



# PRE-APPLICATION STAGE ONE CONSULTATION OVERVIEW DOCUMENT



# FOSSIL TO FUSION

I'm delighted to announce the first stage of public consultation for the Development Consent Order (DCO) planning process for STEP (Spherical Tokamak for Energy Production) Fusion. This is a critical step towards building a prototype fusion power plant at West Burton. The STEP programme is the centrepiece of the UK's fusion programme, which is supported by over £2 billion of Government investment over five years that will maintain the UK's lead in this exciting new technology.

Our vision for the Site and surrounding region goes beyond that first plant – we have been tasked by UK Government to demonstrate a route to commercialisation of fusion energy and in doing so deliver economic growth across the UK with a specific focus on our host regions of East Midlands and Greater Lincolnshire. Working with our local partners we aim to drive innovation, create a thriving supply chain, and bring high-quality long-term employment.

The West Burton Site would not only host the prototype fusion power plant but may also become home to an Innovation and Science Park. This would be for companies engaged in fusion and adjacent research and development, or in component manufacturing, as well as potentially a visitor and training centre. There is huge potential at the West Burton Site, and even greater potential in the region beyond, and that is why we are working closely with the East Midlands Combined County Authority, and the Greater Lincolnshire Combined County Authority, on the Trent Clean Energy Supercluster plans.

This Stage One consultation focuses on the prototype fusion power plant and associated key facilities on- and off-Site. Other smaller pieces of infrastructure may be addressed through locally determined planning permissions.

More information on the overall STEP ambition will come in due course. For now, I ask you to give your views on our proposals set out in this document. This is the first of several stages of consultation and your feedback will be invaluable to us as we continue to develop and finesse our plans in the coming months and years.

Paul Methven CB  
CEO, UKIFS



# CONTENTS

INTRODUCTION	4	WALKING, CYCLING AND PUBLIC RIGHTS OF WAY	18
SCOPE OF CONSULTATION	5	CONSTRUCTION	20
WHAT IS FUSION?	6	LANDSCAPE AND HISTORIC ENVIRONMENT	22
WHAT IS STEP FUSION?	7	CLIMATE AND GHG EMISSIONS	23
WHERE IS IT?	8	ENVIRONMENT	24
WHY THIS SITE?	9	WATER	25
BENEFITS TO THE COMMUNITY	10	YOUR FEEDBACK IS IMPORTANT!	26
SKILLS, TRAINING AND SUPPLIERS	11		
PERMANENT INFRASTRUCTURE	12		
TEMPORARY WORKS	13		
TRAFFIC AND TRANSPORT	14		
ROADS	16		

# INTRODUCTION

This document provides an overview of the initial proposals for our plans to deliver a prototype fusion power plant and associated development (“the Project”), central to the STEP Fusion programme. For more detailed information please read the Consultation Report. This is the first stage of consultation prior to applying for a Development Consent Order (DCO) to construct and operate a prototype fusion power plant.

The DCO process is managed by the Planning Inspectorate on behalf of the Secretary of State for the Department for Energy Security and Net Zero (DESNZ). It is a formal planning process with distinct stages. Currently we are at the pre-application stage.

To find out more information on the DCO process you can visit the Planning Inspectorate's webpage at [www.national-infrastructure-consenting.planninginspectorate.gov.uk/decision-making-process-guide](http://www.national-infrastructure-consenting.planninginspectorate.gov.uk/decision-making-process-guide).

## What happens after this consultation?

We welcome your feedback on our initial proposals for the Project and are committed to considering all responses received during all stages of consultation. We will collate and analyse feedback and identify common themes and specific matters that require a change to the Proposed Development.

We plan to hold at least one further stage of consultation as our proposals develop, where we will share how the Project has changed because of feedback and the findings of our ongoing studies and assessments.

In our application for development consent we will summarise the feedback received at each stage of consultation and explain how we have considered the feedback in the refinement and finalisation of the Proposed Development. Similarly, for feedback that is considered but not incorporated into the final Proposed Development, we will explain why.

## Pre-application

- The applicant prepares the application, developing the project proposals
- Information about the Project is published in the local area and consulted on

## Submission and acceptance of the application

- The Planning Inspectorate has 28 days to decide whether to proceed
- The adequacy of consultation forms part of the Inspectorate's decision

## Pre-examination programme

- Individuals can register as interested parties
- Inspectors will hold a preliminary meeting and set the examination

## Examination

- The Inspectorate has six months to carry out the examination

## Decision

- The Inspectorate will make a recommendation to the Secretary of State
- The Secretary of State makes their decision

## Implementation

- The applicant discharges requirements and conditions
- The applicant starts construction

DCO Stages

# SCOPE OF CONSULTATION

This Stage One consultation presents our vision and emerging proposals for the design, construction and operation of the Project and its associated development. It is the first opportunity for you to provide feedback so that we can take it into account as we develop our proposals.

At Stage One we are seeking views on our project aims and overall proposals at the Site. We encourage you to share your comments with us at this early stage.

The need for the Project is established in the Government's NPS EN-1, and its intention to designate NPS EN-8. These policies are supported by the Government's 2025 Infrastructure Strategy. Therefore, the need for the prototype fusion power plant is outside the scope of this consultation.

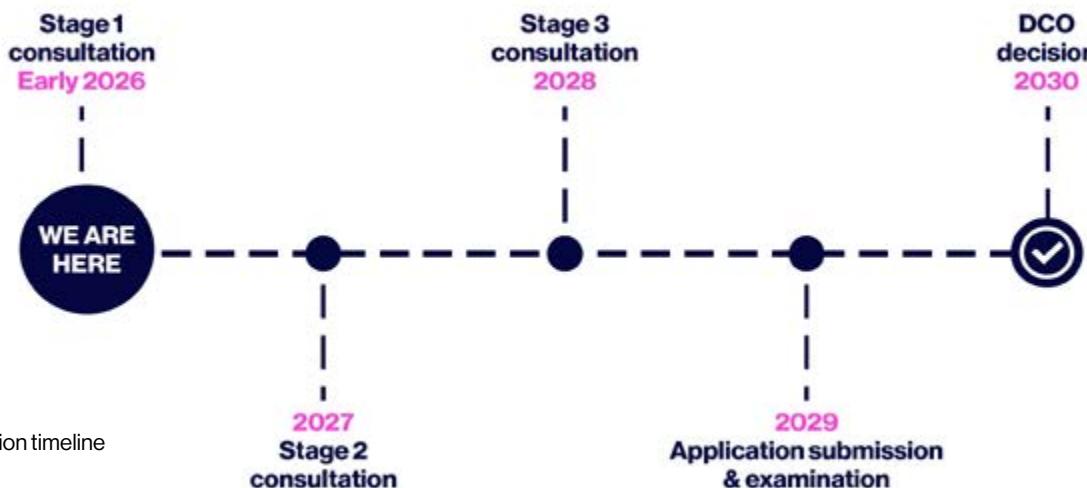
## This Consultation Overview includes:

- information on those aspects of our proposals that are not likely to be influenced by consultation because they are driven by statutory regulations and important technical considerations (e.g. safety and efficiency), but provide useful context and details for consultees; and
- information on those aspects of our proposals that we welcome feedback on and that will be influenced by responses to the consultation and/or further technical and environmental studies.

## At this stage, we are particularly seeking your views on:

- our emerging proposals for the Project;
- our overall strategy for people and the movement of construction freight and workforce;
- options for the associated development needed to support the construction and/or operation of the prototype fusion power plant; and
- the potential effects of the Project on the local area and community, both positive and negative, and how we can maximise the benefits and mitigate the disbenefits.

We will undertake further stages of consultation once we have further developed our proposals and underpinning technical and design development studies, as well as having analysed the feedback received from this Stage One consultation.



