

Welcome



Welcome to the Equinor H2H Saltend Public Consultation

Thank you for visiting Equinor's public consultation on the proposed Hydrogen to Humber (H2H) Saltend project, an innovative low carbon^(*) hydrogen facility at the forefront of decarbonising the Humber region.

This is the third phase of public consultation and a key part of our programme of ongoing engagement activity, providing members of the public and wider stakeholders with the opportunity to learn more about the proposed H2H Saltend project.

Within this exhibition is an overview of the project, the outputs from the Environmental Impact Assessment (EIA), and how your feedback has been incorporated into the project design. Additionally, this exhibition sets out the wider role of H2H Saltend in kick-starting the delivery of net zero carbon ambitions in the Humber and across the East Coast Cluster.

Our virtual consultation runs from the **23rd January 2023 to 24th February 2023** and stakeholders are also invited to attend our in-person events:

- **30th January 2023, 14:00–19:30, Hull City Hall - Mortimer Suite, Queen Victoria Square, Carr Lane, Hull HU1 3RQ**
- **31st January 2023, 14:00–19:30, Hedon Town Hall, 36 St Augustine's Gate, Hedon, Hull HU12 8EX**
- **1st February 2023, 14:00–19:30, Paull Village Hall, 67 Main St, Paull, Hull HU12 8AW**
- **3rd February 2023, 14:00–19:30, Preston Village Hall, Main Street, Hull HU12 8SA**



Find out more

Explore our consultation boards to discover more about:

- H2H Saltend within the Humber
- The H2H Saltend Project
- Scheme design
- Safety through design, construction and operation
- Introduction to the EIA
- EIA results
- Maximising socio-economic benefits in the region
- Engagement, consultation and next steps



Feedback

We value your feedback and are committed to an open dialogue with all our stakeholders. Please let us know what you think, ask questions or leave comments through our feedback form.

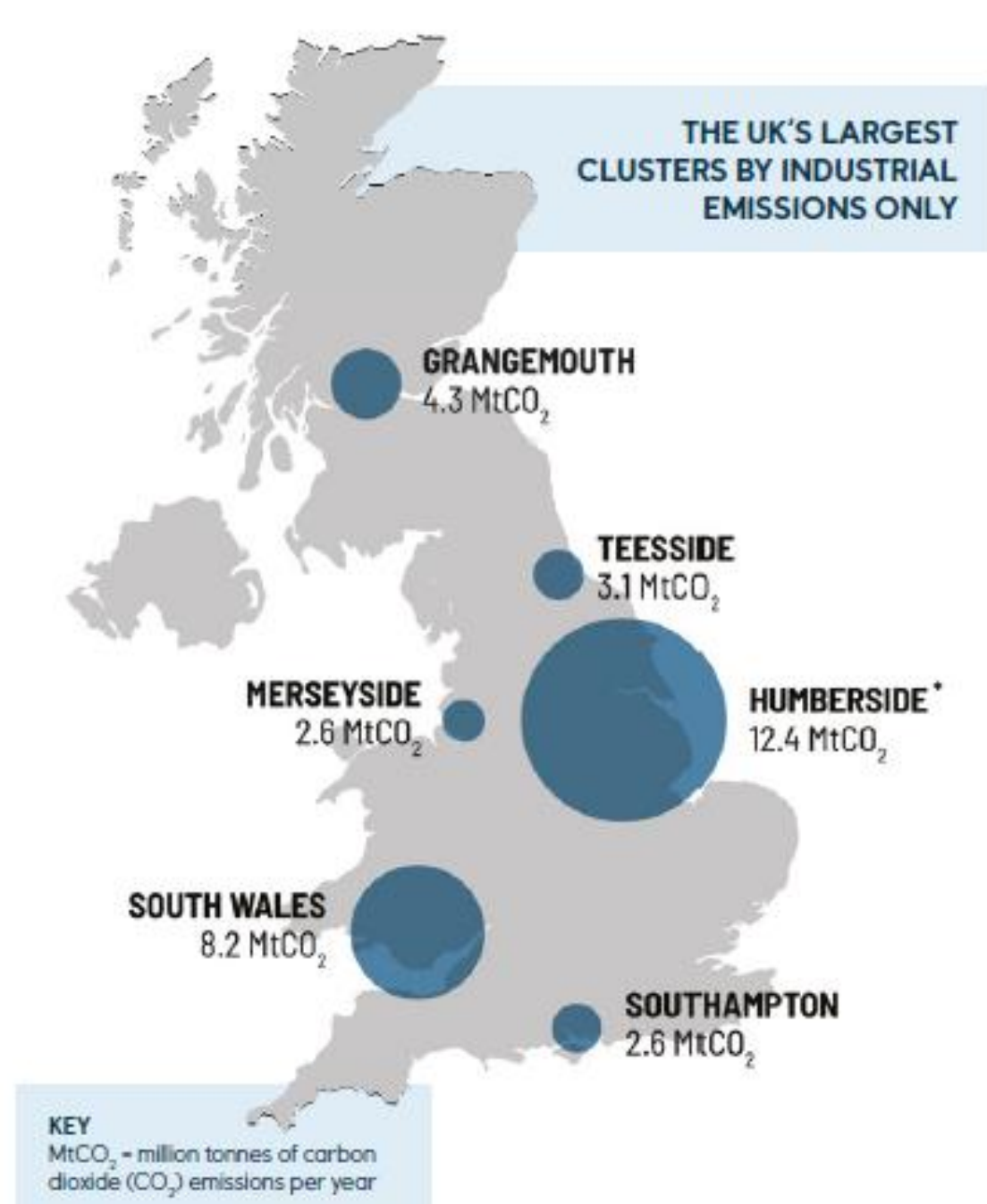
()The UK Low Carbon Hydrogen Standard sets a maximum threshold for greenhouse gas (GHG) emissions allowed in the production process for hydrogen to be considered 'low carbon hydrogen'.*

H2H Saltend within the Humber



Providing Hydrogen to Humber

The H2H Saltend Project is an important stepping stone for Equinor's Hydrogen to Humber ambition of establishing at least 1.8 Gigawatts (GW) of hydrogen production in the Humber region by 2030, with the capacity to contribute one third towards this goal – 0.6 GW. With the UK Government's target of producing 10 GW of hydrogen by 2030, Equinor's Hydrogen to Humber ambition will contribute 18% of targeted production.



* Updated Humber industrial emissions provided in the "Humber Cluster – update to the 2020 Business Local Emissions Assessment" report are 14.6MtCO₂/yr

Reducing emissions using hydrogen and carbon capture will help to tackle climate change and achieve the UK's net zero targets, whilst also delivering new jobs, opportunities and investment to the region.

