

Ferrybridge Hydrogen

Public Consultation
February 10th - March 10th 2025



Contents

| | |
|--|----|
| Welcome to our public consultation on the Ferrybridge Hydrogen project | 4 |
| Ferrybridge Hydrogen project | 5 |
| What is the Ferrybridge Hydrogen project? | 6 |
| Our focus on safety | 8 |
| Working with the community | 10 |
| Environmental assessment | 11 |
| Assessing project impacts | 12 |
| Hydrogen - the fuel of the future | 14 |
| Next steps | 15 |
| Your feedback | 16 |



Welcome to our public consultation on the Ferrybridge Hydrogen project

SSE Thermal - Who we are

As the UK's clean energy champion, SSE's vision is to provide the energy needed today while building a better world of energy for tomorrow.

SSE Thermal operates an industry-leading fleet of flexible generation and energy storage assets across the UK and Ireland. We believe flexible and efficient thermal energy will play a critical role in the transition to a net zero future, complementing renewable generation and maintaining security of supply.

At SSE Thermal, we are actively exploring opportunities in hydrogen technologies to support a low-carbon future and ensure we can continue to provide flexible and reliable energy in a net zero world.

Visit: www.ssethermal.com to find out more.



Ferrybridge Hydrogen project

SSE Thermal's Ferrybridge site in West Yorkshire holds a proud place in the UK's power generation story and is an ideal location for new technologies like hydrogen production.

In line with our commitment to deliver a low carbon future, we are proposing to build and operate a 50MW green hydrogen production facility at the site that will use renewable power to support the decarbonisation of hard-to-abate industries in the region.

The project will be situated on land within the former Ferrybridge C Power Station site, which SSE Thermal has owned since 2004.



Illustration of the proposed Ferrybridge Hydrogen project.

The Ferrybridge Hydrogen Project would become one of the first green hydrogen plants in the UK's drive towards net zero, helping power local industries for decades to come.

We firmly believe that flexible low-carbon hydrogen will be a vital component of a hydrogen economy and we are developing projects across the full value chain of production, storage and power generation. Utilising our existing sites, skills and capabilities, we intend to deliver on the promise of hydrogen in support of decarbonisation.

The purpose of this consultation is to understand your views on our proposals for the project before we submit our planning application, which we expect to do later in 2025.

We are already working with a number of local businesses who are keen to use hydrogen to help them in their own efforts to decarbonise, including:



What is the Ferrybridge Hydrogen project?

Within our application, we will be seeking consent for the following activities that will take place within the red line boundary shown below:

- The 50MW facility which will produce up to 21 tonnes of hydrogen per day.
- A short pipeline within the site which will take some hydrogen to a nearby customer.

In addition to this, hydrogen will also be taken via tube trailers from the site to be used by other customers in the local area.

