



# Welcome to our virtual exhibition

Thank you for visiting our virtual exhibition on our early-stage proposals for the Stallingborough Combined Cycle Gas Turbine (CCGT) Generating Plant with Carbon Capture.

This consultation aims to introduce you to our preliminary proposals and seek your feedback and insight that will inform and, where appropriate, influence the design of the project as we develop it. Please let us know your views by completing our online feedback form. Additional information is available in our Document Library.

Our early-stage consultation will run from **Monday 8 April lasting for six weeks, until 11:59pm on Monday 20 May.**

The feedback we receive at this stage, coupled with the ongoing environmental and technical surveys, will play a crucial role in shaping the design of project that we will present at a further 'statutory' consultation in 2025.



The proposed site is currently an agricultural field

## Who is RWE?



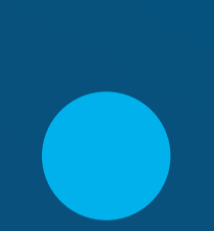
RWE is the UK's largest power company, with a clear strategy to become carbon neutral by 2040. RWE Generation UK is part of RWE AG and operates approximately 7GWe of conventional, efficient gas-fired capacity in the UK, which supports the transition to renewables by providing a reliable and flexible source of power around the clock.

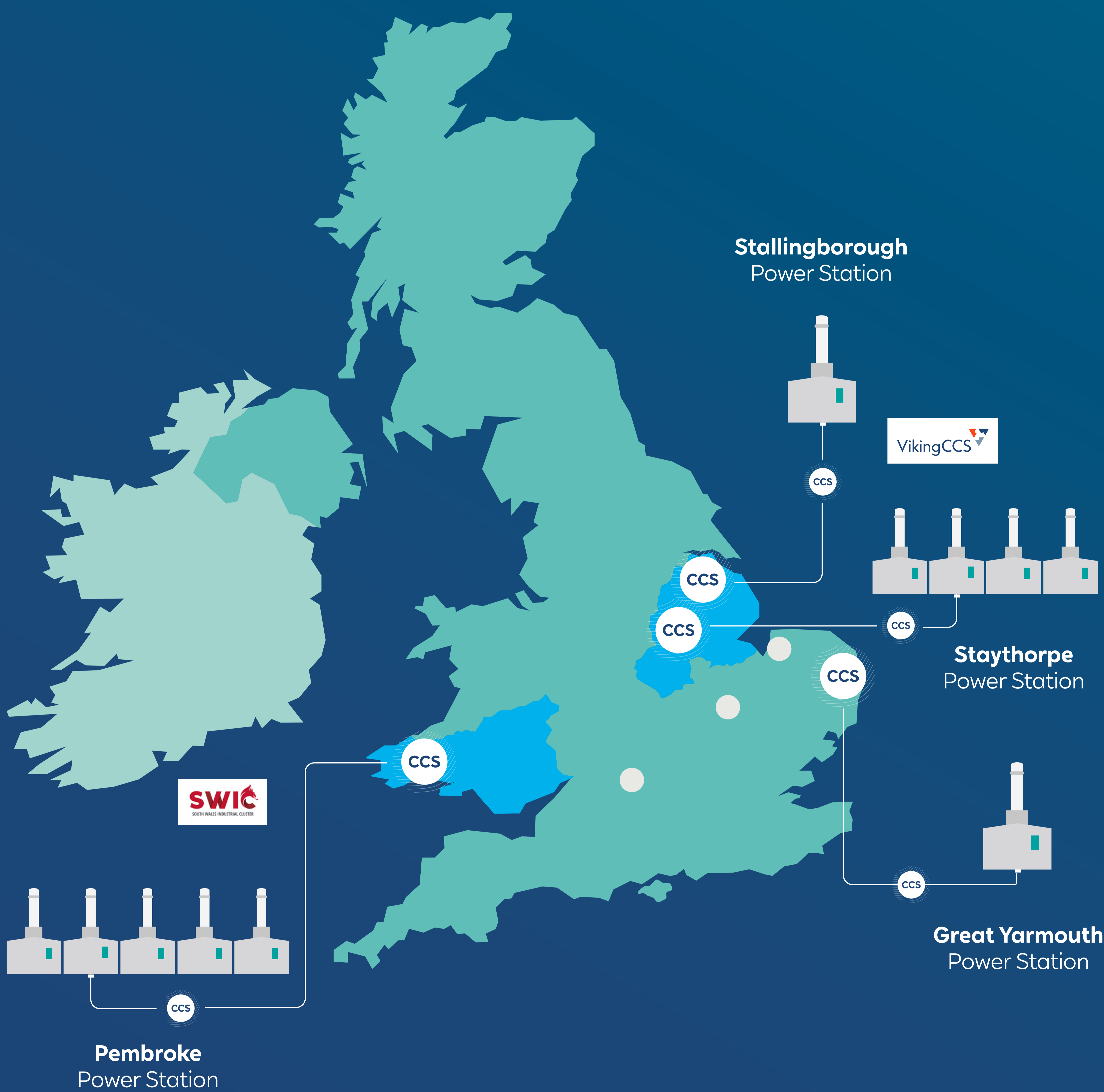
RWE includes an operational portfolio of hydro, biomass and onshore and offshore wind, with a total installed capacity of 4.6GW, plus a large pipeline of projects in development.