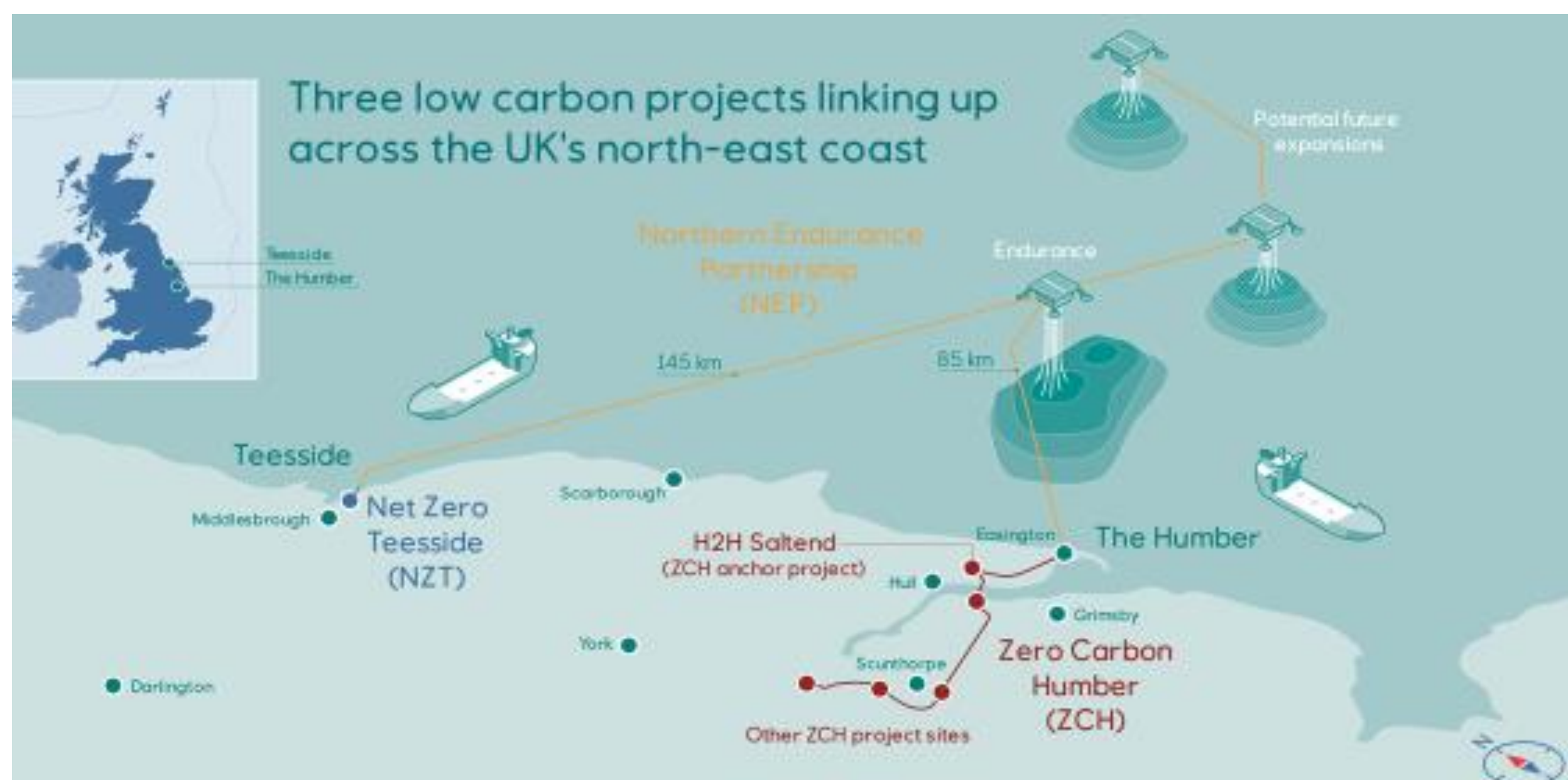
The Project can be scaled up to roll-out low carbon hydrogen across the whole of the north of England, decarbonising a wide variety of industries, as well as other sectors such as domestic heat, transport and power.

The Project forms part of the UK East Coast Cluster and H2H Saltend will be the first step towards delivering the world's first net zero industrial cluster by 2040.

The East Coast Cluster

Selected by the government to be one of the UK's first Carbon Capture, Usage and Storage (CCUS) networks, the East Coast Cluster comprises three regional partnerships: Zero Carbon Humber, Net Zero Teesside, and the Northern Endurance Partnership, as shown in the image below. H2H Saltend is identified as the anchor project within the United Kingdom Research and Innovation (UKRI) grant co-funded Zero Carbon Humber proposals. It is a vital kick-starter for the wider East Coast Cluster group of proposed projects.

In March 2022, 25 projects within the East Coast Cluster submitted bids as part of Phase 2 of the government's CCUS cluster sequencing process. Including Equinor's H2H Saltend project, 14 projects were announced to have moved onto the due diligence stage in August 2022. Subsequently, the Project will proceed through planning, permitting and construction phases, to become operational in 2027.



The Humber and Teesside regions that constitute the East Coast Cluster, are responsible for nearly 50% of the UK's total industrial cluster emissions. The proposals offer the opportunity to establish the region as a globally-competitive hub for low carbon industry and innovation, whilst protecting thousands of jobs.