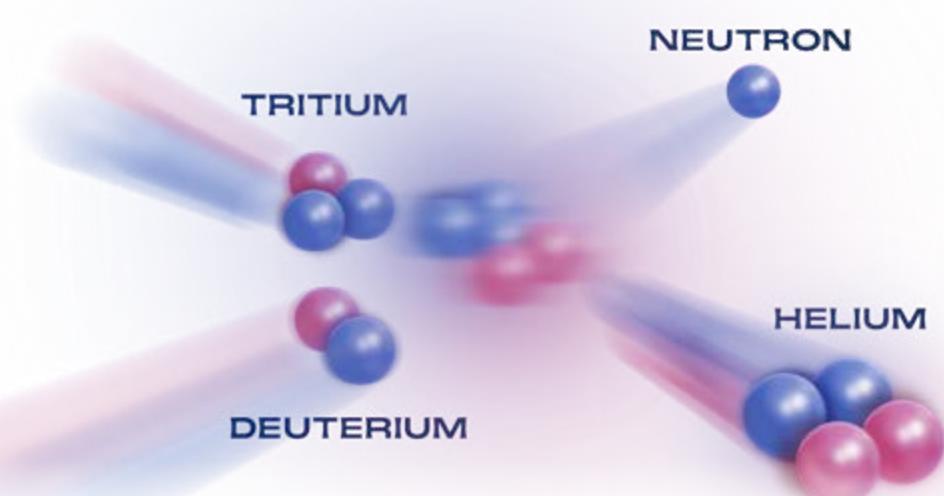
# WHAT IS FUSION?

Fusion is one of the most promising options for generating the clean energy the world needs. Fusion is the process that takes place within the sun and stars, and scientists and engineers are working to make fusion a commercially viable form of electricity production. In time, fusion could be one of the few options for supplying large amounts of continuous power to our energy grid, and to homes and businesses. The fusion process could provide a safe, abundant source of carbon-free energy, so it could be an environmentally responsible part of the world's energy supply in the second half of this century.

## Why is it important?

UK Government recognises the UK's globally renowned strength in fusion research and development, with a cluster of world-leading capabilities and companies which can help accelerate the development of commercial fusion in the UK.

As such, the Government is investing billions of pounds in fusion, recognising the technology's potential role in creating limitless, carbon-free energy. The Government is particularly keen to support the development of fusion as it could enhance global energy sustainability and meet the rising demand for electricity, as we shift away from using fossil fuels. A limitless supply of energy could improve energy security and reduce reliance on foreign energy sources.



# WHAT IS STEP FUSION?

UK Industrial Fusion Solutions Ltd (UKIFS), a wholly owned subsidiary of the UK Atomic Energy Authority (UKAEA) Group, will lead the delivery of the STEP programme to design and build the UK's first prototype fusion power plant at West Burton.

We will build a prototype fusion power plant that will demonstrate net energy, fuel self-sufficiency, a viable route to plant maintenance, as well as delivering broad economic and social benefits to the UK along the way. This will potentially pave the way to develop a fleet of fusion power plants in the UK and around the world, and the commercialisation of fusion energy to help power our homes and businesses in the second half of this century.

## THE OBJECTIVES OF THE STEP FUSION PROGRAMME ARE TO:

- 1. Technical delivery** - design, build and operate a prototype fusion power plant to demonstrate the key characteristics relevant to commercial power plants.
- 2. Commercial Pathway** - capture information through design, build and operations that will speed the delivery of commercial fusion at the lowest practicable cost and greatest benefit to the UK.
- 3. Develop a Fusion Supply Chain** - through the delivery of the Project, develop a supply chain capable of, and committed to, the design and build of fusion power plants.
- 4. Deliver UK Economic Value** - deliver direct UK economic value stemming from delivery of the Project, consistent with other objectives.
- 5. Deliver UK Social Value** - deliver UK social value stemming from delivery of the Project, consistent with other objectives.
- 6. Deliver Safely** - reduce risks to workers, the general public and the environment throughout the delivery and operation of the Project to as low as reasonably practicable.
- 7. Schedule** - deliver the prototype fusion power plant demonstrations and wider benefits as fast as reasonably practicable, underpinned by a robust whole programme schedule.
- 8. Cost** - deliver the prototype fusion power plant demonstrations and wider benefits at the lowest practicable capital cost, underpinned by a robust whole programme cost estimate.

# WHERE IS IT?

The Site is located in Bassetlaw District, in the north of Nottinghamshire, on the border with Lincolnshire and close to South Yorkshire.

The Site is approximately 330 hectares in size.

The Site is bounded by the River Trent to the north and east, by the railway line to the west, and by South Road and adjacent land to the south.



## Key

- Site
- Railway line
- Railway station
- Road network
- Water

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0 2 4 6 8 10 km



Location of STEP Fusion at West Burton

# WHY THIS SITE?

Aerial photograph of the old West Burton power station

The coal-fired power station communities along the River Trent, which were known locally as 'Megawatt Valley', have been powering the UK for 60 years and are proud of that energy generation heritage.

We plan to build the Project on the site currently occupied by the West Burton A coal-fired power station, owned by EDF, which is being demolished. Its neighbour West Burton B gas-fired power station is operated by West Burton Energy, which continues to generate electricity.

The Government's search for a site for a fusion prototype power plant began in December 2020. Regions across England, Scotland and Wales were invited to nominate sites demonstrating 'the right mix of social, commercial and technical conditions to host the new plant – such as adequate land conditions, grid connection and water supply'. The sites put forward by various organisations went through two rounds of assessment, which included extensive community and stakeholder engagement as well as technical and socio-economic assessments. This analysis enabled a decision on the successful site to be made by the Secretary of State in 2022.

The Secretary of State identified the West Burton Site as the most appropriate on the following basis:

- **Location:** It is a brownfield site that is already used for energy production.
- **Connectivity:** The Site is well connected to transport routes and the electricity grid.
- **Legacy:** The area, known as Megawatt Valley, has been powering the UK for over 60 years.



# BENEFITS TO THE COMMUNITY

Fusion technology is at the forefront of cutting-edge scientific development, and the opportunities for local people to be a part of this exciting journey are wide-ranging – and exciting.

Building on an established legacy of power generation in 'Megawatt Valley', we intend for the Project to have a transformational impact on the local area and region – this is built into our core objectives for the Project. Our funding is provided in part to grow the economic and social benefits of the Project in the local area, enhancing and revitalising the local economy and surrounding communities. These are also aims of the Trent Clean Energy Supercluster.

The Project could deliver several significant long-term benefits to the local, regional, and national economies, in the form of:

- **Jobs:** Thousands of highly-skilled, well-paid, high-productivity jobs would be created during construction and operation. The Project could help create a wider range of job opportunities, at different skill levels, with the additional benefit of long-term employment for local communities.
- **Skills and training:** We are committed to on-the-job training in the form of apprenticeships and placements, including support for local people. Many of these opportunities would be in construction and engineering.
- **Business opportunities:** The Project would create significant supply chain opportunities for local businesses, and businesses elsewhere in the UK as well.
- **Local economy:** More economic and community activity in the area would result in an increase in spending on local goods and services.



# SKILLS, TRAINING AND SUPPLIERS

The Project would require highly skilled construction workers as well as permanent workers to operate the Project once it is built. We would have a comprehensive programme to:

- Upskill local workers for jobs during the construction phase and in operations.
- Ensure the Project is appropriately resourced by providing training to workers who move to the area to work on either the construction or operational phases of the Project.

STEM skills would be in particularly high demand for the operational phase of the Project, as well as catering, hospitality, business administration, transport, and project management. We intend to create apprenticeships and training programmes and enhance transferable skills for workers at UKIFS.

## Permanent jobs

The Project would create many new permanent operational jobs to meet its scientific, industrial and logistical demands. These roles would reflect a variety of entry-level opportunities in science, engineering, Project management, administration, maintenance, security, and welfare, and a broad set of activities in supply chains across the local and wider areas.

## Construction Workforce

The scale of the opportunity for construction employment, training and contracts in the supply chain is significant. Over the course of its circa 10-year construction phase, our current best estimate is that the project would employ approximately 8,000 workers at peak, with this number varying according to the stage of construction.

The Project could create 59,600 years of employment in activities off-Site in the supply chain and further employment in the local economy generated from spending by employees.

We want local people to benefit from the wide range of employment opportunities during the construction phase and estimate that 60% of the construction workforce could commute from their own homes to the Site.

## Local Business Opportunities

Our construction partner will be contractually committed to local procurement and supply chain development and we are already engaging with local businesses interested in becoming suppliers to the Project.

Our development activities with the supply chain and the scale of demand from the Project could underpin substantial, regional economic benefit.

