



Ferrybridge Hydrogen

ANTICIPATED QUESTIONS

GENERAL

What is the Ferrybridge Hydrogen Project?

Ferrybridge Hydrogen is a new facility that will produce green hydrogen on the site of the Former Ferrybridge C Power Station. The hydrogen will be produced using renewable electricity from the grid to power the process of electrolysis. The hydrogen will then be used by local industries to help them decarbonise their operations. The project being proposed in our forthcoming planning application includes:

- Installation of 50 MW green hydrogen production facility;
- Distribution pipeline to single local customer;
- Tube trailer infrastructure for other local customers; and
- Up to 21 tonnes of green hydrogen produced per day (up to 7,665 tonnes annually).

How is hydrogen produced?

Water will be provided by the public water supply and treated at a demineralisation plant on-site. The renewable power will be sourced from the grid and used to power an electrolyser to split the water into hydrogen and oxygen. This hydrogen will be captured and the by-product oxygen will be vented to the atmosphere.

How can you guarantee the electricity provided comes from a renewable source?

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.

Why build Ferrybridge Hydrogen here?

Following closure of the Power Station in 2016, SSE Thermal are reinvesting in the site to meet new energy needs. Through technical studies, suitability of this part of the site for the facility was preferred due to:

- Proximity to regional industries and distance from residential properties;
- Existing power and water connection;
- Re-use of a former brownfield site which is key to SSE's commitment to the future of the Ferrybridge site.
- Reduced likelihood of impacts to landscape or sensitive habitats; and
- Good transport links.

Why is Hydrogen needed?

Hydrogen will allow local industries such as glass and construction material manufacturers to plan their own route to decarbonisation and a net zero future. We are in discussions with a number of these industries who are keen to use our hydrogen to help them achieve their goals.

Will the facility be running all of the time?

The facility will have the capability of running 24/7. However, hydrogen will be produced on-demand using available renewable power and the requirements of our customers.

ENGINEERING & SAFETY

How big is the facility?

The facility will cover an area of approximately 6.5 hectares and will be situated on the north part of the former Ferrybridge C Power Station site. The main building will house the electrolyser equipment and will be approximately 12m tall. The hydrogen vent stack (or tower stack) will be the tallest part of the site at approximately 30m tall. For reference, the previous Ferrybridge C Power Station cooling towers were 115m tall and considerably wider.

How will the hydrogen be transported?

The hydrogen will be transported to a nearby customer via a short distribution pipeline. It will also be transported to other customers via tube trailers. These will be refilled from the facility within the site.

What is the tower stack for?

The hydrogen vent stack (or tower stack) provides a way to safely vent small amounts of excess gas. The nature of the electrolyser process involves generating a small hydrogen stream that has to be vented. By releasing gases at a height, the stack helps to disperse them into the atmosphere safely.

Will the facility be safe? What happens if there is a fire or explosion?

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.

At present, an estimated 93 million tonnes of hydrogen (mostly from fossil fuels) are produced worldwide every year according to the International Energy Agency.

Because of this, its health and safety risk is well understood and its use is assessed according to regulations focusing on dangerous substances and explosive atmospheres.

In the UK, hydrogen is governed by international codes, regulations and standards and the country has a solid history and strong reputation for its safe distribution and storage.

Are you storing hydrogen? Isn't that dangerous?

There is no fixed storage on site. The use of tube trailers for delivery will result in hydrogen stored during the tube trailer loading process as well as hydrogen running through the process systems and pipework.

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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 UK Regulations as well as recognised national and international standards and best practices.

ENVIRONMENTAL IMPACT ASSESSMENT

Will there be environmental impacts on the local area?

A wide range of studies are being carried out to understand potential impacts associated with the proposals and identify mitigation measures where appropriate. This includes ecological surveys including bats, invertebrates and site walkovers to establish types of habitats. These surveys found that the majority of habitats are common, widespread and of limited ecological importance including scrubland and vegetated urban land.

Where evidence of species was found, or suitable habitats identified, a site-specific management strategy (currently being developed) will seek to mitigate impacts or improve effects in the long term.

Will there be visual impacts? How will you mitigate it?

Given the largely industrial nature of the Former Power Station C site, together with the site being situated away from residential properties and the majority of the buildings laying low in the landscape, the Hydrogen Vent Stack will be the part of the facility that will remain most visible.

The majority of the permanent structures and equipment will be positioned away from the public view (i.e. looking north from Ferrybridge). Tree screening also exists around the majority of the site, given its previous development, which restricts this view further. We are currently working on a combined landscape plan and Biodiversity Net Gain (BNG) plan, which we will be sharing as part of the planning application.