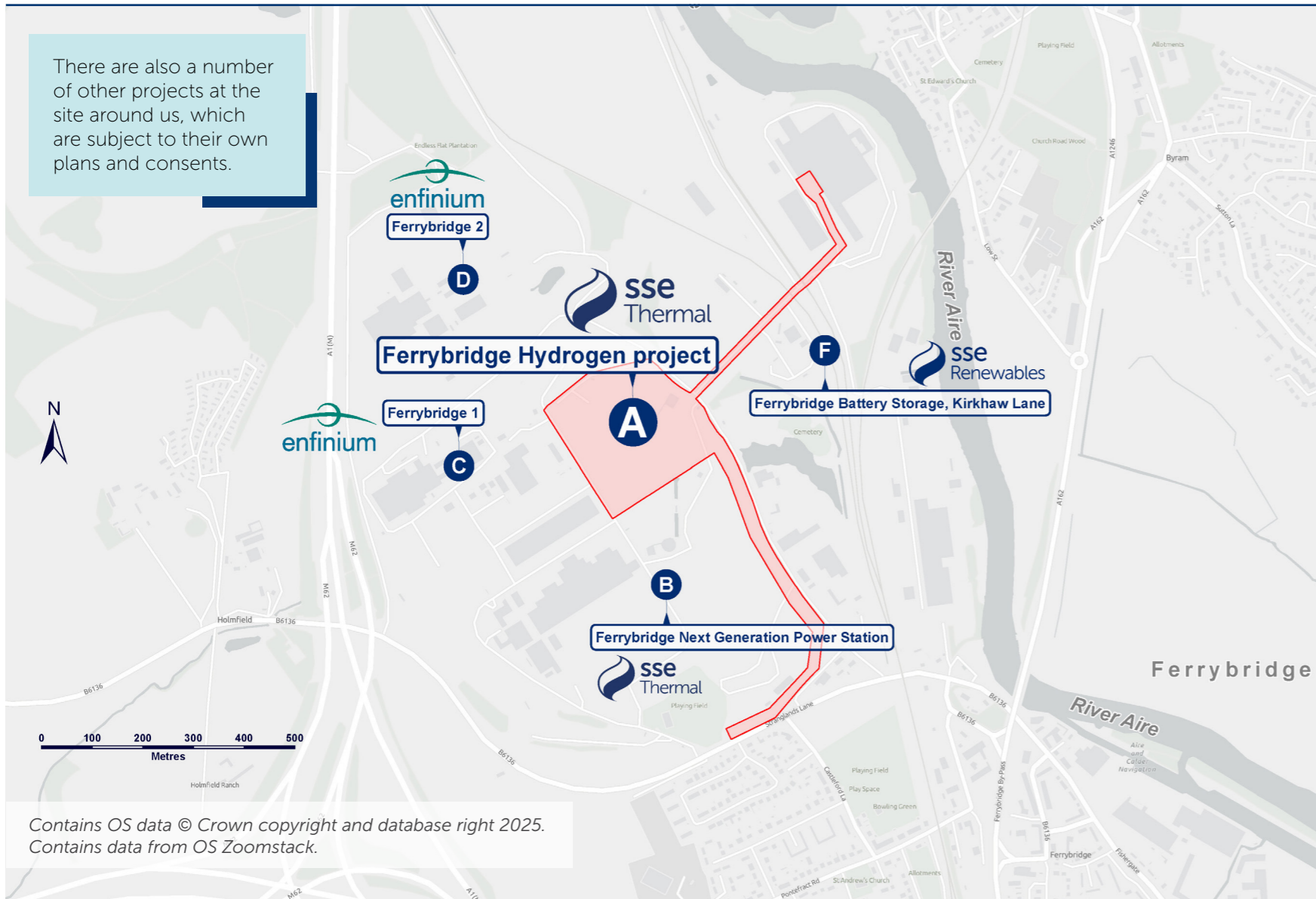
Why here?

SSE is committed to the future of energy generation at Ferrybridge and the site is an ideal location for a hydrogen production facility.

It is well placed to serve regional industries and close to existing power grid connections with great transport links. There a large number of industries in the region who could benefit from the Ferrybridge Hydrogen project as we all work towards a net zero future.

We are in discussions with a number of these industries, such as glass manufacturers and construction materials manufacturers, who are keen to use our hydrogen to help them in their efforts to decarbonise.

Ferrybridge Hydrogen would be ideally situated to help drive the local hydrogen economy and promote economic growth, kick-start local supply chains and create jobs and skills for the future.



| | Title | Project description | Stage of development |
|---|--|--|---|
| A | Ferrybridge Hydrogen facility | Proposed 50-Megawatt (MW) hydrogen production facility, producing green hydrogen from renewable electricity. | The planning application to Wakefield Council is planned for the summer of 2025. |
| B | Ferrybridge Next Generation Power Station | Proposed 1.3-Gigawatt (GW) hydrogen-ready power station. | The application for consent to the Secretary of State (SoS) is planned for Q4 2025. |
| C | Ferrybridge 1 | Enfinium's 85MW energy from waste facility has been operational since 2015. | Operational. |
| D | Ferrybridge 2 | Enfinium's 'sister' facility also produces 85MW has been operational since 2019. | Operational. |
| E | Mountpark Ferrybridge | Proposed industrial and logistics campus. | The project was approved by Wakefield Council in August 2024. Construction works are planned for Q2 2025. |
| F | Ferrybridge Battery Storage, Kirkhaw Lane. | Proposed 150MW Battery Energy Storage facility, providing electricity into the UK's national grid. | The project was approved by Wakefield Council June 2023 and is currently under construction. |

Proposed and operational projects within the Former Ferrybridge Power Station C site.

Our focus on safety

Safety is at the heart of everything we do. If it isn't safe we don't do it.

At SSE Thermal, we do everything safely and responsibly, or not at all. We safely managed the operations of the former Ferrybridge C Power Station and will bring all of our care and experience to our new plans for the site.



SSE Thermal and the wider SSE group manage a large portfolio of energy production facilities all over the UK and have done for many years. We will bring all our expertise and resource to safely manage all our new projects including Ferrybridge Hydrogen.