Beyond this proposal, other RWE projects in the Lincolnshire and Humber region include the 1.4GWe £3bn Sofia offshore wind project, currently in development in the North Sea, a solar proposal at Tween Bridge, North Lincolnshire and the state-of-the-art operations and maintenance centre, Grimsby Hub, which is currently under construction.

RWE is committed to creating long-term jobs and opportunities in the region and has invested in the CATCH facility in Stallingborough, which will support the training and development of low carbon jobs.

### Key

-  RWE's carbon capture projects
-  Other RWE gas plants \*
-  Industrial clusters where RWE is a partner organisation



\*Combined Cycle Gas Turbine (CCGT) plants

## The need for carbon capture and storage

Generating plants with carbon capture technology are essential in the UK's transition to a decarbonised energy system, through the provision of reliable, flexible power, especially on days where sun and wind resources are lower.

The role gas has played in the UK's power system has evolved over time and continues to do so. As coal and oil power stations have shut down, gas has played an increasingly central role, providing around 40% of the UK's power in 2022 and up to 50% at certain times, as well as representing a cleaner alternative to coal and oil.

In the future, carbon capture generating plants will operate alongside renewables to ensure security of supply, including during periods of low renewable generation and periods of peak demand.

RWE recognises the central role we play in helping to drive forward this decarbonisation through responsible, proactive stewardship of the UK's largest gas fleet.

### Our UK decarbonisation journey

RWE is working towards a global target of carbon neutrality by 2040.

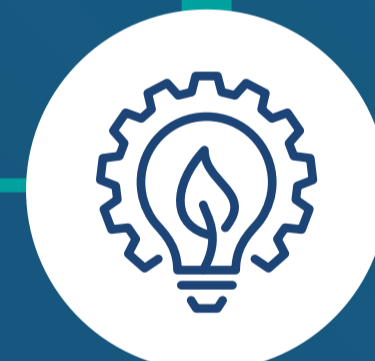
#### We are the largest power generator in the UK,

supplying around 15% of the country's electricity, including approximately 7GW of efficient gas-fired capacity and over 2.8GW of renewables in the UK.



#### We closed our last UK coal plant in 2020.

We have cut the carbon intensity of our UK electricity generation by 43% since 2012.



#### We plan to invest €8 billion net into new clean energy infrastructure in the UK from 2024 to 2030.

Our plan supports the UK government's target to decarbonise the electricity system by 2035 and provide security of supply.



#### Prioritising four projects for decarbonisation;

- 1 Existing plant at Staythorpe (CCS)
- 2 Existing plant at Pembroke (CCS and/or H2)
- 3 A new build Combined Cycle Gas Turbine generating plant (CCGT and CCS) near Stallingborough.
- 4 Existing plant at Great Yarmouth (CCS)

These sites cover more than 60% of RWE's total UK gas generating capacity, and represent the first step in decarbonising our gas fleet.



#### Combined these projects will deliver:

- A Approximately 4.5 GW of secure, flexible, low carbon energy – enough to power around 8.1 million homes.
- B Capture approximately 11 million t/year of CO<sub>2</sub>, the equivalent of removing 2.2 million petrol cars from the road.
- C Support and create 300+ high quality, long-term operational jobs and thousands of jobs during construction and in the supply chain.

