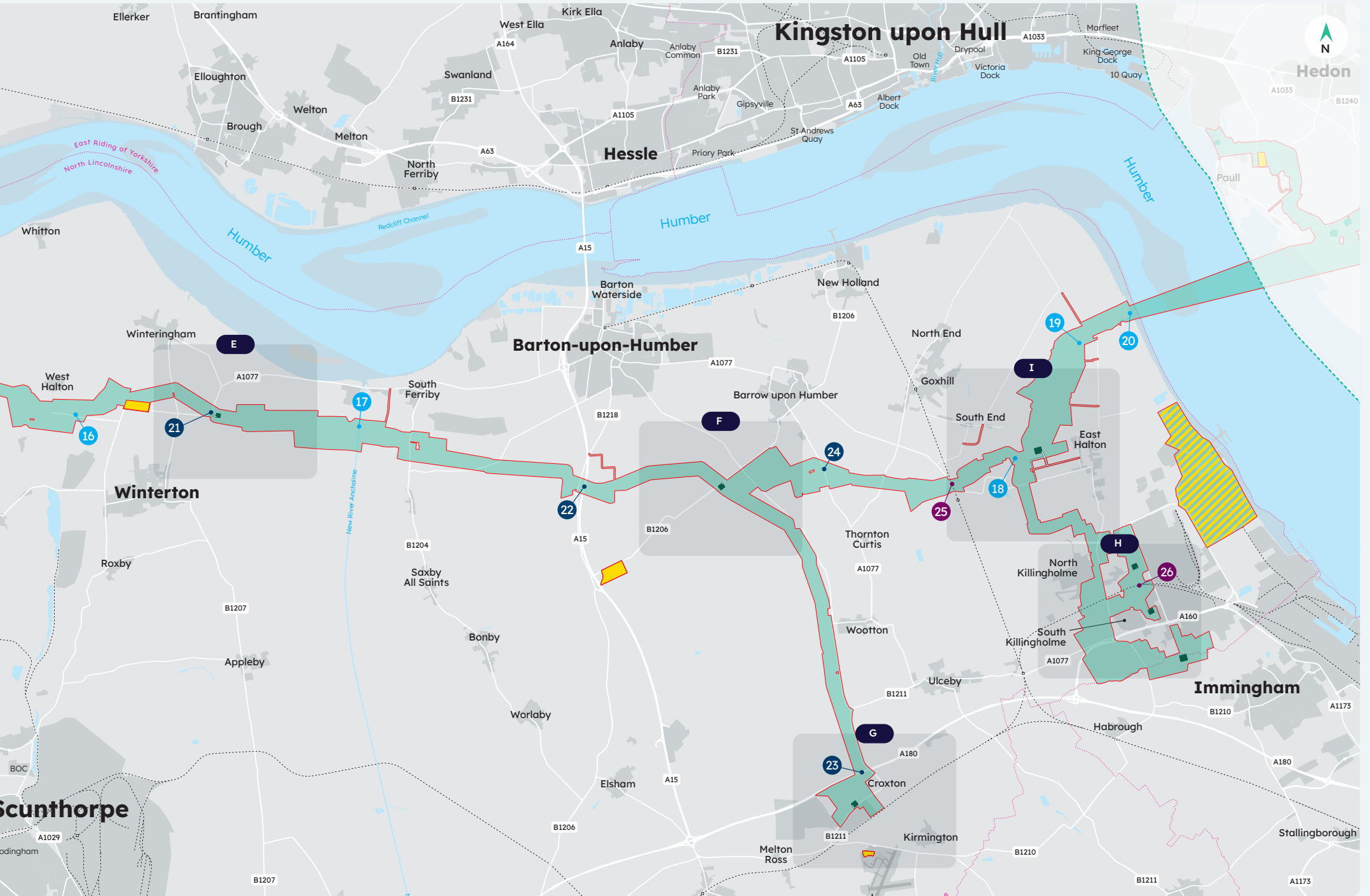
The proposed pipeline corridor continues north, under the River Humber. The corridor avoids the proposed Humber Freeport – Able Humber Port site near East Halton and continues to an area where pipelines already cross the River Humber.