The H2H Saltend Project

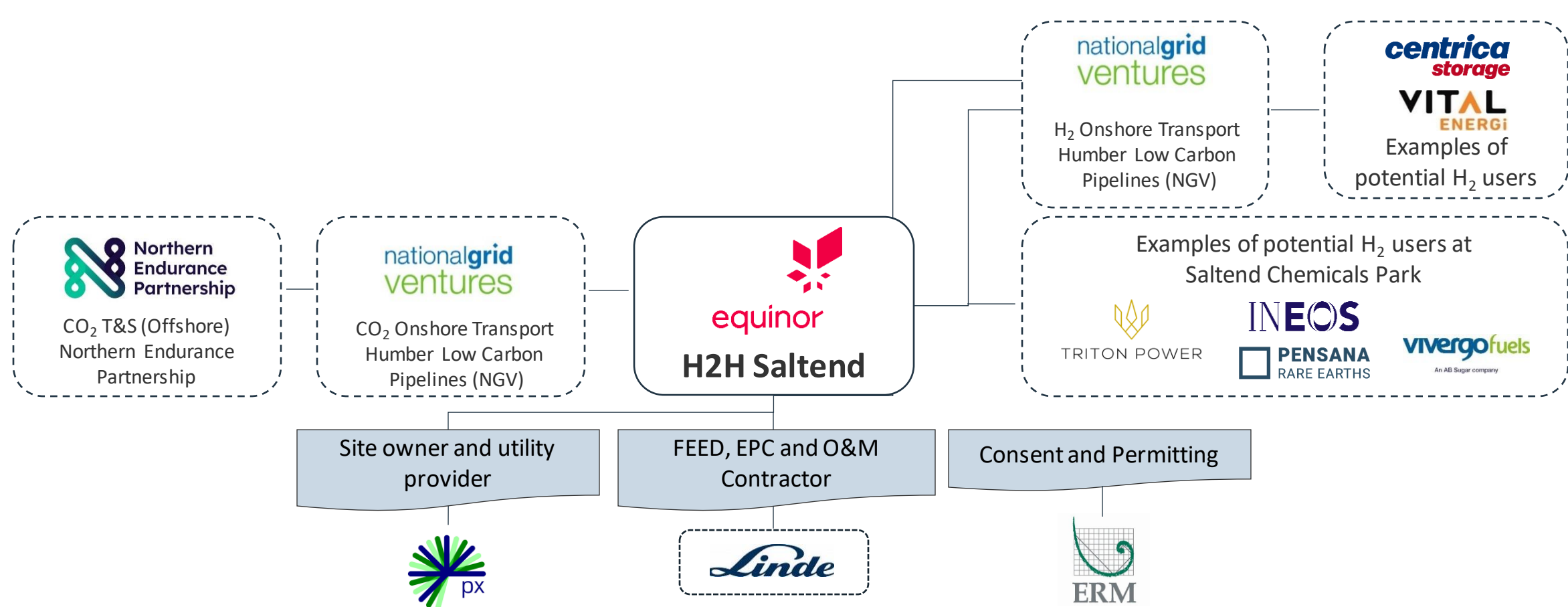


What is H2H Saltend?

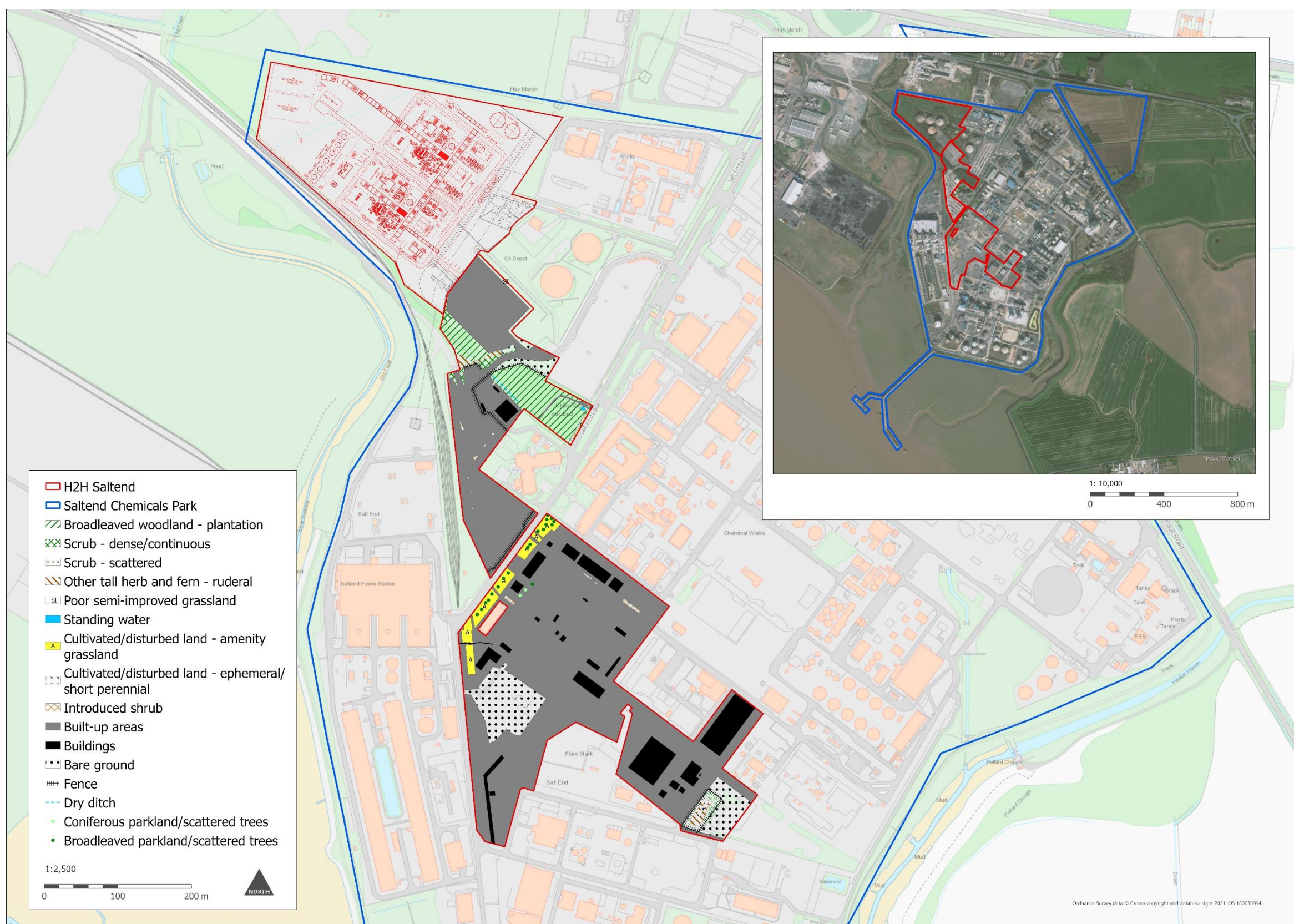
The H2H Saltend Project will be the first at scale 600 Megawatt (MW) hydrogen production facility, converting natural gas to hydrogen whilst capturing and safely storing the carbon dioxide (CO₂) from the process. The hydrogen that is created is to be used to produce low carbon energy, or to be used as a feedstock for industrial/chemical processes. Low carbon hydrogen and carbon capture are the leading technologies available to address the need to decarbonise energy-intensive industries such as power production, steelmaking and chemicals which are central to the Humber's economy.

The scheme will be located within Saltend Chemicals Park on a previously developed brownfield site. It will be integrated into the existing infrastructure and industrial processes to allow customers to switch from fossil fuels to low carbon hydrogen feedstock. Over time, the Project will also provide hydrogen to industrial users in the wider region. H2H Saltend is planned to become operational in 2027

H2H Saltend Industry Stakeholders



Project Site



Environmental and Social Benefits of the Site

The H2H Saltend Project site, set within an existing industrial complex, offers a number of environmental and social benefits, including:



The site avoids areas adjacent to communities to minimise disruption to residents and community facilities.



The site avoids sensitive ecological and water resources, protecting biodiversity.



The site is on previously developed industrialised land, ensuring minimised disruption to the natural environment.



The site is near the adjacent existing port and offers good transport access which will be managed to avoid and minimise impacts to local communities.



There is an opportunity to share utilities with existing on-site infrastructure.



The site has a high concentration of potential hydrogen users.