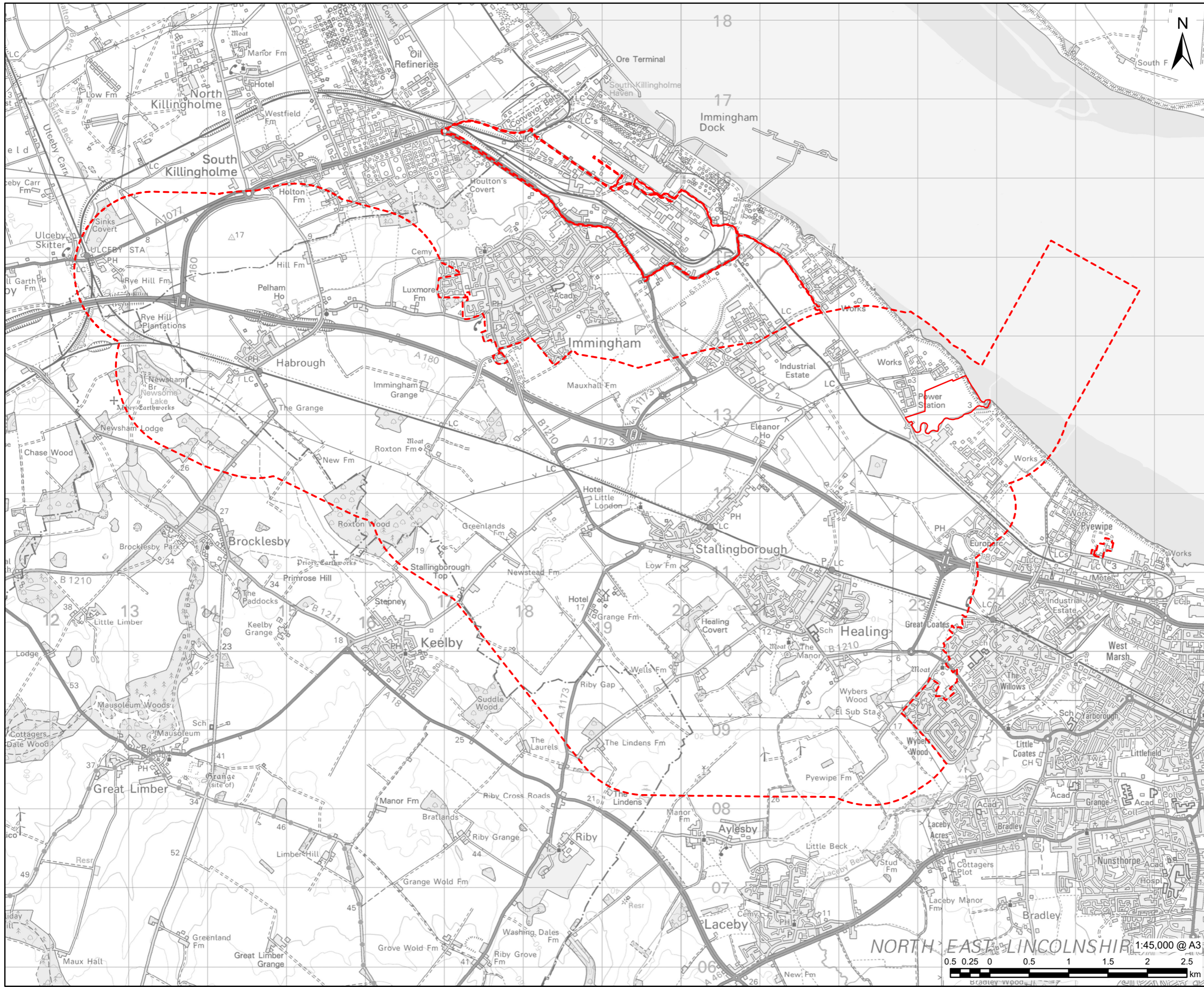


#### Our ambition is to have the first of our fleet decarbonised by 2030.

We will take learnings from these projects to identify opportunities in decarbonising the remainder of our gas generation fleet.

2040





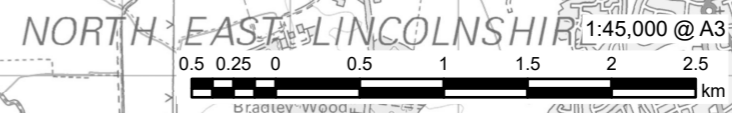
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**ISSUE PURPOSE**  
 Non-Statutory Consultation