How long will construction take and when will it start?

Construction is estimated to take approximately two years and is anticipated to start in 2027.

What lighting will be used during construction and operation? Will it be 24/7?

Any lighting required at the site both during construction and operation will be minimised to that strictly required for safety and security.

Will the site be noisy?

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.

Various baseline noise surveys across the perimeter of the site have been carried out which will feed into the planning application. Operational noise limits are to be determined and will be proposed by Wakefield Council upon validation of the planning application, which the site will be required to adhere to. This will be determined further down the project, but it will minimise to an appropriate level any operational noise to the local community and is therefore not expected at this stage to cause disturbance to the community.

How will local roads be used during construction and operation? How will they be impacted?

Local roads will be needed for construction traffic during the construction phase. Access to the site will be via Kirkhaw Lane, from the B6136 Stranglands Lane, after exiting the A162 Ferrybridge Bypass. During the two-year construction, an average of 50 HGV's and 98 car movements are envisaged per day to and from the site.

Once the facility is operational, we will also need to use this road network to transport some of the hydrogen produced at the site. These roads will also be used by Tube Trailers (trucks that haul hydrogen) to transport hydrogen away from the facility. Up to 20 HGV's will be picking up and dropping off (40 movements) per day.

A Traffic Management Plan will be developed in conjunction with Wakefield Council to consider and address impact to road users during the construction and operation phases. We will review potential impacts on all road users as part of this. The plan will consider the wider Aire Energy Park development works in alignment with other business requirements. We will be working with other businesses within the local area to consider any overlap of construction activities and potential construction traffic.

Expected mitigation measures include phased deliveries to site, traffic marshalling, vehicle mud-wash facilities and backloading (delivery vehicles utilised to remove material from site).

Subject to planning permission being granted, a contractor will be appointed and a detailed construction programme submitted to the Council for approval.

Will the production of hydrogen smell?

No - the production of green hydrogen does not create an odour.

Will jobs be created at the site during construction, during operation?

The development of Ferrybridge Hydrogen is expected to create jobs and stimulate economic growth in the local area. During construction and operation, there would be opportunities for local businesses and workers.

During construction, jobs will be created in the local area both on-site and others in the local supply chain. We will ensure local people are informed in the first instance of these roles to ensure those interested can have the opportunity to apply.

OTHER

Doesn't hydrogen production this way use a lot of water? Where will this come from?

Water will be supplied by Yorkshire Water through local supply (towns water) to support the hydrogen production on demand. SSE Thermal are engaging with Yorkshire Water and it has been established that the facility will not place a burden on water availability. Any wastewater from the process will be released to the sewer system.

How will the SSE be contributing to the local community?

As operators of the former coal fired power station at this site, SSE Thermal is committed to continuing to work with the community throughout the design, construction, and operation of the project in line with SSE's Principles of Stakeholder Engagement. SSE Thermal wants to support the communities close to our proposed project and make a positive change.

The local Community Liaison Group is made up of a range of local political representatives, community groups and regulatory bodies and has been running for more than two decades. You can see the meeting minutes on the SSE Thermal website.

How can residents get in touch and speak to someone to raise issues during construction?

We take our commitments to the local community seriously and have a dedicated local stakeholder manager who acts as a point of contact for any concerns or questions.

You can contact him here:

Andy Edgeworth

 andy.edgeworth@sse.com |  07990493364

What are SSE's wider plans for the former Ferrybridge Power Station site?

SSE is committed to a future at Ferrybridge, making the site a leading provider of flexible thermal energy in a net zero world.

Bringing forward plans for a range of low carbon solutions at the site to help provide the energy needed today while building a better world of energy for tomorrow.

This will see us invest in the next generation of skills in the region and local supply chains through the delivery of a range of new low-carbon energy projects.

SSE currently has two other proposed projects at the site:

Ferrybridge Next Generation Power Station – A flexible hydrogen ready power station designed to run on 100% hydrogen fuel from the outset but could also run on natural gas or a blend of the two. For more information visit: www.ssethermal.com/FBNG

Ferrybridge Battery Storage Project - a 150MW capacity battery energy storage system (BESS) that is currently under construction. For more information visit: <https://www.sserenewables.com/solar-and-battery/battery-storage/ferrybridge/>

How can I keep up to date with progress on the project?

You can keep up to date with the project by visiting our dedicated project website:

 www.ssethermal.com/FBH