When using a new energy source, it is important to learn as much as possible about any potential risks and how to manage them.

Strict safety protocols are at the centre of all SSE operations, with our specialist understanding of the risks underpinning the development of hydrogen production and the safe delivery of it to end users.

Hydrogen safety

Whilst hydrogen has some unique physical and chemical properties, with safety in design and operation it can be handled safely.

Hydrogen has been used for a wide variety of purposes for over 100 years so we know a lot about it.

Hydrogen is not inherently more dangerous than other fuel sources. Hydrogen is flammable and must be handled with care, just like other flammable fuels.

Safety measures for hydrogen facilities therefore are designed to greatly minimise any risk of leakage:

-  All connections are designed specifically for hydrogen and the number of detachable connections minimised.
-  Enclosed areas are provided with ventilation to avoid any buildup of hydrogen in the event of leakage.
-  Appropriate materials and instrumentation rated for hydrogen service are used throughout.
-  Facilities are equipped with safety valves, pressure reliefs and gas leak detection equipment.
-  Site layout is arranged to ensure adequate distances between potential hazards.

The project will be operated and maintained under standard operating procedures by suitably qualified and experienced personnel in accordance with safe systems of work for hydrogen operation.

Will the facility be safe?

The generation of Hydrogen isn't new - it is a well-established process in industry and is produced and used around the UK in different ways. The UK is a leader in the hydrogen market and has been making and supplying hydrogen for over 100 years. Right now, over 70 million tonnes of hydrogen are produced worldwide each year, mostly from fossil fuels. Because of this, its health and safety risk is well understood.

The use of hydrogen needs to be assessed according to regulations focusing on dangerous substances and explosive atmospheres, and simple design constraints and operational precautions can be put in place to mitigate risks. Hydrogen, like hydrocarbons such as petrol and natural gas, is governed by international codes, regulations, and standards to ensure its safe production, storage, transportation, and use. It has been utilised in the UK for various industrial applications for many years, and the country has a solid reputation for the safe distribution and storage of combustion gases.

Are you storing hydrogen? Isn't that dangerous?

Hydrogen will be produced on-demand for customers, with some minor localised storage within the facility for 'buffering' of supply as part of the production process. There are no current plans to have large-scale hydrogen storage (e.g tanks) on site.

How are you addressing safety mitigation and management?

Hydrogen production facilities must prioritise safety to protect personnel, the public, and the environment. The design of the Ferrybridge Hydrogen facility has been undertaken in line with available UK Regulatory Compliance and Standards including adherence to all relevant national and international safety regulations, industry standards, and best practices.

Working with the community

Our commitment to our communities

At SSE Thermal, our job is to provide the energy needed today while building a better world of energy for tomorrow.

We are committed to supporting the communities in which we operate and we understand the importance of making a positive contribution to society by being active in the communities that we are part of.

We want to continue to support the communities close to our sites and make a positive contribution to people's lives.



Opportunities for community investment and working with local businesses

Share your ideas with us...

Benefits for the community

To guarantee a community commitment package is shaped fairly and led by the community, we will work with local stakeholders to ensure benefits are tailored to local need.

Our commitment to our communities includes:

- Being active and present in the local community and involving them in our projects.
- Working with agencies who help local businesses access opportunities from our supply chain to ensure local businesses benefit.
- Working with local education providers to deliver lessons based around future careers, future technology and the energy sector to inspire future generations.
- Ensuring communities can shape our proposals through a Community Liaison Group, attended by dedicated local residents who are instrumental to our communication with the community.

SSE Community Hub: <https://www.ssethermal.com/communities>

If you are a local business or service provider, please get in touch with our team or via our website.

Keeping you updated

The Ferrybridge Community Liaison Group (CLG) has been active for more than a decade and continues to meet regularly to share progress on activities at the site and discuss any concerns, possible impacts on the community and mitigation measures.

The current CLG is made up of local stakeholders, including your local ward councillors, regional parish councils and relevant bodies including the Environment Agency and Wakefield Council's Environmental Health Team.

We know this group will be instrumental to our communication with the community. This will ensure communities can continue to be informed about all of the activities at the site as well as shaping proposals like the proposed Ferrybridge Hydrogen project.

The minutes of each Community Liaison Group meeting can be found on the SSE Thermal website.

There is also our dedicated stakeholder engagement manager who you can contact at any time:



Andy Edgeworth
Stakeholder Engagement Manager
E: andy.edgeworth@sse.com

Environmental assessment

Assessing project impacts

We submitted a formal screening request to Wakefield Council in May 2024 as part of the consenting process and they confirmed that the site does not require an Environmental Impact Assessment (EIA).