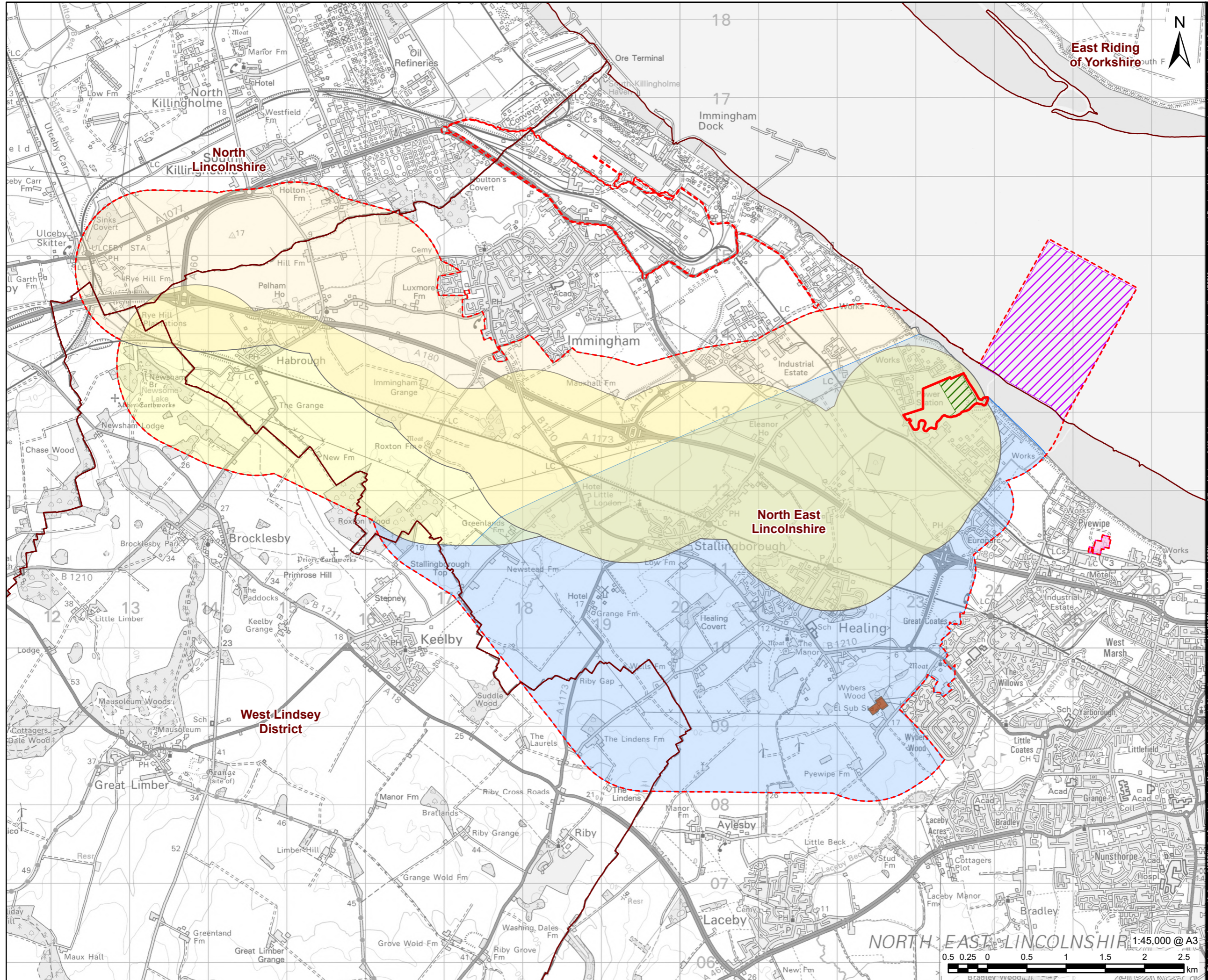
**PROJECT NUMBER**  
 60714932

**FIGURE TITLE**  
 Indicative Site and Main Site Boundaries

**FIGURE NUMBER**  
 Figure 1B



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**PROJECT**  
 Stallingborough CCGT  
 CCP Project



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- LEGEND**
- The Site
  - Main Site
  - District / Unitary Authority Boundary
  - Existing National Grid Grimsby West Substation
  - Proposed Gas Pipeline Route Corridor A
  - Proposed Gas Pipeline Route Corridor B
  - Proposed Electrical Grid Connection Route Corridor
  - Strategic Mitigation Site
  - Off-Site Potential Laydown Area
  - Potential Abstraction and Discharge Locations Area

**NOTES**

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**ISSUE PURPOSE**  
 Non-Statutory Consultation