We will continue to host 'meet the buyer' events and ensure supplier opportunities are advertised locally. The STEP Fusion procurement portal contains details of existing opportunities and can be found at [stepfusion.com/supply-chain/](http://stepfusion.com/supply-chain/)



# PERMANENT INFRASTRUCTURE

The Permanent Development at the Site would comprise a prototype fusion power plant and associated permanent infrastructure, which supports the operation and maintenance of the power plant. This would include, but is not limited to:

- transport and logistics infrastructure, which could include a river handling facility; accesses and highway works; parking areas; and rail infrastructure
- a prototype fusion power plant and control room
- additional supporting facilities and equipment to enable the operation of the power plant, including storage facilities, system testing facilities, component manufacturing and assembly facilities
- fuel cycle facilities for the processing and storage of fuel
- cooling water infrastructure, including water treatment plant and pump house
- offices and staff facilities, including administration, training facilities and welfare facilities
- electrical equipment, including a substation, switch yards and transmission infrastructure

The final design and layout, including the location of key aspects such as the prototype fusion power plant, is subject to a range of considerations. These are guiding the development of the design, to establish a masterplan which balances a range of factors and priorities.

Fusion will produce waste like any other industry. However, unlike nuclear fission, no high level waste is produced by fusion reactions. This is why the Project will be regulated by the Environment Agency and Health and Safety Agency, not by nuclear regulators, in recognition of fusion's intrinsically lower hazards.

When the prototype fusion power plant reaches the end of its life, it would be safely decommissioned in line with our decommissioning strategy and national regulatory requirements. This means the Site would be cleaned, equipment removed, and the land restored for future use.



Illustrative Masterplan

# TEMPORARY WORKS

Constructing a development of this magnitude requires the completion of temporary works and logistics planning. The temporary development proposals include activities both at the Site as well as some necessary off-Site work.

## Key

- Site boundary
- Railway line
- Railway station
- Site access
- River Trent
- Public rights of way
- Medieval Village (Scheduled Monument)
- Green assets
- National Grid (NG) substations
- National Grid (NG) overhead lines and pylons

- WBB West Burton B
- WBC West Burton C
- Proposed development
- Land safeguarded for innovation and science park
- Plant complex
- Public transport interchange
- Office and staff facilities
- Potential river handling facility location
- Rail freight facility
- Road network



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## Construction

Construction of the prototype fusion power plant and its supporting infrastructure would be carried out in phases from preparing the Site through to delivering an operational fusion power plant.

At this stage, it is anticipated that the construction and temporary development phase of the Project is likely to include the following components:

- Temporary Site Access Points
- Environmental Mitigation Works
- Site Establishment and Welfare Facilities
- Temporary Utilities
- Temporary Sewage Treatment Plant
- Temporary Rail Facilities
- Temporary River Handling Facilities

- Haul Road Connecting River Handling Facilities to Site
- On-Site Road Network
- On-Site Concrete Production and Fabrication Yard
- Material Stockpiles and Off-Site Storage
- Foundations for Temporary Works

## Clearing and Preparing the Site

The demolition of West Burton A is underway, with a planned end date of 2028. Ash recovery works are also underway. Ground improvement of the existing ash disposal area will also be necessary to enable construction activities to start. However, other works may be required, and details of these will be shared with the community and other stakeholders at the appropriate time. Any necessary permissions and other consents would be secured ahead of the works taking place.

In developing the detail, we will ensure our plans for site clearance and preparation take account of the existing land uses on the Site, including sensitive biodiverse areas.

# TRAFFIC AND TRANSPORT

We are developing a transport strategy that sets out our initial proposals for the movement of freight and people, focusing on the construction phase, when transport and traffic impacts are likely to be at their greatest.

Our transport strategy is based on promoting the most sustainable forms of transport, to reduce reliance on the road network. This will focus on two strands:

**Freight transport** – aiming to:

- Reduce construction traffic, such as HGV journeys, by maximising the use of the railway and the River Trent to transport bulk materials to and from Site.
- Utilise the River Trent where possible to transport particularly large deliveries, called 'abnormal indivisible loads' (AILs).
- Implement a range of measures to manage HGV traffic on local roads.

**Construction workforce** – aiming to:

- Explore the possibility of moving construction workers to the Site by rail.
- Reduce construction worker traffic on the roads near the Site, by developing Park and Ride facilities which would take workers to the Site by a dedicated bus service, limiting on-site parking and encouraging car sharing.

The Project could not eliminate every transport impact or existing issue on the local transport network. However, the aim is to significantly reduce and manage transport impacts, through mitigation if necessary, during the construction and operational phases.

## Rail

The emerging freight transport strategy aims to maximise the use of the railway to transport construction materials, and where feasible, to minimise the number of HGV movements on local roads travelling to and from the Site.

There is already rail infrastructure on the Site, which was used to transport coal to West Burton A during its operation. Our initial assessments indicate that these facilities would need to be altered in order to support the Project. We are undertaking design work to see how we can best accommodate a new rail freight facility on Site to enable the transportation of materials to and from the Site by rail.

We will also need to ensure that the proposed rail freight operation could run alongside any passenger operation, if identified as practicable.

Where feasible, as many workers as possible would be enabled to travel to the Site by rail, thereby relieving pressure on roads and supporting sustainable travel aspirations. However, as the Project's construction would require significant volumes of bulk materials, it is crucial that any enhanced rail passenger service provision does not compromise the construction freight operation.

## River

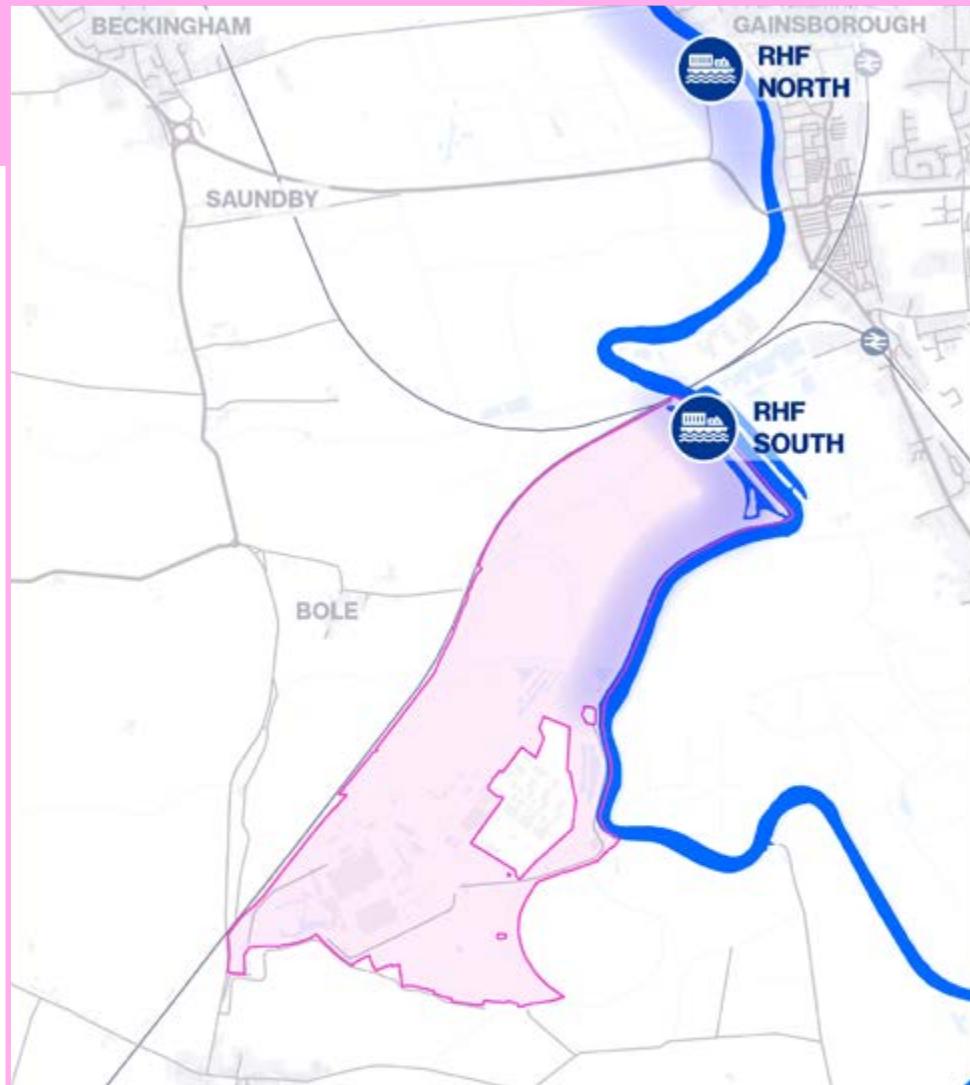
The emerging freight transport strategy aims to maximise the use of the River Trent to transport AILs and suitable bulk materials, where feasible.