The site is an existing COMAH site, experienced in dealing with the safe production, storage and transport of chemicals.

Scheme Design



Linde Scheme Design



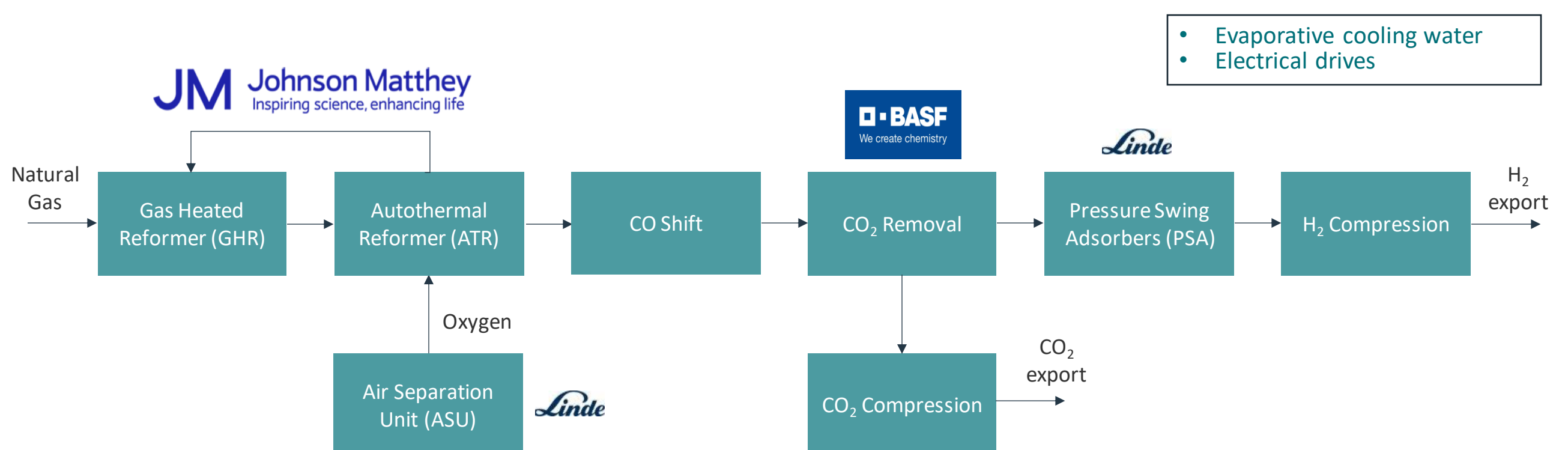
The Project is a hydrogen production facility inside the Saltend Chemicals Park, which will reform natural gas (methane) to hydrogen and CO₂. The hydrogen will be made available as a fuel for power generation and as a raw material to industry customers such as chemical manufacturers within the park.

The CO₂ by-product will be captured, compressed, and transported, for use or to be securely stored. The Project will be designed to capture a minimum of 95% of the CO₂ from the natural gas, significantly lowering the carbon footprint of the power generation and industry customers that utilise the fuel.

Several technology options were reviewed by Equinor during the competitive Pre-FEED (Front End Engineering Design) phase. The selected scheme design that will be integrated into the plant through detailed design and engineering work is to be provided by Linde Engineering.

The plant is designed to produce 600 MW of hydrogen via two parallel 300 MW units, for added operational flexibility. The hydrogen is produced from natural gas using an innovative combination of reforming technologies, explained in the steps below.

Linde Scheme Process



1. Natural Gas is transported to Saltend Chemicals Park from Easington Terminal via the existing infrastructure. The natural gas is then fed into a reformer.
2. A chemical reaction takes place across a catalyst (at high temperature) to convert the natural gas to H₂ and CO₂.
3. The synthetic gas produced is then separated, creating pure streams of H₂ and CO₂.
4. A minimum of 95% of the CO₂ produced is captured and then transported through the proposed Humber Low Carbon Pipeline project to the Northern Endurance Storage site in the North Sea.
5. The H₂ is provided to users within Saltend and transported through the proposed Humber Low Carbon Pipeline project to users further afield for use in power, transport, industry and heat.

Safety through Design, Construction and Operation



Always Safe: Safety is Our Top Priority



Equinor has supplied energy to the UK for over 35 years. We are Europe's only commercial carbon capture and storage operator, with over 25 years of experience in safely storing carbon emissions and producing hydrogen from natural gas. We follow industry best practice and are committed to sharing our learning and experience via the Always Safe web platform to make our industry safer. This can be accessed by scanning the QR Code to the right.



We will operate in accordance with industry best practice to deliver the highest standards of safety for the project. At Equinor, we aim to continuously develop a proactive culture where safe and secure operation is incorporated into everything we do. Our priority is to ensure we are Always Safe.

Safety Through World Class Technology

Linde is the parent company of BOC, the UK's largest provider of industrial gases, with a depth of experience in delivering hydrogen projects in the UK and worldwide. This experience will ensure H2H Saltend benefits from industry leading knowledge in optimising safety through design, operation and maintenance.

Making our world
more productive



Safety during Construction

As per CDM Regulations, Equinor will carry out the following actions regarding safety during construction:

- The Health and Safety Executive (HSE) will be notified of the Project at an appropriate stage using a Form F10.
- A 'principal designer' will be appointed to plan, manage and coordinate the planning and design work.
- A 'principal contractor' will be appointed to plan, manage and coordinate the construction work.
- The 'principal contractor' will be required to prepare a 'Construction Phase Plan' before the construction phase begins, and then regularly review and revise it to make sure it remains fit for purpose.
- Each appointment will 'be subject to a rigorous due diligence exercise to ensure that the contractors, and their proposed teams, meet with the exacting health and safety requirements to deliver this Project safely.'