**PROJECT NUMBER**  
 60714932

**FIGURE TITLE**  
 Indicative Site Layout

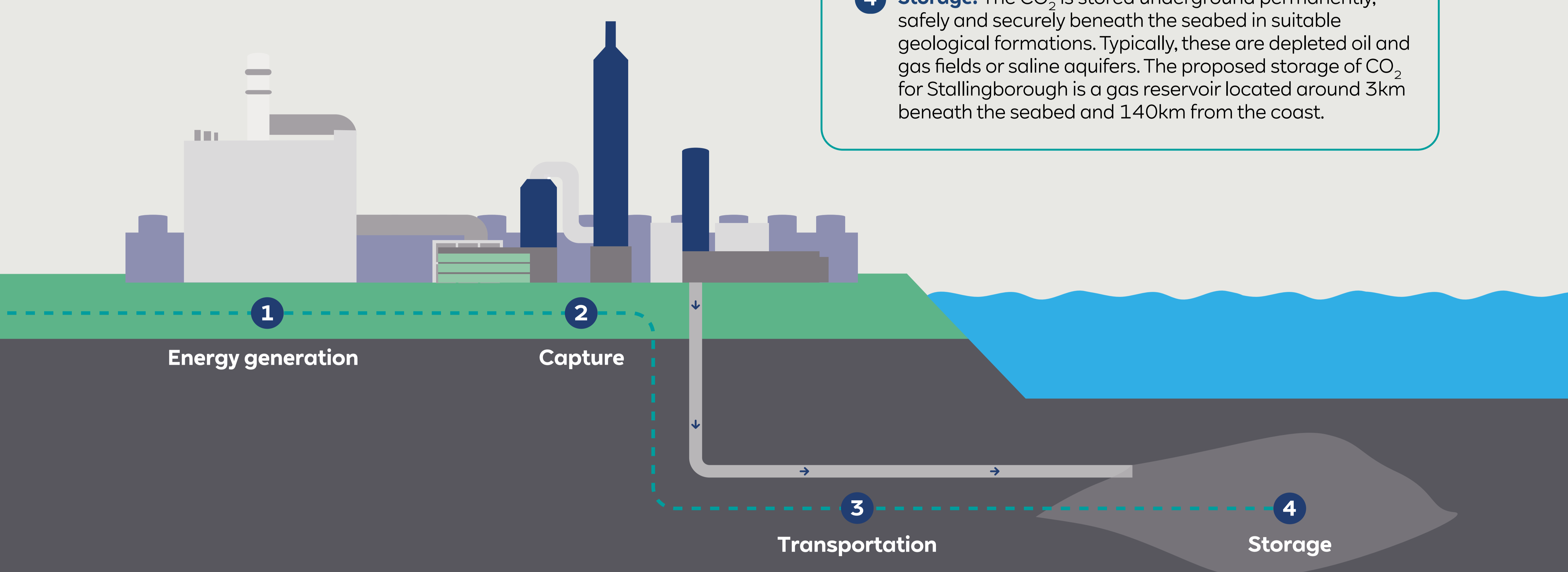
**FIGURE NUMBER**  
 Figure 1C

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## Carbon Capture and Storage

Carbon capture is a proven and safe technology which will help support the transition to net zero by supporting the delivery of reliable and flexible electricity that works alongside renewables generation.

- 1 Energy generation:** Carbon dioxide (CO<sub>2</sub>) emissions are produced during the combustion of natural gas for the generation of electricity by a Combined-Cycle Gas Turbine (CCGT) power station.
- 2 Capture:** CO<sub>2</sub> is captured from the flue gas with a proven and already applied process.
- 3 Transportation:** The captured CO<sub>2</sub> will be compressed and transported via a pipeline.
- 4 Storage:** The CO<sub>2</sub> is stored underground permanently, safely and securely beneath the seabed in suitable geological formations. Typically, these are depleted oil and gas fields or saline aquifers. The proposed storage of CO<sub>2</sub> for Stallingborough is a gas reservoir located around 3km beneath the seabed and 140km from the coast.



The Stallingborough CCGT Generating Plant with Carbon Capture will connect into a carbon transportation pipeline, via a new spur line, which is expected to transfer the captured carbon to offshore storage facilities beneath the North Sea. RWE is a member of the Viking CCS Cluster.

### Viking CCS comprises:

- A new onshore pipeline from Immingham to Theddlethorpe
- Repurposing of the existing Lincolnshire Offshore Gas Gathering System (LOGGS) pipeline
- Offshore storage beneath the North Sea

A DCO for the Immingham to Theddlethorpe pipeline has been accepted for examination by the Planning Inspectorate. More information about Viking CCS can be found on their website - [www.vikingccs.co.uk](http://www.vikingccs.co.uk).

## Our proposals

The site for the proposed Stallingborough CCGT Generating Plant with Carbon Capture is located on Hobson Way, approximately 3.5km to the east of Stallingborough village. It offers an ideal location for energy development. Located within an established industrial area of the South Humber Bank and within an area that is allocated for industrial development. The area also has a great history of industrial and energy generation with the local skills and expertise to support the site.

### The Project

The state-of-the-art generating plant will help to deliver a reliable, low carbon supply of electricity to the grid during periods where renewable energy generation is low.

The project will be made of a number of component parts including:

- A combined cycle gas turbine generating plant and associated infrastructure
- Water cooling infrastructure (likely to be abstracted from the Humber Estuary) required as part of the operational processes for the generating plant
- Carbon capture infrastructure to capture the carbon dioxide (CO<sub>2</sub>) in the flue gas emitted during the combustion of natural gas
- Supporting infrastructure such as:
  - Gas pipeline to supply the fuel to the generating plant
  - Electricity connection to a National Grid Substation

### If consented the project could deliver a number of benefits including:



**900MWe**

a gross output capacity of up to 900 megawatts (MWe) of decarbonised, secure, flexible energy – enough to power around 1 million homes.