To transport freight along the river, we may need two River Handling Facilities (RHF): RHF South, located at the Site; and RHF North, north of Gainsborough Road Bridge.

We estimate that the AIL deliveries would be evenly accommodated across the two RHFs. RHF North, if built first, could also be used as an early construction wharf for mobilisation of the construction phase. RHF South could also handle the import of construction materials and spoil removal.

Ideally, we would have only one RHF (RHF South), located at the Site, to minimise the need for additional transportation of freight once it has arrived at the Site. However, initial investigations have shown that some of the AILs may not be able to pass beneath the A631 Gainsborough Road Bridge and so would not be able to reach the Site exclusively by river.

We are proposing RHF North to handle this freight. Freight arriving at RHF North would need to be transported onwards to the Site via a temporary haul road. If required, further information on this would be included in the Stage Two consultation.



### Key

- Site boundary
- River Trent
- Potential river handling (RHF) facility locations
- RHF location assessment areas

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0 125 250 375 500m

# ROADS

Materials that could not feasibly be transported by rail or river would be transported by HGVs on roads. Movement of HGVs across the network would need careful planning, taking account of traffic conditions at different times of day, and sensitive locations (e.g. schools or residential areas).

We are developing our thinking on how best to manage the transportation of construction freight by road. These include:

- A Freight Management Facility that would be a gateway for construction related HGVs to pass through to manage the flow of vehicles. We are in the process of identifying the most appropriate location for the facility and will share our proposals for this at a future stage of consultation.
- A principal HGV route would be established as the key corridor for HGV traffic. The purpose of this route would be to protect local villages and rural roads from this traffic, reducing impacts on aspects such as noise, air quality, severance and amenity.
- Management of the road network and traffic in the movement of AILs (e.g. cranes, excavators, machinery or large pre-fabricated structures).
- A Construction Traffic Management Plan (CTMP) to control all freight movements by road. This would aim to minimise, as far as practicable, the impact of construction traffic movements on communities and other road users in the vicinity of the Site.
- A Traffic Incident Management Plan would include protocols for construction traffic in the event of a traffic incident.
- Highways improvements may be required to mitigate impacts. This could include physical highway mitigation such as local junction improvements.



To manage construction worker traffic on local roads, we are considering the provision of Park and Ride facilities in the wider area; with limited on-Site car parking. The provisional locations for these facilities have been informed by preliminary modelling. The areas currently being considered are:

- North of Bawtry, adjacent to the A638 or A6182. A facility in this location would intercept construction workforce trips from Rotherham, Doncaster and the north-west.
- West of Retford, adjacent to the A620, B6079 or B6420. A facility in this location would intercept construction workforce trips from Sheffield, Chesterfield, Worksop, the west and south-west.
- Within the Gainsborough area, including adjacent to the A159, A631 or A156. A facility in this location would intercept construction workforce trips from Lincoln, Scunthorpe and the east, whilst also having the potential to collect workers from central Gainsborough.



### Key

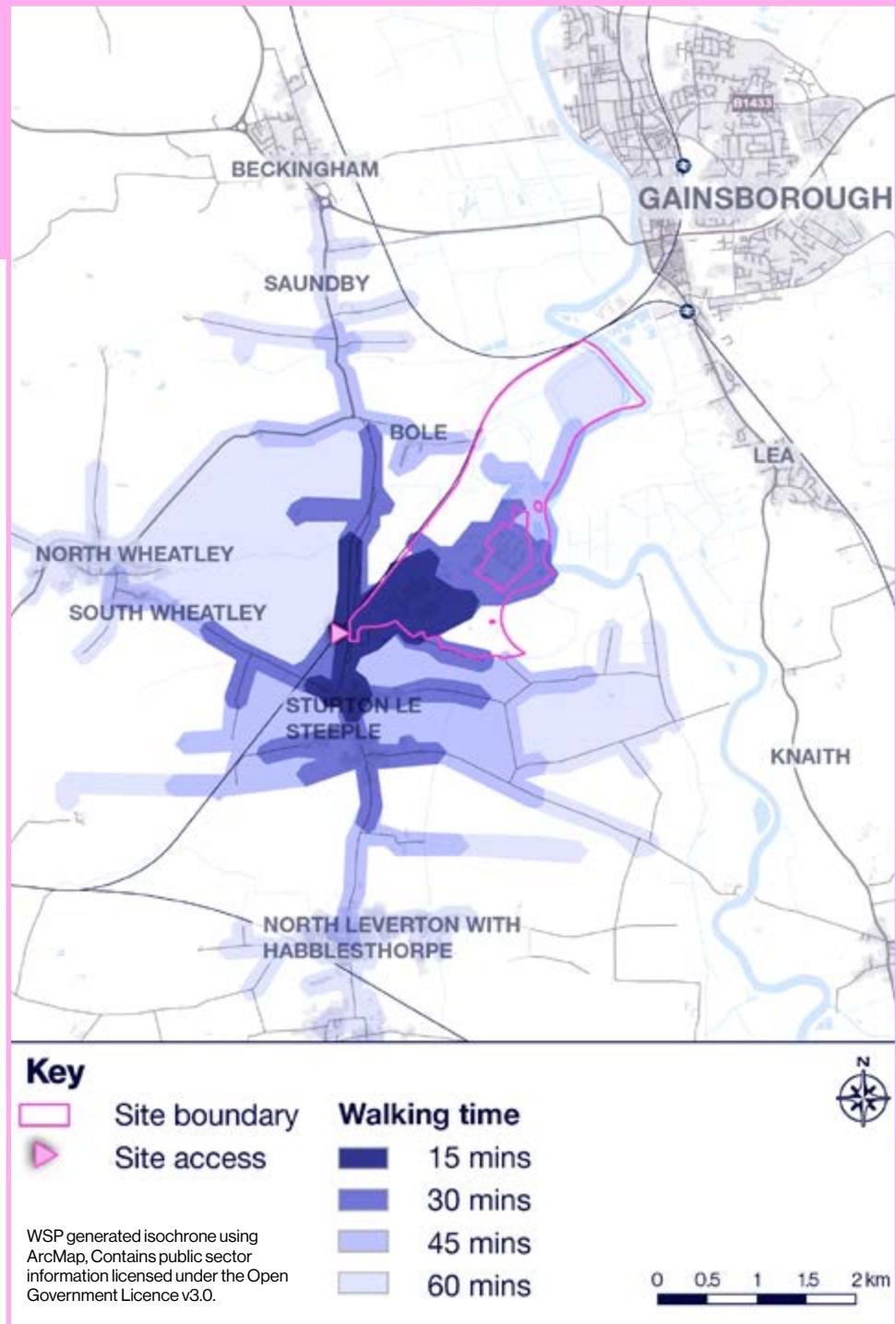
- Site boundary
- Park & Ride location assessment areas