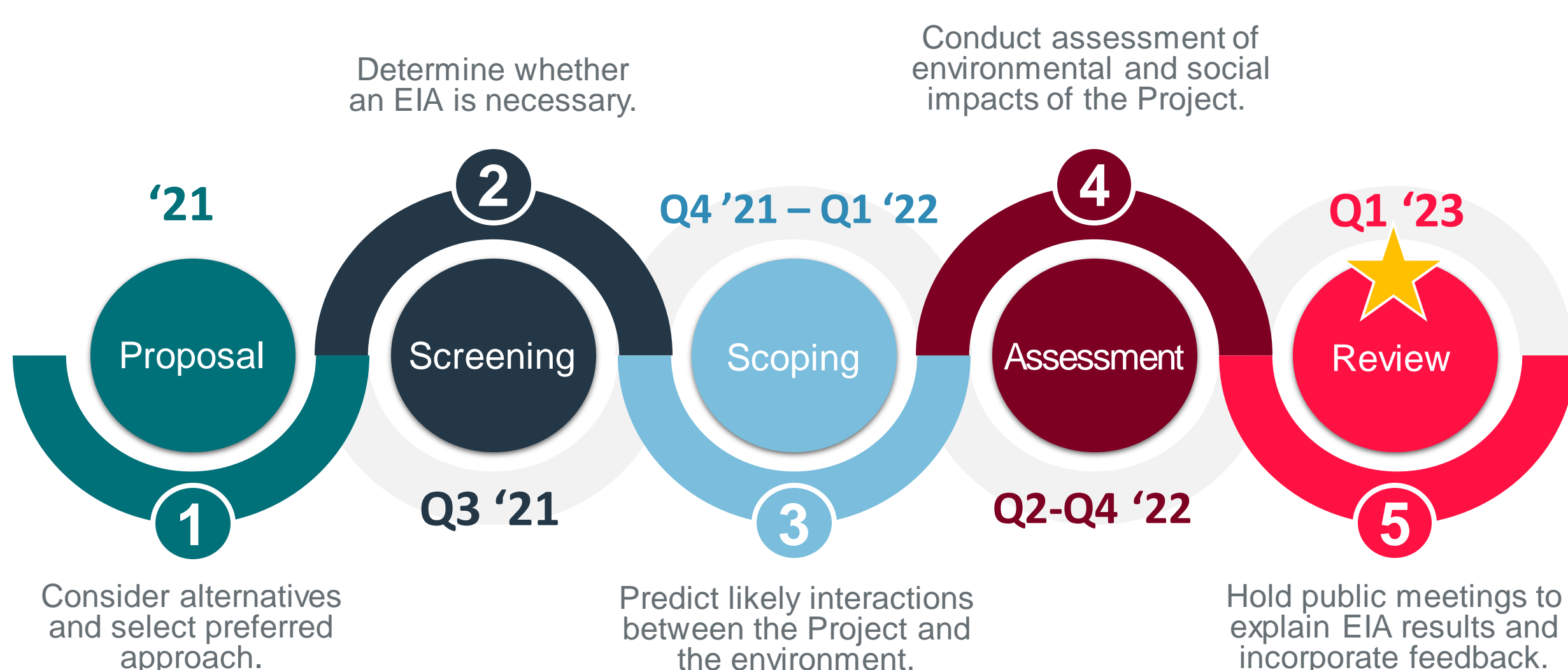
Introduction to the EIA



The Role and Timeline for the EIA

An application for planning consent will be made in March 2023 to the East Riding of Yorkshire Council (ERYC) under the Town and Country Planning (Environmental Impact Assessment [EIA]) Regulations 2017.

Scoping has now been completed and a detailed EIA has been undertaken on the proposed scheme design. The following information sets out the assessment for the key EIA topics.



The purpose of the EIA is to inform ERYC, other key stakeholders, and the public of any environmental effects associated with a development during its construction, operation and decommissioning, as well as any steps taken to minimize these.

The draft detailed assessment defines and provides further details on the following:

- The effects assessed in relation to environmental receptors (i.e. people, built resources, and natural resources).
- Baseline data to determine the current state of the environment, and outline the likely evolution without implementation of the development, and description of factors likely to be significantly affected by the development (i.e. population, human health, biodiversity, land, water, air, climate).
- Identification and assessment of these likely effects, addressing the construction, operational and decommissioning phases of the project, including assessment of:
 - Direct and indirect effects;
 - Transboundary effects;
 - Short-, medium- and long-term effects;
 - Permanent and temporary effects; and
 - Positive and negative effects.
- Mitigation measures to avoid, prevent, reduce, or offset any significant adverse effects on the environment, and appropriate monitoring arrangements.

The draft EIA has been informed by the baseline research and scoping report and surveys from previous stages, as well as a comprehensive programme of stakeholder engagement and collection of feedback. This is the third and final stage of consultation, following which the EIA will be finalised in accordance with feedback received in this consultation, and submitted in the final planning application.

Key EIA Topics

- | | |
|-------------------------------------|-----------------------------------|
| Ground Conditions and Contamination | Water Resources and Flood Risk |
| Air Quality and Climate Change | Traffic and Transport |
| Landscape and Visual Amenity | Archaeology and Cultural Heritage |
| Human Health | Major Accidents |
| Noise and Vibration | Socio-economic Characteristics |
| Ecology and Nature Conservation | Waste Management |

EIA Results



Ground Conditions and Contamination

Baseline

A site investigation has been completed at the site through the drilling of boreholes. The geology comprises clays and silt, glacial clays, sands and gravels.

Chemical analysis of the soil and groundwater returned little evidence of contamination, with soil concentrations lower than anticipated given the long-standing history of chemical production at the site.

Findings & Mitigation



The risk of contamination is low, however hotspots may still be present. Additional investigation will be completed during the engineering design phase.

A Foundation Works Risk Assessment will be completed to reduce the risk of mobilising contamination, if encountered



Possibility of construction workers being exposed to potentially contaminated soil and/or groundwater, to be mitigated through use of appropriate PPE and RPE, and good practice.

Air Quality and Climate Change

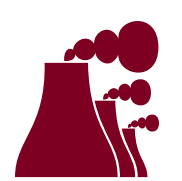
Baseline

The emissions to air from the plant can impact nearby people and habitats. Dispersion modelling is used to inform the plant design. The assessment has determined that impacts are negligible. Carbon Capture and Storage (CCS) technology being incorporated into system design will see a minimum of 95% of CO₂ emissions captured and removed from operation activities, resulting in limited impact from carbon emissions.

Findings & Mitigation



Construction dust predicted to be of no residual significant impact, mitigated through measures set out in IAQM guidance and the Code of Construction Practice (CoCp).



The plant will be fitted with Selective Catalytic Reduction (SCR) abatement to comply with emission limits for NO_x, meaning negligible impacts from operational activities are anticipated.



Operational traffic impacts will be negligible, as there is minimal traffic generated by the Project. Construction traffic impacts will be managed through the Construction Environmental Management Plan

Noise and Vibration

Baseline

The site is already an industrial area, with existing noise dominated by industrial and commercial businesses, associated vehicles, and road traffic noise.

Findings & Mitigation



Predicted noise levels associated with operational activities will not exceed existing baseline levels at the nearest residential area and are therefore considered not significant.



No significant sources of vibration are expected during construction or operational phases .

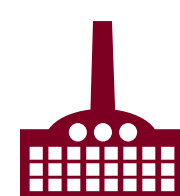
Best practice measures will be considered throughout the construction period and applied where necessary, following the guidance set out in BS 5228:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites.

Landscape and Visual

Baseline

There are no landscape designations or ancient woodlands within 5km of the study area. The surrounding area largely comprises a landscape of industry, port uses, industrial complexes, power generation and chemical facilities.

Findings & Mitigation



The nature and location of the Project, leading to its assimilation within the industrial landscape of the Saltend Chemicals Park will have no measurable effects on local landscape or townscape characteristics.