**2 Mt/year**

Up to 2 million t/year of CO<sub>2</sub> captured, the equivalent of removing 400,000 petrol cars from the roads



**50+ jobs**

Support approximately 50 high-quality, long term operational jobs



**1000s**

Support thousands of jobs during construction and in the supply chain

## The project area

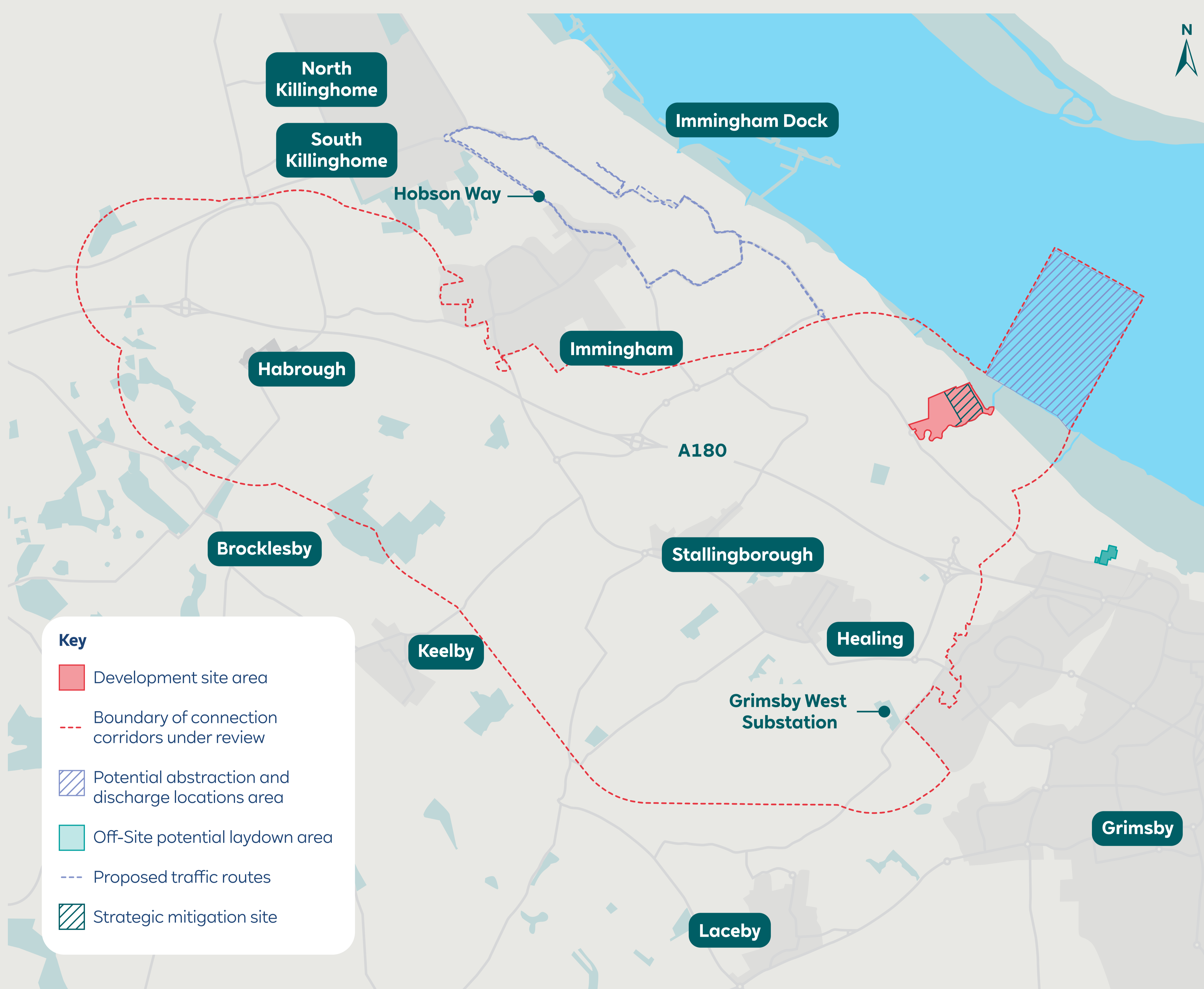
The below map shows the current project boundary, including the corridors for the gas pipeline and electricity connection.

Access to the main site during construction and operations will be from Hobson Way. During construction, some larger items of plant may be transported to the site by sea and unloaded at Immingham Port. These items would then be transported by road the short distance to the site. The proposed project boundary includes this road network as we may be required to undertake roadworks to modify the existing infrastructure to accommodate some of the largest abnormal loads required for the construction of this project.