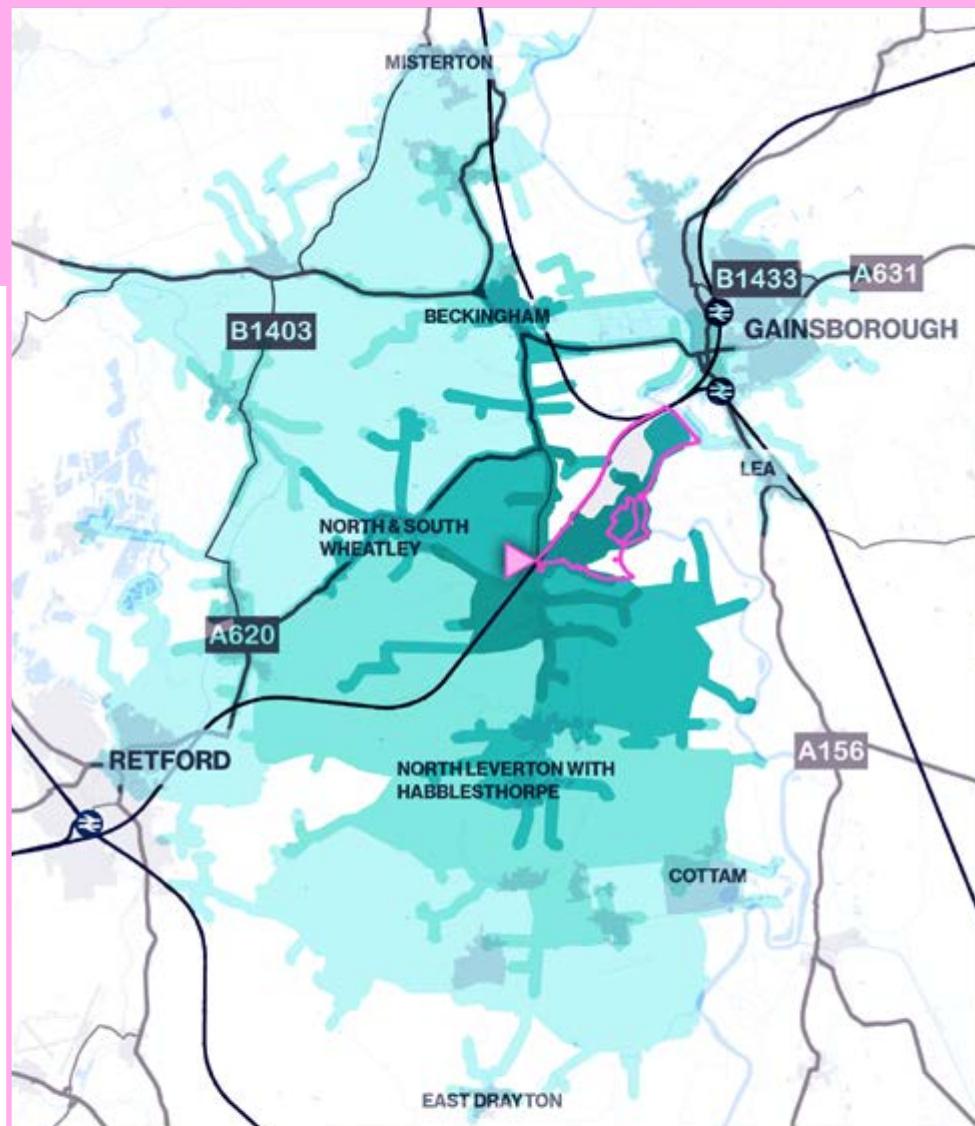
WSP generated buffer zones using ArcMap. Contains public sector information licensed under the Open Government Licence v3.0.

0 2 4 6 8 10 km

# WALKING, CYCLING AND PUBLIC RIGHTS OF WAY

We are looking into opportunities to provide improved walking and cycling connections to Gainsborough. This could involve upgrades to the existing Public Right of Way network which runs alongside the River Trent or construction of alternative routes. The three plans show current accessibility to the Site.



**Key**

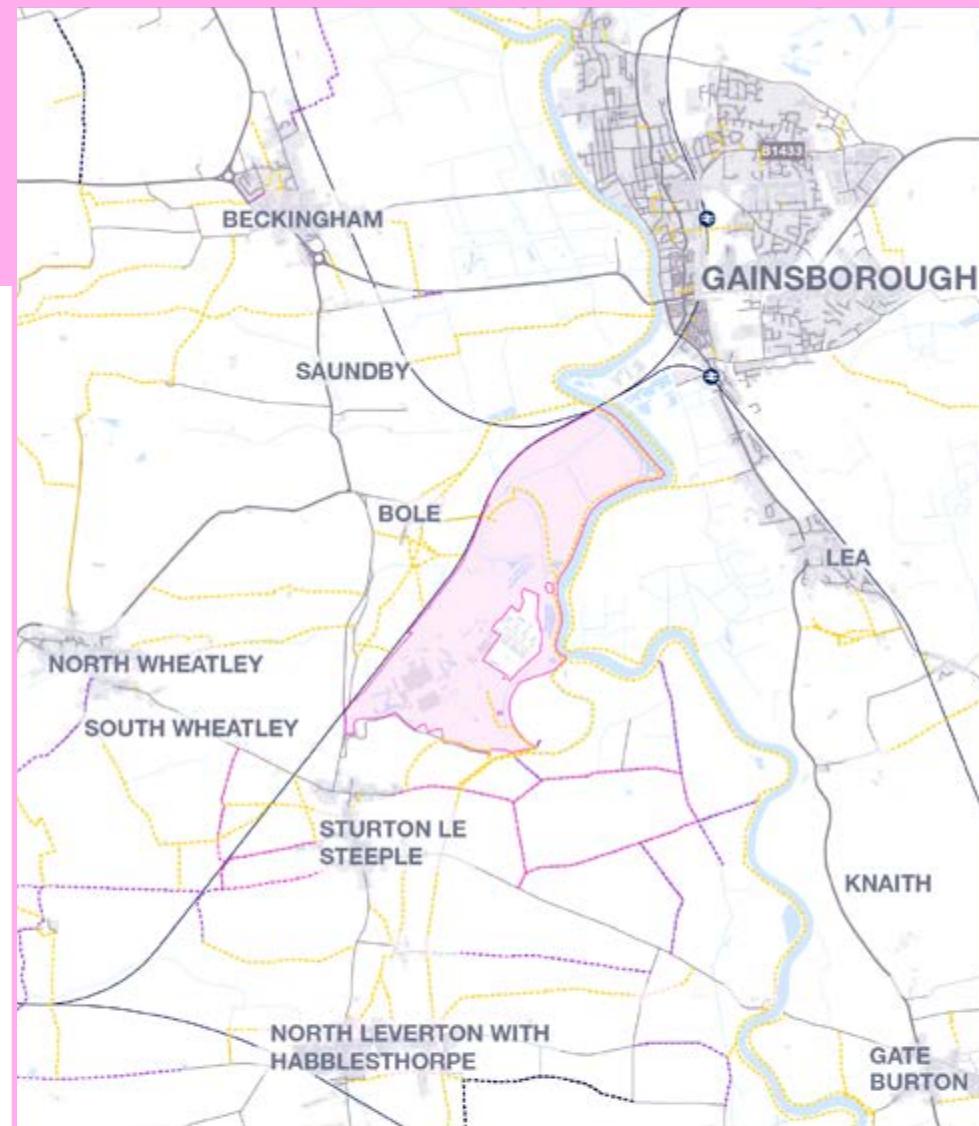
- Site boundary
- Site access

**Cycling time**

- 15 mins
- 30 mins
- 45 mins
- 60 mins

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0 1 2 3 4 5 km

**Key**

- Site boundary
- Restricted byways
- Footpaths
- Byways open to all traffic
- Bridleways

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0 0.5 1 1.5 2 km

# CONSTRUCTION

The construction phase for the Proposed Development is currently estimated to be a 10-year programme. We have used standard modelling techniques used for infrastructure projects of comparable complexity, to make some initial estimates on the size of the workforce and our current best estimate is that 8,000 workers will be required at the peak of construction.

We recognise the impact this could have on the local community and the construction phase would be guided by the following best practice principles:

- Being a good neighbour and ensuring the needs and views of the community are taken into account.
- Reducing, as far as practicable, potentially significant negative impacts and mitigating their effects.
- Creating long-term, sustainable opportunities for the community where practicable, for example through training, employment and support for joining our supply chain.

- Applying regulatory and company standards in terms of safety, quality and sustainability.
- Ensuring existing operations (including West Burton B, National Grid, Severn Trent and Trent Water) in and around the Site would not be adversely affected.

## Housing Construction Workers

We estimate that 40% of the construction workforce would need to move to the area temporarily or part time, due to the number, and in some cases, specialist nature of many of these construction roles.

Whilst work to date indicates that existing accommodation provisions can satisfy this requirement, to manage the impact on accommodation in the area we will develop an accommodation strategy to help manage the inflow of workers to avoid, manage and reduce impacts on local communities. This is likely to include a strictly enforced Code of Conduct.