PROPOSED TRENCHLESS CROSSINGS

- 16 Watercourse - Halton Drain
- 17 Watercourse - New River Ancholme
- 18 Watercourse - East Halton Beck
- 19 Watercourse - East Halton Beck
- 20 Watercourse - River Humber
- 21 Road - A1077
- 22 Road - A15
- 23 Road - A180
- 24 Road - A1077
- 25 Railway
- 26 Railway





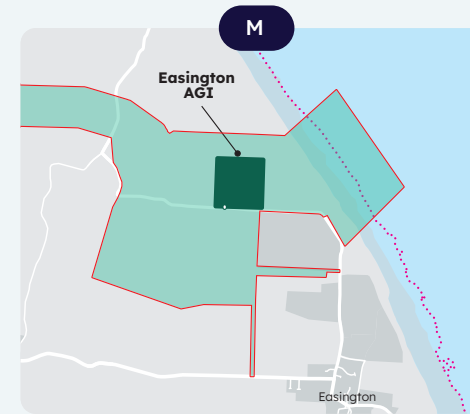
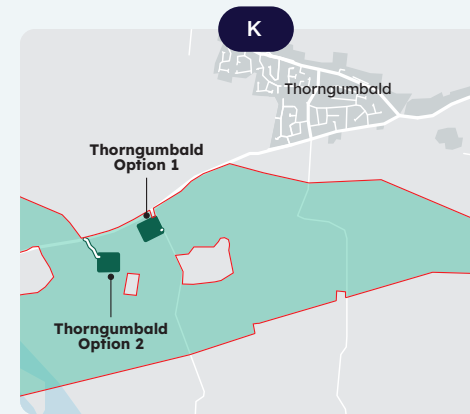
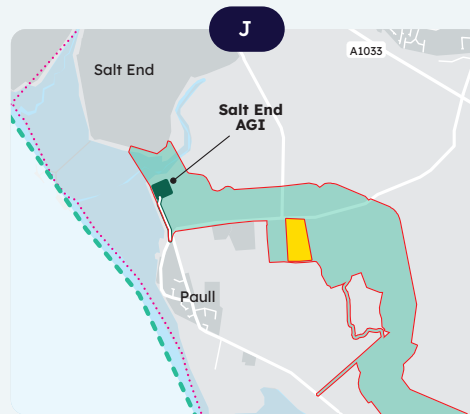
Section 3

Section 3 is entirely within the East Riding of Yorkshire and continues from the north bank of the River Humber near Salt End through to the coast north of Easington.

We are currently considering two options for the location of an Above Ground Installation (AGI) south west of Thorngumbald, allowing a smaller diameter section of the proposed pipeline to continue to an AGI north of Paull. This would provide a connection to carbon capture projects in the Salt End area whilst minimising interaction with the proposed Humber Freeport - Hull East.

The proposed pipeline corridor continues eastwards between Thorngumbald and Easington and is positioned to maintain a distance from settlements such as Keyingham, Ottringham and Patrington. An AGI is proposed between Patrington and Holmpton.

North of the village of Easington, the proposed pipeline corridor connects to the pump facility near the existing gas processing site, which will transport the carbon dioxide offshore to the Endurance stores. The proposed pipeline corridor extends to connect to the offshore pipeline. Beyond this, the pipeline out to sea and other infrastructure would be separately consented and are not part of this proposal.



PROPOSED TRENCHLESS CROSSINGS

- 27 Watercourse - Winestead Drain
- 28 Road - A1033
- 29 Road - A1033





Construction

We will work closely with the local community and other stakeholders throughout the planning and construction process. We would seek to manage environmental impacts and work to minimise, as far as practicable, any disruption caused.

How is an onshore underground pipeline built?

The majority of the pipeline would be constructed in sections, using an 'open trench' technique. This is a common method for pipeline construction which involves excavating a trench that is typically slightly larger than the pipeline, lowering the pipeline into the ground and then replacing the excavated material back into the trench.

An area of around 40m wide would typically be needed for construction, but this could be reduced in environmentally sensitive areas such as the crossings of watercourses or hedgerows.

Where the proposed pipeline crosses major roads, main rivers, railways or sensitive environmental sites a 'trenchless' technique may be used to minimise impact. This would involve installing the pipeline under the feature without digging down from the surface. Preliminary locations where 'trenchless' construction methods are proposed are shown on the plans.

How is an Above Ground Installation (AGI) built?

Firstly, an access track would be constructed. Foundations would be built and the pipework and equipment would be put in place.

Power and telecommunications connections would be installed, followed by completion of security fencing and planting of trees and shrubs.

Temporary construction compounds

Temporary construction compounds would be required. There would be several construction compounds to store equipment and provide staff office and welfare facilities. Potential locations are shown on the maps.

The size, characteristics and duration that the temporary compounds would be in place for would vary depending on the function served, but all would typically include fenced storage areas, cabins for worker welfare, vehicle parking, areas of temporary surfacing and a temporary access track connecting to the existing road network.

Construction traffic from the temporary compounds to the working areas would be carefully managed and use suitable roads on the existing network. Existing tracks would be used where possible.



Environmental considerations

An Environmental Impact Assessment (EIA) will be undertaken to understand and identify the likely significant effects during the construction, operation and decommissioning phases.