The map also shows a small area identified as an off-site laydown area. This is on the Grimsby Combined Heat and Power (CHP) plant, which is a nearby site owned by RWE. It is no longer operating and is due to be demolished in 2024. This area could potentially be used as an additional laydown area during construction of the generating plant.

The area shown in the Humber Estuary is for cooling water structures. The generating plant and carbon capture facilities will require water for cooling. This cooling water is likely to be abstracted from the Humber Estuary using offshore water intake and outfall structures located within the Estuary. We are aware of the Humber Estuary's importance for nature conservation and industry and will be undertaking surveys and assessments to understand any effects as part of our Environmental Impact Assessment.

The project boundary shown at this consultation will be refined as we continue to progress our design and technical work.





## Connecting the project

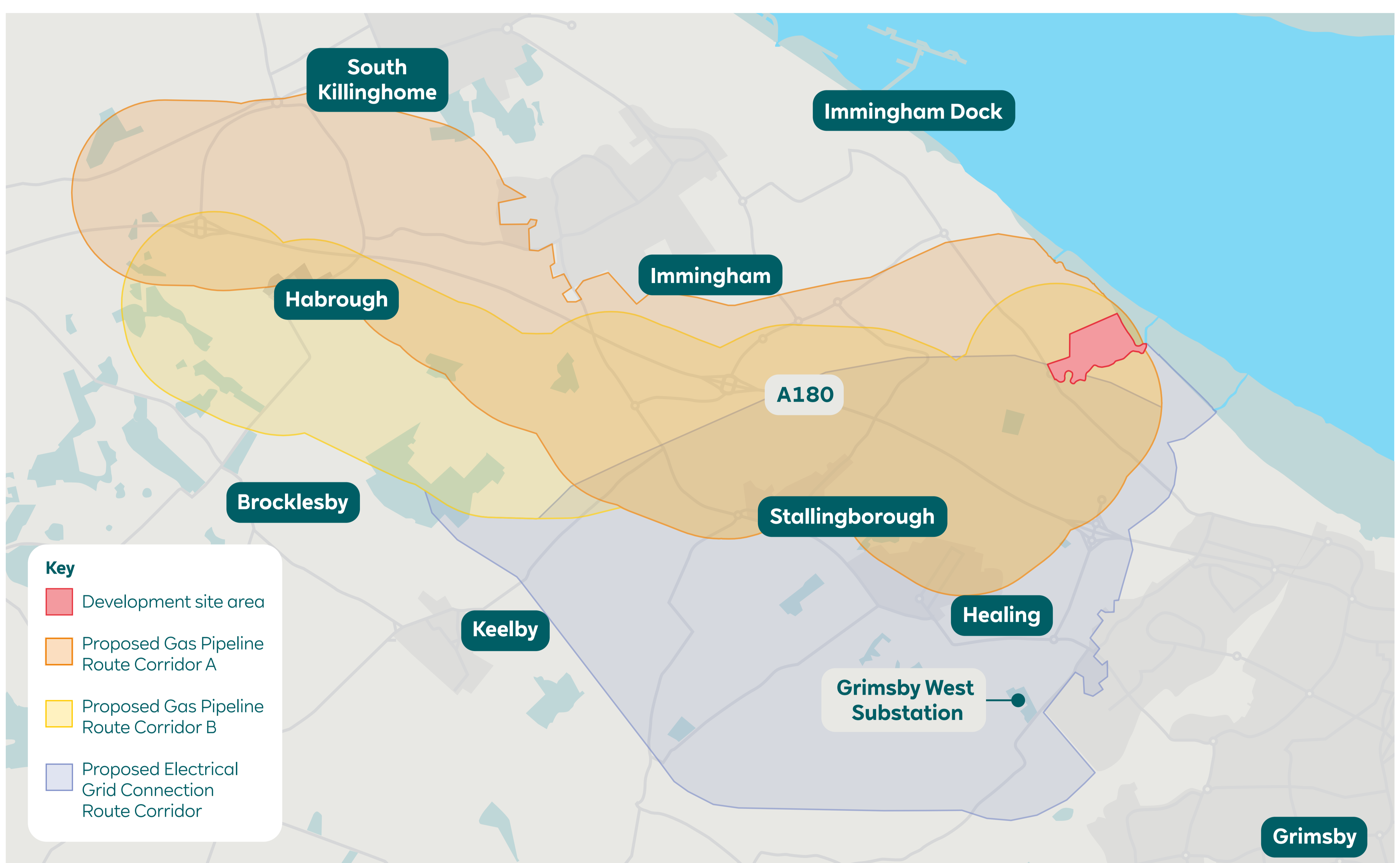
The Stallingborough CCGT Generating Plant with Carbon Capture Project will be fuelled by natural gas and therefore will require a new gas pipeline from the main gas transmission network (around 12km away) that runs from Easington to Hatton (Lincolnshire).