We would also adopt appropriate working patterns to minimise potential negative impacts on the day to day lives of local communities. We understand that local people may be concerned that an additional construction workforce could impact the availability of local public services. We will engage and work with local authorities to find appropriate solutions where needed.

We consider that a small amount of temporary purpose-built accommodation on or near the Site may be required; with further details to be included in the Stage Two consultation.

## Noise and Vibration

The Site is in a rural environment, therefore, the background and ambient noise levels around the Site are low with key sources including road traffic and passing trains.

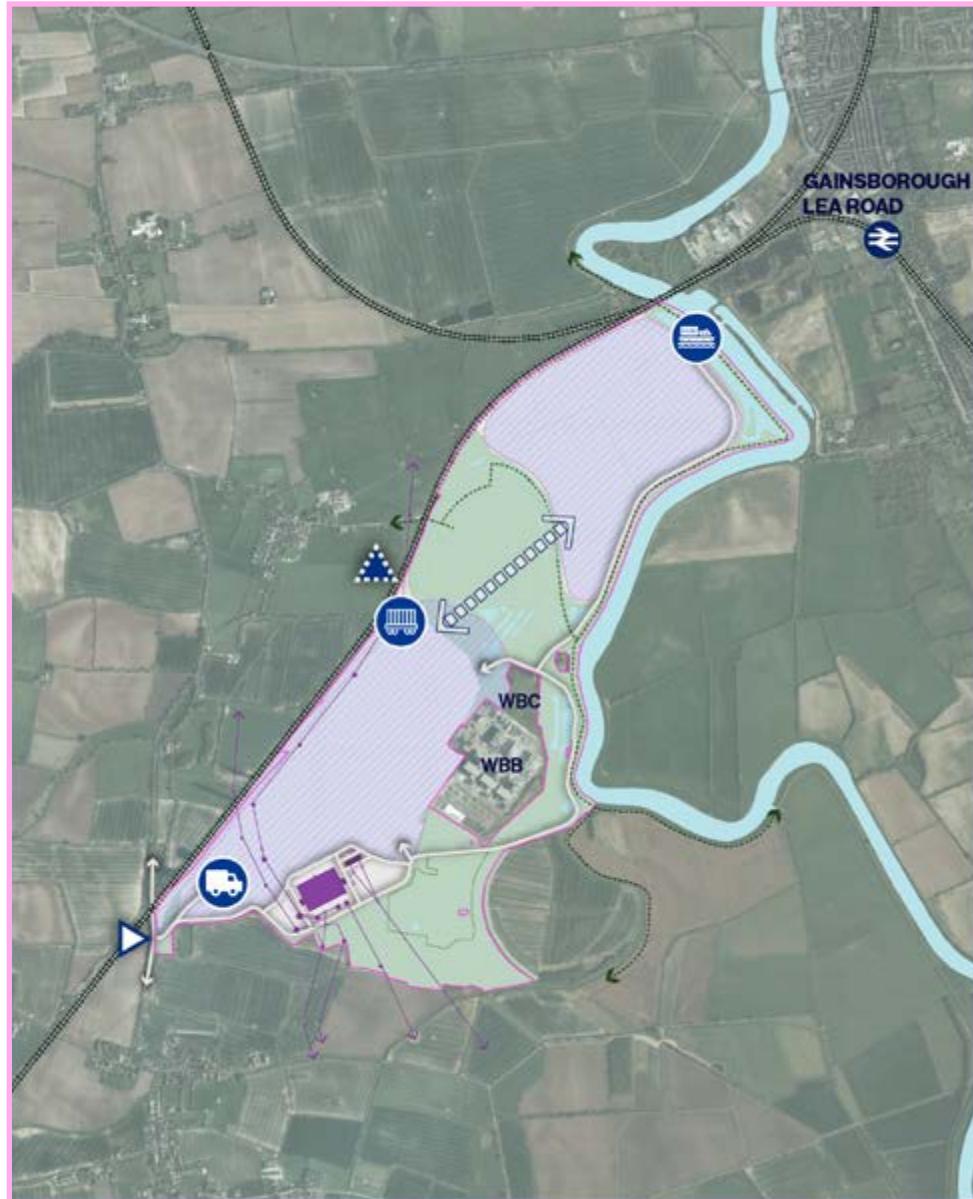
There is potential for the Project to have an impact on noise levels, both during the construction and operational phases. Mitigation measures will be considered to minimise this as far as possible. It is also anticipated that vehicle movements to and from the Site once operational will be low. Therefore, development-generated road traffic noise is unlikely to be a significant constraint.

## Air Quality

During the construction phase, emissions associated with the movement of vehicles would have the potential to impact human health and ecological receptors. Dust emissions would arise but would be appropriately managed through the adoption of a Construction Environmental Management Plan (CEMP) to mitigate any potential impacts on human health and ecological receptors.

During operation, there is the potential for any combustion emissions from on-Site power generation to contribute to local pollutant concentrations. These effects would be controlled through a series of measures which will be identified in the Stage Two consultation.

Indicative construction phase layout



### Key

- Site boundary
- Railway line
- Railway station
- Site access
- River Trent
- Public rights of way
- Medieval Village (Scheduled Monument)
- Green assets
- National Grid (NG) substations
- National Grid (NG) overhead lines and pylons
- West Burton B
- West Burton C
- Proposed construction compound
- Vehicular goods access cluster
- Potential river handling facility location
- Rail freight facility
- Road network
- Potential north - south road (location TBD)
- Potential temporary haul road entry point



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# LANDSCAPE AND HISTORIC ENVIRONMENT

## Landscape and Views

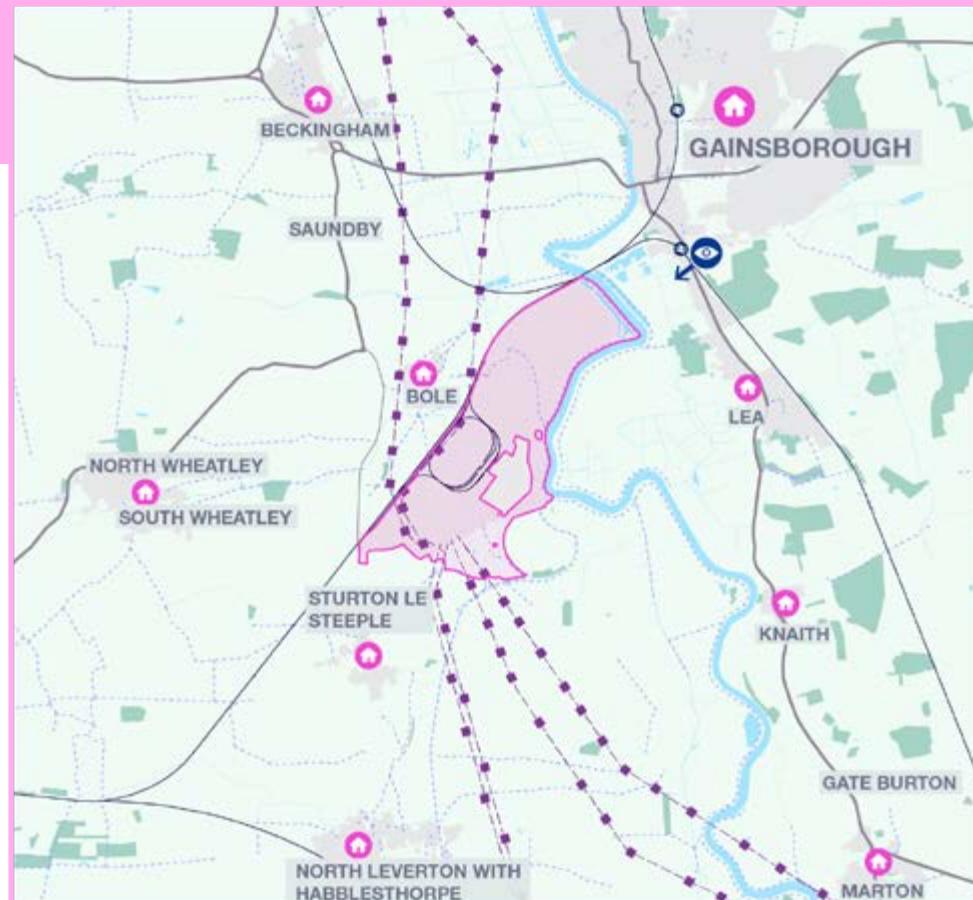
We have carried out a Character Area Study and identified potential sensitive viewpoints.