Visual Impact of the Project within Saltend Chemicals Park

EIA Results



Ecology and Nature Conservation

Baseline

There are four statutory designated sites for nature conservation within 5km of the site. The Humber Estuary Ramsar, Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) are within 60m south of the site. There are four non-statutory designated sites within 2km of the site.

Habitats

The Site is predominantly built-up land dominated by hardstanding concrete (roads and carparks); however, there is a significant area of poor semi-improved grassland in the north of the Site. There are also scattered areas of scrub and ruderal vegetation. Priority habitat such as coastal saltmarsh and mudflats exist outside of the site boundary, within 2km.

Species



There is potential habitat for roosting and foraging bats identified within the Project site. Surveys recorded low levels of bat activity in the Project site. No bat roosts were found within the Project site.



Habitats suitable for amphibians within the Project site, however, no protected species found. Common toads and smooth newts recorded.



There is habitat for reptiles within the Project site; however, no reptiles were recorded during surveys.



Habitats of low value to breeding and nesting birds within the Project site. The wider Humber Estuary area supports important populations of birds, particularly waterbirds.



No habitat identified for water voles within the Project site. Habitat for otter is limited; however, otter presence identified at Old Fleet, adjacent to Project site.



Habitat for invertebrates is of low value within the Project site. Phase 1 Habitat Survey noted no protected species, only common species recorded including green veined white, gatekeeper and red admiral.

Findings & Mitigation

No residual significant impacts when mitigation employed, with no likely significant effects in terms of EIA Regulations on Humber Estuary Ramsar/SAC/SSSI. Permanent loss of habitats including loss of semi-improved grassland, broadleaved plantation woodland, scrub and standing water. However, compensatory habitat will be provided offsite to provide a biodiversity net gain (BNG), resulting in a positive effect for some protected species including bats and amphibians

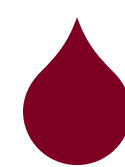
Mitigation to be considered in design and decision-making from the outset, using well-established construction and operational practices to avoid impacts.

Water Resources and Flood Risk

Baseline

A number of water bodies are present close to the Project site, which are hydrologically connected to the protected Humber Estuary. The Project site is located in Flood Zone 3a, with a greater than 0.5% chance of tidal flooding, however this area benefits from flood defences in the form of embankments.

Findings & Mitigation



There are no residual significant impacts to assessed receptors, including the Humber River Basin District, commercial licensed abstractions or designated receptors that are hydrologically connected to the Humber Estuary.

Good practice, including appropriately designed drainage and onsite treatment system, and a Flood Management Plan will be implemented.

Archaeology and Cultural Heritage

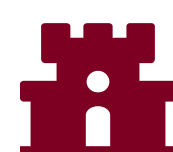
Baseline

There are no designated nor non-designated assets within the Project site. There are two scheduled monuments, conservation areas and a number of listed buildings within 1-3km of the site.

Findings & Mitigation



There are no anticipated significant effects on known Cultural Heritage assets within the Project area.



There is a low potential for unknown buried archaeology to be present therefore, a watching brief will be conducted during all ground-breaking activities.

EIA Results



Socio-Economic Characteristics

Baseline

A demographic profile has been developed for Hull and East Riding of Yorkshire using publicly available data on population demographics, health, deprivation and employment. A range of facilities and amenities have been included in the assessment, including tourism, recreation and residential properties.

Assessment & Mitigation



The Project will support the local economy through the generation of direct and indirect employment.



Social impacts are predicted as negligible, as the proposed development is within the existing Saltend facility.

Human Health

Impacts on human health arising from emissions to air from the Project were assessed. The assessment considered the most plausible pathways of exposure, including a worst-case scenario in which an individual be exposed for a lifetime to the highest airborne concentrations and consuming mostly locally farm produced food.

Results showed that even for the maximally exposed individual, exposure to emissions would have negligible effects on human health. This provides considerable confidence that, for the wider population, any health effects arising from emissions would be effectively absent.

Traffic and Transport

Baseline

Access to the site is available via Salt End Lane which provides a link to the A1033 via Salt End Roundabout. The majority of construction vehicles will likely use the west entrance.

Findings & Mitigation



Additional traffic due to Project construction activities is anticipated to be of low significance, causing temporary increases of traffic flows on the surrounding highway network. Additionally, abnormal loads are proposed to be shipped to site using the port facilities



Traffic and transport effects for the operational phase of the Project are also considered to be not significant.

Waste Management

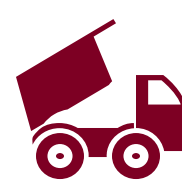
Baseline

Hull and East Riding of Yorkshire Councils have a broad range of waste management and waste treatment facilities, with widespread remaining landfill capacity for inert, non-hazardous and hazardous waste.

Findings & Mitigation



A reduction in waste volume to landfill during the construction and operational phases is a core element of the Project, through waste prevention, reuse, and recycling measures.



In the worst-case scenario considered in this assessment, the effect on available landfill capacity in Yorkshire and The Humber is predicted to be not significant.



Major Accidents

Baseline

The site is an existing industrial site with current operators dealing with hazardous substances (e.g. acetic acid, ethanol and ammonia), with obligations under the COMAH regulations.

Major accident hazards associated with the Project and impacts from existing operators have been assessed and will be managed as per the COMAH Regulations throughout the Project.

Findings & Mitigation

The Project will meet safety requirements in design, construction and operation. It must demonstrate to the relevant authorities that it has met such standards before it can commence commissioning and operation. Dialogue with the HSE has already begun, to pro-actively keep them informed of project development. With this, there are no residual significant impacts identified.

Maximising Socio-Economic Benefits in the Region



H2H Saltend

During construction and operation of H2H Saltend there will be substantial **inward investment** to the region, with **employment and expenditure in the local economy**, and **job creation** during construction and operation.

There will also be economic benefits arising from **direct and indirect expenditure associated with the Project**, for example through placing local orders for goods and services and maintenance. Equinor is committed to maximising the benefits which H2H Saltend can deliver to the economy of the Humber.