As part of the route lies within North Lincolnshire, we will be consulting with North Lincolnshire Council as the host authority as part of the proposals.

The generating plant will require an electrical connection, to the National Grid Grimsby West Substation (around 4km away or potentially another substation that may be planned as part of the Grimsby to Walpole upgrade), where it will transfer the electricity to the national network.

We're exploring options for the connection to the substation, including if it will be via underground cables or overhead lines or a combination of both.

Our current map reflects this ongoing assessment and covers a wider area than the final electrical and gas connection routes. We are in the process of undertaking studies to ensure the most appropriate routes are selected. **It is important to note that no electrical apparatus/cables or pipelines will be installed under residential properties or within residential gardens.**



## DCO Process Explained

As the project would generate over 50MWe, it is classified as a Nationally Significant Infrastructure Project (NSIP) and as such we will be submitting a Development Consent Order (DCO) to the Planning Inspectorate (PINS). The final decision on whether the project is consented will be made by the Secretary of State for Energy Security and Net Zero.

### The DCO process involves several stages:

#### 1. Pre-application stage:

The developer engages in public consultation and prepares a detailed application, including an Environmental Impact Assessment (EIA) and other supporting documents.

#### 2. Submission:

The developer submits the application to the Planning Inspectorate, which examines it for completeness.

#### 3. Examination:

Planning Inspectorate conducts an examination process, including public hearings, to assess the application's merits, environmental impact, and public opinion.

#### 4. Decision:

The Secretary of State reviews the examination report and makes a decision to grant or refuse the DCO. This decision is based on the project's national significance, environmental impact, and other relevant factors.

For our application to be accepted by PINS we must satisfy them that we have undertaken robust consultation for the project with statutory consultees (such as North East Lincolnshire Council) and with local communities.

RWE is committed to meaningful engagement and ongoing dialogue with the local community.

To achieve this, we want to ensure that there is ample opportunity for local input and are taking a two-stage programme of community engagement and consultation. This goes beyond the requirements of the DCO planning process.





# The Environmental Impact Assessment (EIA)

We will be undertaking a number of surveys and assessments to understand the potential environmental impact of the proposals. The assessments will seek to minimise impacts on plant and infrastructure while ensuring biodiversity net gain (BNG). EIA is crucial for understanding the local environment and considering effects early to avoid, reduce, or offset them, ensuring informed decisions are made about the development of the project. The initial stage of the EIA process is the scoping phase. Our EIA scoping report has been submitted to the Planning Inspectorate and we received a scoping opinion in March 2024.

## A summary of the impacts we will be assessing is below:

**Landscape and Visual Impact:** Assessments will consider effects on the local landscape and visual amenity, with recommendations for mitigation. The goal is to design the project to minimise visual impact.

**Heritage:** Cultural Heritage and Archaeology assessments will identify impacts on the local historic environment, with strategies to mitigate effects on features such as listed buildings and monuments.

**Noise:** Assessments will evaluate potential noise and vibration effects, with measures to reduce noise at the source and incorporate sound attenuation into the project's design.

**Traffic and Access:** A transport assessment will analyse impacts on the road network, with sustainable transport measures planned to minimise disruptions. Suitable access points and routes will be developed in consultation with local authorities.

**Water Environment and Flood Risk:** Assessments will address water supply for cooling purposes, flood risk, and drainage strategies, particularly concerning watercourses like the Humber Estuary.

**Air Quality:** An air quality impact assessment will be conducted to assess existing air quality and identify mitigation measures for construction and operation, as part of obtaining an Environmental Permit.

**Environmental Permit:** The project requires an Environmental Permit from the Environment Agency, covering various aspects such as air emissions, fuel storage, water treatment, and discharge, with monitoring and reporting requirements to ensure compliance with environmental regulations. This is separate from the EIA process.



## Next Steps

**Thank you for visiting our consultation event. Your involvement in this consultation is invaluable at this early stage. We want to gain feedback from the local community, so please complete the feedback form on our website.**

Alternatively, you can provide your views by contacting us at:

 [info@stallingboroughccs.com](mailto:info@stallingboroughccs.com)

 01469 818004

 FREEPOST RWE Decarbonisation

**The deadline for the non-statutory consultation is 11:59pm on Monday 20 May 2024.**

We encourage you to provide your feedback within this period to ensure that your comments are considered as we further refine our proposals.

### Indicative project timeline