The Project would minimise, where possible, its impact on the surrounding landscape and views. Further details will be provided in the Stage Two consultation. Estimates of the height of the proposed plant and stack in relation to the existing West Burton A are shown in the section drawing on page 23. Design work is ongoing and more information on anticipated heights of the proposals and views of the Proposed Development will be made available at the Stage Two consultation.

## Neighbouring Historic Environment

There are several designated heritage assets in the vicinity of the Site, including the Gainsborough Riverside Conservation Area, Saundby Conservation Area and Wheatley Conservation Area. Other listed buildings are also located within Sturton le Steeple and in the hamlet of Bole.

The Scheduled Monument (or medieval settlement) of West Burton is of national importance, and its setting will be a consideration in the context of the Project. Any potential impacts on the historic environment will be identified, minimised and mitigated through the design process. Further details will be provided in the Stage Two consultation.



### Key

- Site Boundary
- Public Rights of Way
- Settlement
- Road
- Rail
- - - National Grid overhelines and pylons
- Water
- Designated Woodland
- Viewpoint location

The Public Right of Way layer has been generated by WSP, an interpretation of data held by Nottinghamshire CC and Lincolnshire CC. Contains public sector information licensed under the Open Government Licence v3.0.



# CLIMATE AND GHG EMISSIONS

Plan showing section from Sturton le Steeple to Bole



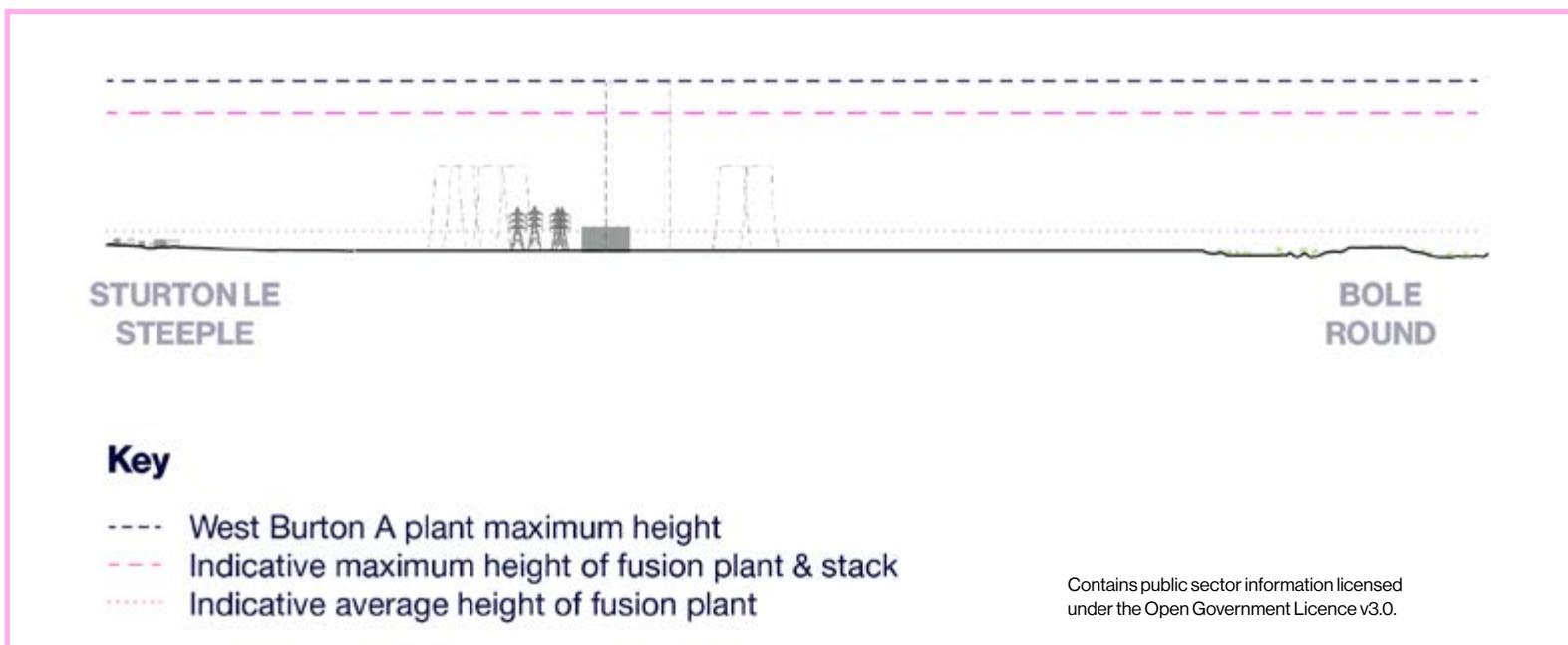
## Climate change

It is important to understand the impact of climate-related hazards to the Project, and how the design and operation of the Project will respond and manage these changes through resilience and adaptation measures. As part of the DCO process, a climate vulnerability assessment will be undertaken.

## Greenhouse Gas Emissions

The benefits of the Project include the production of low carbon energy, supporting wider UK environmental targets. The benefit of this energy, in Greenhouse Gas (GHG) terms, needs to be understood in the context of a whole life assessment of the Project, accounting for activities that give rise to GHG emissions in its construction, operation and future decommissioning. As part of the DCO process, a whole life carbon assessment will be undertaken.

Section drawing showing the height of West Burton A compared to indicative heights for the prototype fusion power plant



# ENVIRONMENT

We have embarked on a programme of environmental studies to understand the main environmental constraints and opportunities of the Site. Given the early stage of the process, we thought it helpful to share some of the information we have collected in characterising the Site from a geographical and environmental context.

Our Stage Two consultation will provide details of how our studies are shaping the design of the Project, and an indication of the likely significant effects and our proposed mitigations.

Ultimately, the application for consent to construct and operate the Project will be accompanied by an Environmental Statement (ES). The ES will report the outcomes of the Environmental Impact Assessment (EIA), which will be undertaken in accordance with the requirements of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

The Site is close to the Lea Marsh Site of Special Scientific Interest (SSSI), designated for floodplain meadow and wet pasture habitats. There are also six non-statutory Local Wildlife Sites (LWS) within the Site that are designated for a variety of habitat types and associated flora and invertebrate fauna.

Several of the habitats and species within the Site are national or local biodiversity conservation priorities and are legally protected.

Plans to mitigate the effects of the Project on biodiversity are likely to include moving legally protected species from the physical development footprint, into suitable habitats. These habitats will be enhanced in advance to maximise their suitability for these species.

We will continue to collect data within the Site and perimeter area to inform plans to mitigate predicted adverse effects on species and to achieve a biodiversity net gain (BNG) in accordance with legislative requirements.



## Key

<span style="background-color: pink; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Site boundary
<span style="background-color: lightblue; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Lea Marsh SSSI
<span style="background-color: lightgreen; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Local Wildlife Sites
1.	West Burton Meadow
2.	West Burton Power Station
3.	West Burton Reedbed
4.	Burton Round Ditch
5.	Bole Ings
6.	Bole Ings Drains
7.	Bole Ings Flood Pasture
8.	Saunby Marsh Drains
9.	Beckingham Marshes
10.	Saunby Park Wood
11.	Mother Drain, Upper Ings
12.	Out Ings
13.	Lea Meadow
14.	Track to Lea Marshes
15.	Knaith Park Wood
16.	Priory Farm
17.	Lea Wood
18.	Bass And Park Springs Woods
19.	North Wheatley Beck
20.	Muspitt Lane

Data on Local Wildlife Sites (LWS) in Lincolnshire was obtained from Greater Lincolnshire Nature Partnership (GLNP). Data on Local Wildlife Sites (LWS) in Nottinghamshire was obtained from Nottinghamshire Biological and Geological Records Centre (NBGRC). Data on statutory biodiversity conservation sites including SSSIs was obtained from the DEFRA Magic website (<https://www.magic.defra.gov.uk/>). Contains public sector information licensed under the Open Government Licence v3.0.