We are considering a wide range of environmental subjects, including:



Traffic impacts (both during construction and long-term)



Noise



Visual impacts



Ecology & biodiversity

Ecology and natural habitats

Working with Wakefield Council, we are considering the potential effects on local ecology by assessing potential disturbances from construction and operation.

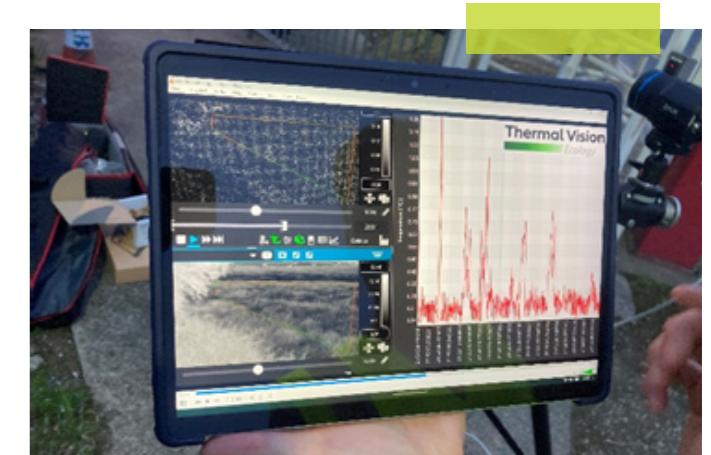
We know there is an important wildlife habitat network running around the site. As part of our assessments, we are carrying out extensive surveys on the ecology of the site and the surrounding areas. This includes surveys for bats, birds, reptiles, amphibians and badgers.

A Construction Environmental Management Plan is being prepared and will be submitted to Wakefield Council as part of the planning application.

Biodiversity Net Gain (BNG)

We are developing proposals to ensure plans for our facility make an overall positive contribution to nature, through a process called Biodiversity Net Gain (BNG). This focuses on comparing the pre and post construction biodiversity values to ensure a beneficial impact overall.

At SSE our goal is to leave the natural environment in a measurably better state than it was pre-development, so we are committed to achieving a biodiversity net gain of at least 10% with consideration to local priority habitats. This will result in a positive effect on the habitats and species at and around the site through initiatives to support and enhance biodiversity and the natural surroundings.



The team used thermal imaging to identify potential bat roosts in buildings around the site.



Nearby wetland habitat at Fairburn Ings, West Yorkshire and a wild Kingfisher.

Assessing project impacts

Assessing project impacts

Traffic

Access to the site will be via Kirkhaw Lane, from the B6136 Stranglands Lane, after exiting the A162 Ferrybridge Bypass. Construction is estimated to take approximately two years which will mean an average of 50 HGVs and 98 car movements per day to and from the site.

We will also need to use tube trailers to transport some of the hydrogen produced which will mean once operational, up to 20 HGVs will be picking up and dropping off (40 movements) on a 24/7 basis.

To mitigate the impact of both construction and operational traffic we are working with Wakefield Council to develop a traffic management plan.

We are also working with other businesses in the local area to understand their own development plans and work together to avoid any overlap where possible.



Noise and Vibration

We are assessing the potential noise and vibration effects of our project both during construction and operation. We are assessing the potential impact on residential areas and other important features close to the site.

Any noise effects from construction and operation, as well as traffic, will be mitigated through noise control measures, such as acoustic enclosures and noise barriers where appropriate.

Cultural Heritage

The area is known to be rich in archaeology and near to important heritage assets like Ferrybridge Henge.

Given the project will be located within the former power station site, and based on the information gathered from our assessment and surveys, the project and its construction will have minor effects on archaeology.

However, any groundworks in previously undisturbed areas will require a staged archaeological field evaluation, including geoarchaeological assessment and we will work with specialist organisations on this.

Hydrology and Geology

The proposed project is next to the Fryston Beck waterway and the River Aire. Potential impacts on the water environment, including flood risk, have been assessed.



John Carr's Old toll bridge completed 1804 the Old Great North Road Ferrybridge Knottingley West Yorkshire Britain, UK.

Landscape and Visual

As part of the planning process, a Landscape and Visual Appraisal (LVA) will be undertaken and explained in accordance with a methodology compliant with industry standards.



Viewpoint looking South West from Brotherton.



Viewpoint looking West from Byram.



Viewpoint looking North from Stranglands Lane.