This will involve gathering data on the existing environment via site surveys and desk-based sources and undertaking a series of assessments of the potential impacts. Where necessary, measures will be proposed to mitigate predicted adverse effects. The results of the EIA will be provided in a report which will form part of the application documents.

The pipeline and associated Above Ground Installations (AGIs) will be designed to minimise as far as reasonably practicable their impacts on natural habitats and the environment.

Information on the existing ecological and heritage sensitivities has informed the proposed pipeline corridor. We understand that there are important areas in the Humber region, ranging from internationally designated sites such as the River Humber and habitats including rivers and woodland.

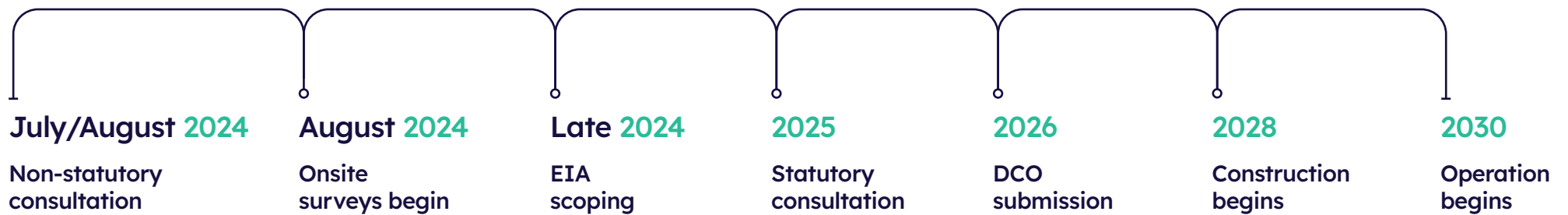
Routes for construction traffic would ensure the most appropriate roads are used. Construction work would be planned to minimise as far as reasonably practicable disturbance to local residents, for example with set working days/hours. Land required temporarily during construction would be restored once works are completed.

Further information on the preliminary findings of the EIA, proposed construction traffic routes and a draft Conservation Strategy will be available at the next round of consultation.



Project Timeline

The anticipated project timeline is:



How do I give feedback?

We are keen to ensure that the feedback of all local people is heard and recorded as part of the consultation process.

You can give feedback in the following ways:

In person

Please attend one of the following events, speak to a member of our team and fill in a feedback form.

Community events	Date	Time
West Halton Village Hall, Coleby Road, West Halton, Scunthorpe DN15 9AP	Tuesday 16 July	4-8pm
Goxhill Memorial Hall, 65 Chapel Street, Goxhill, Barrow upon Humber DN19 7JJ	Wednesday 17 July	4-8pm
Easington Community Hall, The Square, Easington, East Yorkshire HU12 0TU	Thursday 18 July	4-8pm
Rawcliffe Village Hall, Station Road, Rawcliffe, Goole DN14 8QR	Saturday 20 July	10am-2pm
Drax Village Hall, 38 Castle Hill Lane, Drax, Selby YO8 8NP	Monday 22 July	4-8pm
Paull Village Hall, 67 Main Street, Paull, Hull HU12 8AW	Wednesday 24 July	4-8pm
South Killingholme Community Centre, Moat Lane, South Killingholme, Immingham DN40 3EU	Thursday 25 July	4-8pm
Wootton Village Hall, Swallow Lane, Wootton, Ulceby DN39 6SG	Saturday 27 July	10am-2pm
Crowle Community Hall, Woodland Avenue, Crowle, Scunthorpe DN17 4LL	Tuesday 30 July	4-8pm
Garthorpe Village Hall, Shore Road, Garthorpe, Scunthorpe, North Lincolnshire DN17 4AD	Wednesday 31 July	4-8pm
Online webinar - register by going onto our website or emailing us	Tuesday 6 August	6-7pm

Online, over the phone or by email

If you have any questions about how to provide feedback, please do not hesitate to contact us via email or on the HCCP phone line.



info@nephccp.co.uk



0800 024 1436

(Open Monday to Friday 9am to 5pm, please leave a voicemail outside of these times)



www.nephccp.co.uk

(Scan the QR code to visit our website)



Landowner contact information

If you are a landowner affected by the proposed pipeline you should have already received a letter from us. If you would like to request a meeting, please get in touch with our dedicated team at Dalcour Maclaren on **01869 629007** or via e-mail: **HCCP@dalcourmaclaren.com**

What happens next?

The project team will review the feedback following this early-stage consultation and will consider this in the development of the design. There will then be another round of consultation before we apply for consent. At this point any updates to the design, as well as preliminary results of environmental surveys and assessments, will be shared.



You can **sign up to be notified** of the next round of consultation by emailing us on the email address listed to the left.

Paper copies of our materials are available at deposit locations along the proposed pipeline corridor. Details of these locations can be found on our website or by calling us on the phone number to the left.

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