# WATER

The River Trent provides an important habitat for aquatic species. The Site also includes an inactive angling lake, and three watercourses (Bole Ings Drain, Wheatley Beck, and Catchwater Drain).

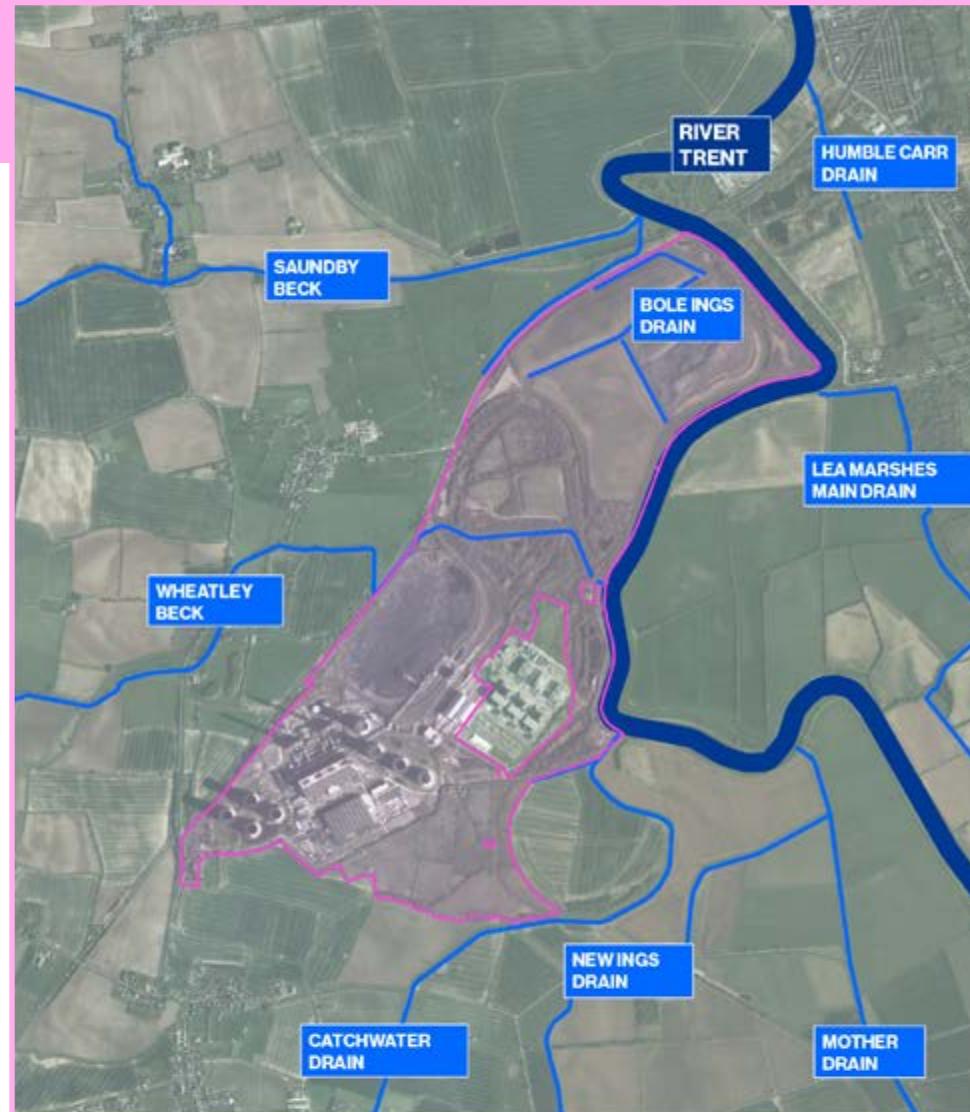
Surveys have been carried out on the River Trent and other watercourses within the Site. This work is ongoing, and results are being compiled. This will be considered further as the design and layout requirements for the Project are progressed with more information provided at Stage Two of consultation.

## Flood Risk

The Site is bordered by the River Trent, and there are several tributaries of the river that flow through, and in the vicinity of, the Site including the Wheatley Beck, Catchwater Drain and Saundby Beck. The Site is predominantly situated in Flood Zone 1, although some low-lying areas adjacent to the River Trent and Wheatley Beck are located within Flood Zones 2 and 3.

Potential impacts on hydrology, water quality and flood risk will be identified, minimised and mitigated through the design process. Hydraulic and flood risk modelling will inform the design.

More detailed preliminary environmental information will be made available at Stage Two of the consultation.



## Key

- Site boundary
- River Trent
- Watercourses

Aerial imagery from Sensat. Contains public sector information licensed under the Open Government Licence v3.0.

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# YOUR FEEDBACK IS IMPORTANT!

For us, public consultation is more than a legal requirement. STEP Fusion embodies a culture that fosters collaboration and innovation. These core values extend beyond our colleagues; they will be embodied in all public consultation, ensuring that the community is heard and local benefits are maximised. Since the selection of the West Burton site, community engagement has been a core component of site activities.

We welcome feedback on our consultation from people living and working in the local area, as well as from organisations, landowners, and anyone with an interest in the Project.

**We are holding several events around the West Burton Site so you can find out more, meet the team and give your views on our proposals.**

**COMMENTS MUST BE RECEIVED BY 23:59 ON 11 MARCH 2026.**

You can respond to this consultation by:

-  Attending an event and completing and submitting a feedback form while there
-  Completing the online form, which can be accessed via the project website at [stepfusion.com/consultation](http://stepfusion.com/consultation)
-  Completing and posting a printed feedback form to **FREEPOST STEP FUSION**
-  Emailing [communications.step@ukifs.uk](mailto:communications.step@ukifs.uk) with your feedback

DATE	TIME	EVENT	ADDRESS	WHAT3WORDS
Wednesday 14 January	10am - 3pm	Sturton Hall & Conference Centre	Brickings Way, Sturton le Steeple, Retford DN22 9HY	///technical.slimy.names
Thursday 15 January	3pm - 8pm	The Venue at Roses (Roses Sports Ground)	North Warren Road, Gainsborough DN21 2TU	///thudding.defeated.scornful
Friday 16 January	10am - 3pm	North & South Wheatley Village Hall	Sturton Road, South Wheatley, Retford DN22 9DH	///scooped.imprints.deserved
Saturday 17 January	11am - 4pm	Bawtry Town Hall	Peake's Croft, Bawtry, Doncaster DN10 6PU	///sector.speaks.refrained
Tuesday 20 January	11:30am - 4:30pm	Lea Village Hall	Rectory Lane, Gainsborough DN21 5JA	///magically.crumbles.party
Wednesday 21 January	3pm - 8pm	South Leverton Memorial Institute	Town Street, South Leverton, Retford DN22	///foster.relegate.earliest
Thursday 22 January	3pm - 8pm	Hallcroft Community Hall	Hallcroft Community Centre, Randall Way, Retford, DN22 7GR	///waters.poem.questions
Wednesday 28 January	10am - 3pm	Misterton Methodist Hall	52 High Street, Misterton, Doncaster DN10 4BU	///crockery.longer.lingering
Thursday 29 January	10am - 3pm	Sturton by Stow Village Hall	High Street, Sturton by Stow, Lincoln LN1 2AX	///lifelong.grinders.grownup
Friday 30 January	3pm - 8pm	Gringley on the Hill Community Centre	West Wells Lane, Gringley on the Hill, Doncaster DN10 4QY	///defensive.enormous.dummy
Saturday 31 January	10am - 3pm	Clarborough Village Hall	Main Street, Clarborough, Retford, Nottinghamshire DN22 9LN	///mouths.segregate.elevator
Monday 2 February	10am - 3pm	Laneham Memorial Hall	Main Street, Laneham, Retford DN22 0NG	///headers.dare.swordfish
Tuesday 17 February	3pm - 8pm	Sturton Hall & Conference Centre	Brickings Way, Sturton le Steeple, Retford DN22 9HY	///technical.slimy.names

We are at a very early stage of project development, so your feedback will be reviewed and fed back into the programme to further develop our proposals. We plan to hold at least one further stage of consultation as our proposals develop.

Again, we thank you for reading this consultation document and we welcome your feedback on our initial proposals for the Project.

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von Monika - Frau  
der Konfidenz -

Hand



## WEST BURTON

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