Hydrogen - the fuel of the future

What is hydrogen and why is it useful?

Hydrogen is the most abundant chemical element, making up around 75% of the mass of the universe. It can be produced from a variety of resources, such as natural gas, nuclear power, biogas and renewable power, like solar and wind. It can then be used for a variety of purposes in industrial processes or as fuel, across a range of different sectors.

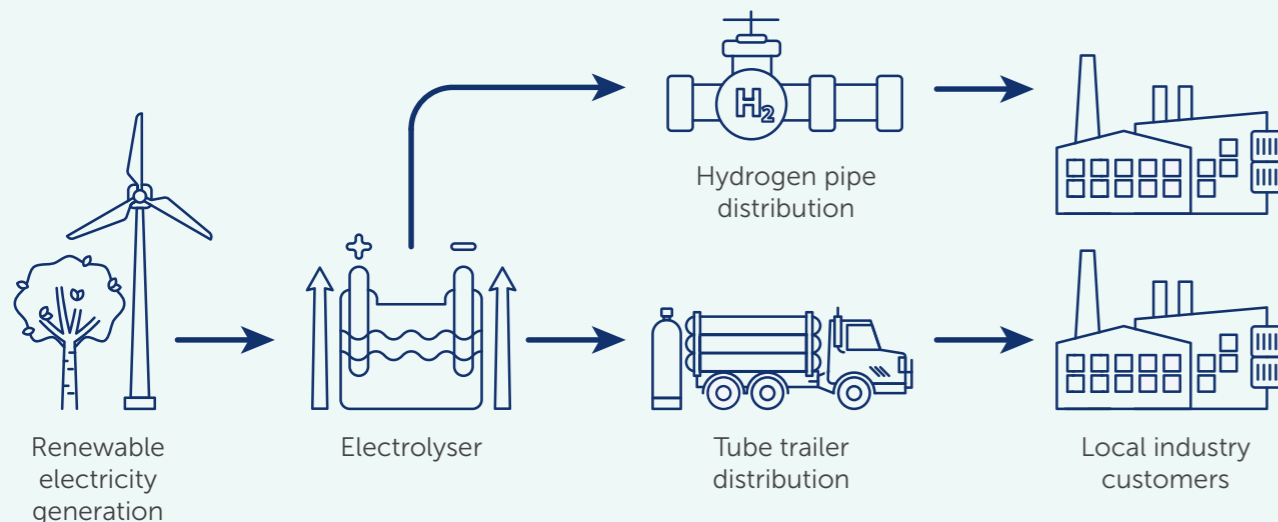
What is green hydrogen and how is it produced?

The proposed Ferrybridge Hydrogen project will use renewable energy sources to produce green hydrogen.

Green Hydrogen is produced by using renewable electricity to power an electrolyser that splits the hydrogen from water molecules. This process produces pure hydrogen.

The power needed for the project will be sourced from SSE's existing renewables portfolio and will use a Power Purchase Agreement with Renewable Energy Guarantee of Origin (REGO) certificates to prove where the power was generated.

This means the electricity needed to produce the hydrogen will come from SSE's own portfolio of renewable production plants such as hydro-electric plants and wind farms.



Next steps

Following the consultation closing on Monday 10 March 2025, we'll review all the suggestions and comments we've received and where practicable, we will shape the proposals based on feedback received.

We will analyse your feedback as we make further refinements to our proposed design and develop any mitigation measures.

Given the nature of our plans, planning permission will be determined under the Town and Country Planning Act (TCPA). We will submit an application to Wakefield Council as the local planning authority.

Project timeline

If our application is approved and we take an investment decision to build, construction could start in 2027 with operation beginning in 2029.



Your feedback



We value your feedback on our plans at this stage and encourage you to respond to our consultation and the information we've shared.

We need your feedback by 10 March.



You can provide feedback in the following ways:



Accessing our online consultation and submitting feedback online via www.ssethermal.com/FBH



Emailing your feedback form to: FBHconsultation@sse.com



Posting your feedback form, free of charge, by writing '**Freepost FBH**' onto an envelope



Call our telephone line and requesting a copy of our consultation materials and feedback form via: **+44 18 6538 4870**

Comments received during our consultations will inform our proposals, as well as ongoing technical assessments, and consultation with statutory stakeholders and the local authority. We will report on how your feedback has been considered in our planning application.

Please note that comments made in response to this public consultation are not representations to the planning authority. Once a planning application has been submitted to Wakefield Council, there will be an opportunity to make representations.



Scan to visit our website