Supporting local people and businesses

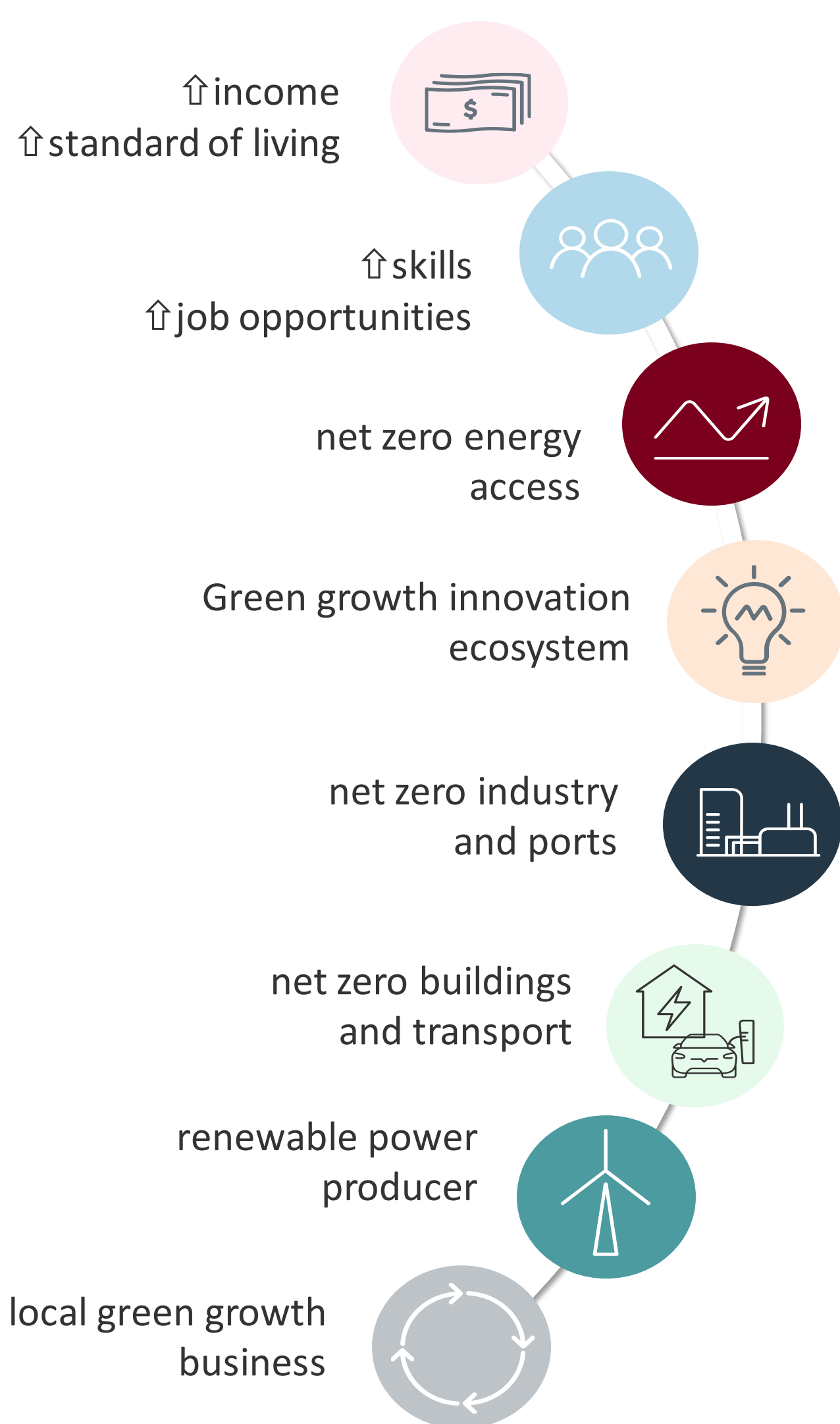
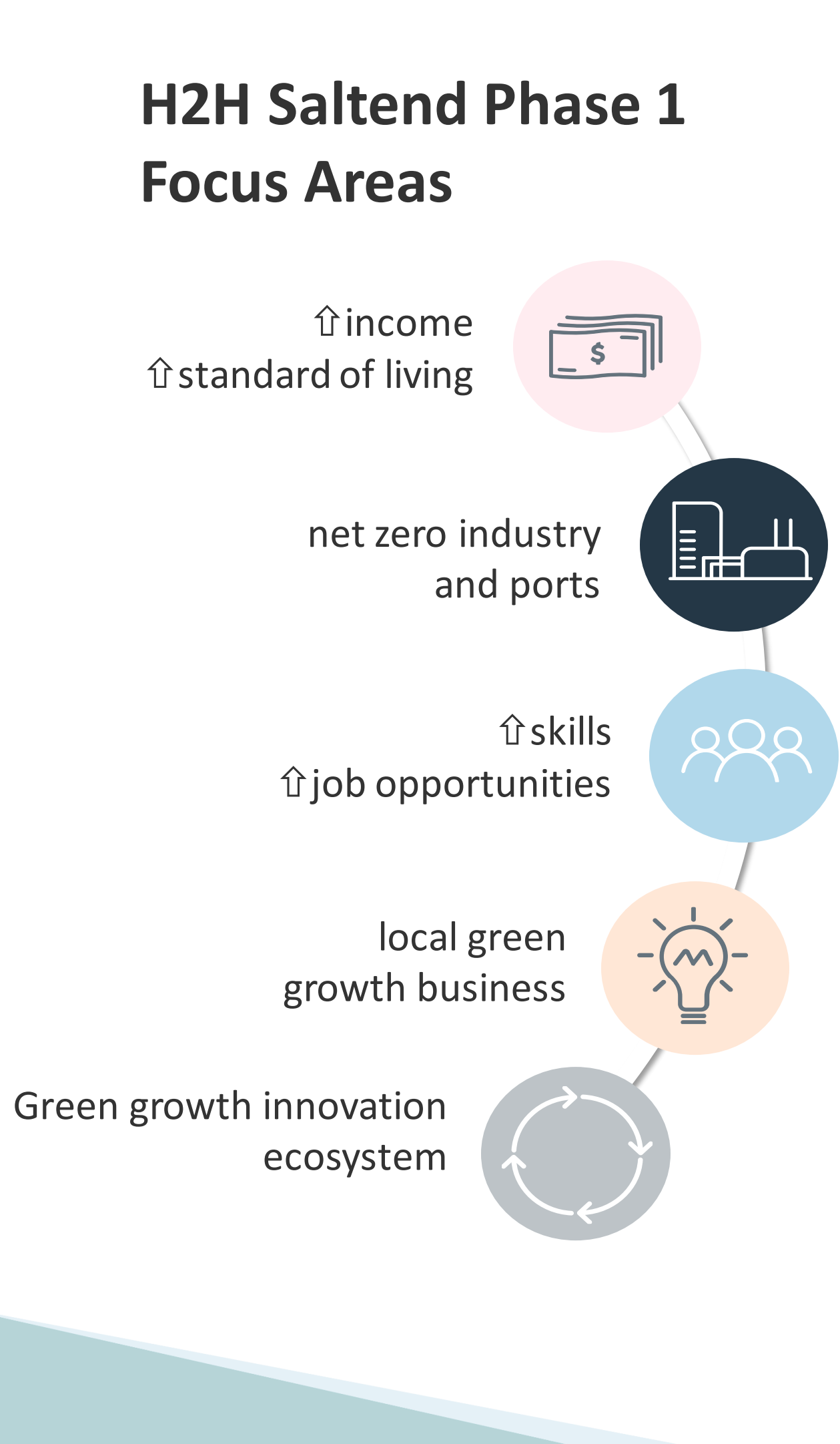
Equinor is committed to creating opportunities for local people and businesses in the region. Collaboration is underway with the University of Hull and Ron Dearing UTC, as well as local primary and secondary schools, to support skills development and training in the region. Working in partnership with the University of Sheffield Advanced Manufacturing Research Centre, the Supply Chain Network and CATCH, Equinor has also hosted H2H Supplier Events for local businesses to learn more about opportunities connected to H2H Saltend.

The H2H Saltend Project is an anchor project for Humberside, which offers the opportunity for inward investment of business to benefit from low carbon energy. This offers the potential for new job creation and growth of a low carbon economy.

For further information on our procurement processes and working with us, please visit: <https://www.equinor.com/en/supply-chain.html>.

Wider Humber Region

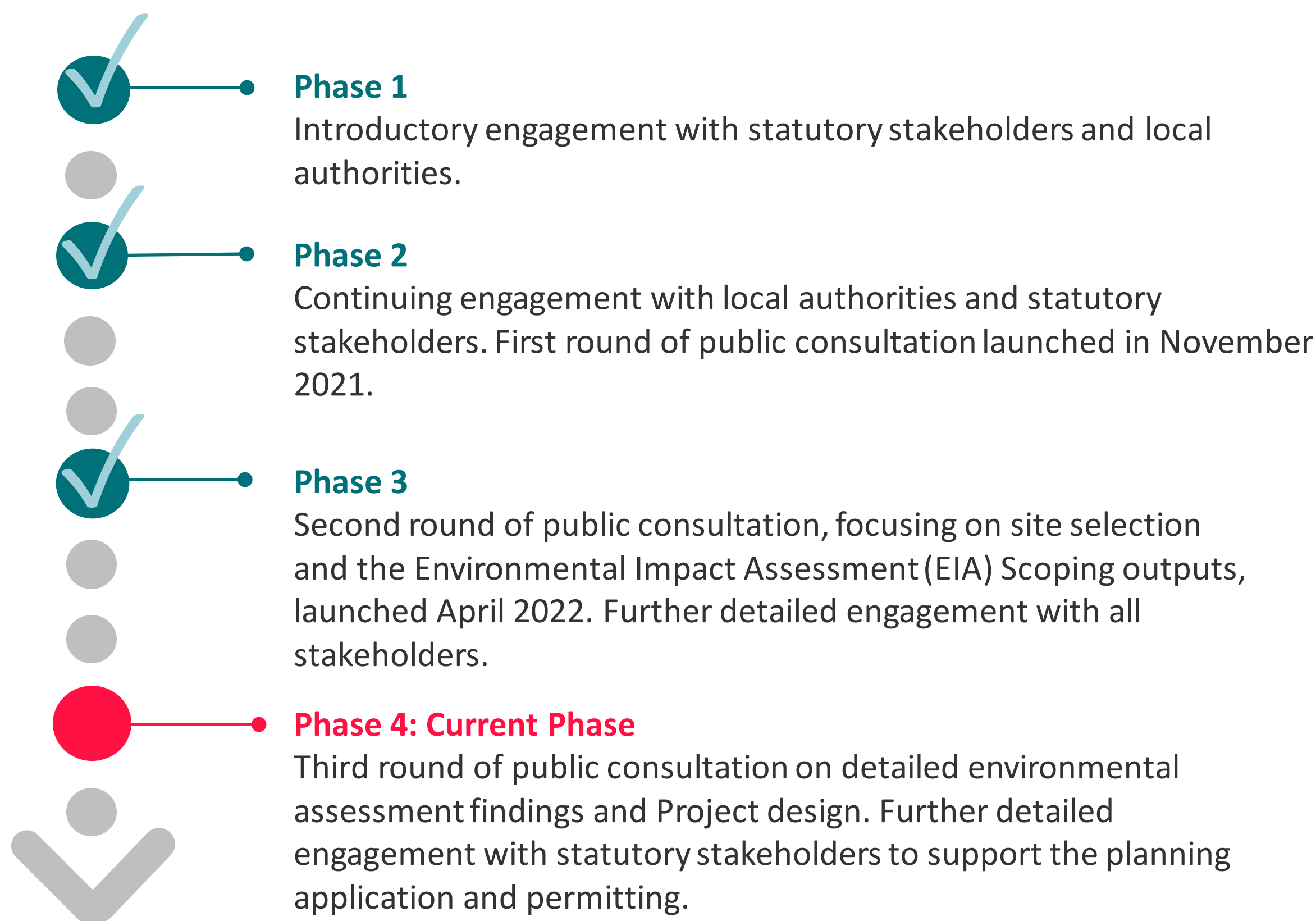
H2H Saltend Phase 1 Focus Areas



Engagement, Consultation and Next Steps



We are committed to an open and ongoing dialogue with our stakeholders. The H2H Saltend Project team has undertaken three phases of virtual and in-person engagement activities with community members, local authorities and wider statutory stakeholders. The diagram below summarises the key phases of our programme of engagement.



Provide Your Feedback

As this is the final stage of public consultation for the Project, we encourage you to provide your feedback by filling out the forms provided online at engage.erm.com/equinor-h2h-saltend, and at the in-person events. Following Phase 4 consultation, all feedback will be analysed, and the Environmental Impact Assessment will be finalised. This will sit within the planning application, which is expected to be submitted in March 2023. There will also be opportunity to provide feedback to the council regarding the application, upon submission. Examples of how feedback has been taken on board thus far are detailed in the table below.

Topics Raised by Stakeholder	Project Response
Traffic	The EIA has responded to local concerns over traffic in the assessment of the impacts of construction and operational traffic. Approved routes will be established for HGVs, and the focus will be away from Staithes Road and Preston. The locally based construction workforce will be encouraged to use local roads. Anticipated increases in traffic levels on Staithes Road will be limited during peak construction and negligible during operation. Additionally, Equinor is proposing to employ a modular design, with enhanced use of the adjacent port facilities during construction and the benefit of reducing road traffic.
Mitigation before construction	Mitigation measures will be set out in a Construction Environmental Management Plan (CEMP) that will be submitted to East Riding of Yorkshire Council for review and approval before construction can commence. The CEMP, among other things, will include monitoring (e.g. of noise), inspection and reporting requirements.
Proximity to DL10 office block and laboratory	The main process plant items with major accident hazard potential will be located at a sufficient distance from the DL10 buildings. During the FEED stage, detailed consequence modelling and quantitative risk assessments will be carried out to confirm that the risks are managed to an acceptable level.

Get in Touch with Us

If you would like more information or would like to get in touch with us about any wider issues, please contact us at:

Email: H2HSaltend@equinor.com

Website: equinor.com/energy/h2h-saltend

