

Humber H₂ub[®] (Green) project



Uniper is launching its proposals to build a low-carbon hydrogen production facility at its Killingholme power station site. The Humber H₂ub[®] (Green) project would include green hydrogen production capability with a capacity of up to 120MW and the potential for future expansion of a further 200MW+. The hydrogen would be used to replace some refinery fuel gas in industrial scale fired heaters as part of Phillips 66 Limited's plans to reduce the Humber Refinery's scope 1 operational emissions.*

Uniper and Phillips 66 Limited have signed a collaboration agreement to work towards a supply of green hydrogen from the Humber H₂ub[®] (Green) project to Phillips 66 Limited's Humber Refinery from 2029. The next stages in the project will be the submission of a planning application, and the start of front end engineering and design (FEED) studies, both expected to be in the first half of 2025. The project would then progress towards final investment decision, which is expected to be taken in 2026 with potential operation by 2029.

* Scope 1 emissions are the direct emissions from sources owned or controlled by an organisation or entity

Ahead of a planning application being submitted to North Lincolnshire Council, we want to present our project to the local community. This consultation provides an opportunity for you to find out more about the technology and how the Humber H₂ub[®] (Green) project fits into the region's wider net zero transition.



Indicative site plan



Visit our Public Information Event

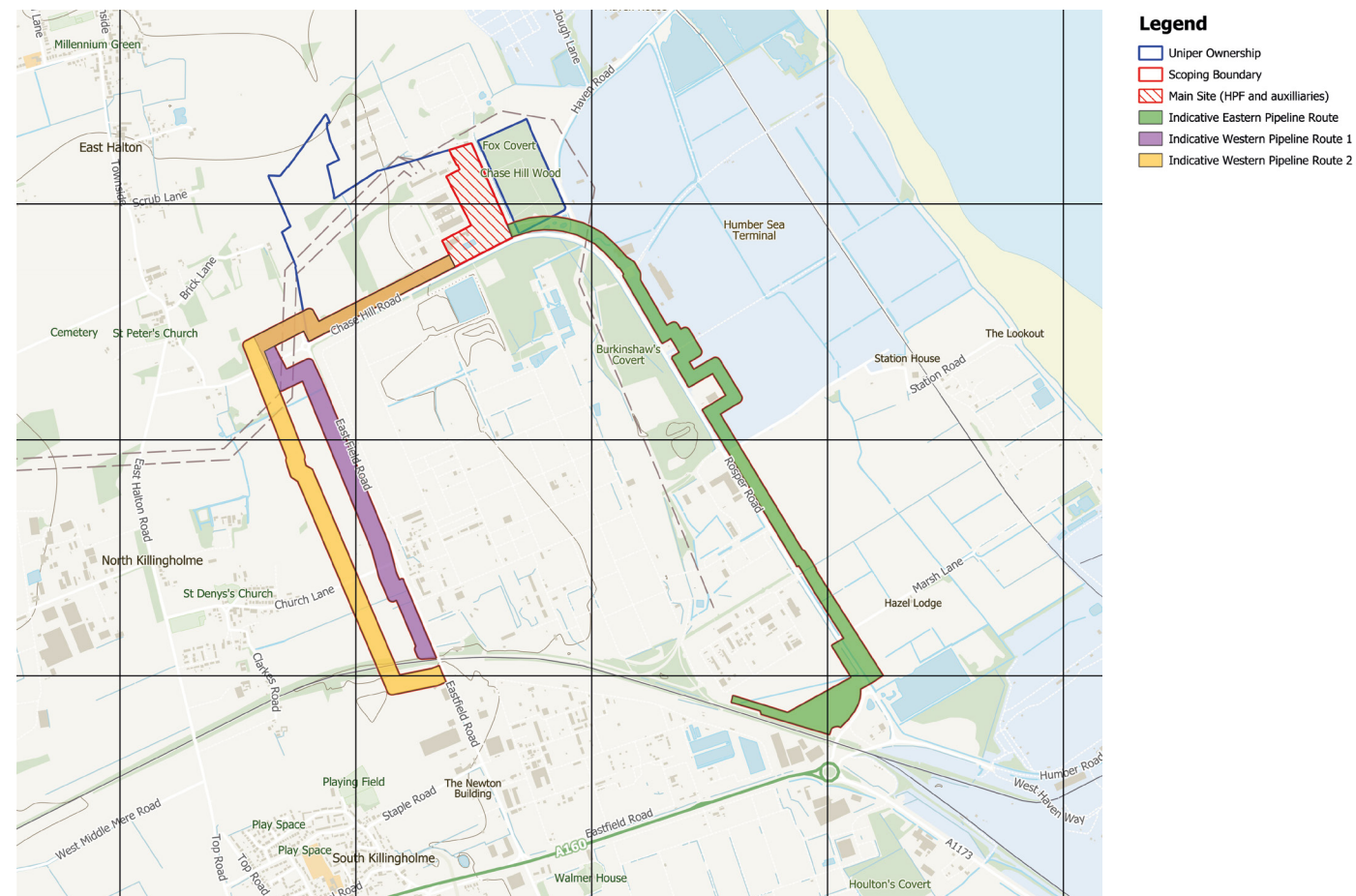
North Killingholme Village Hall – Tuesday 19 November 2024 – 3pm-7pm

Decarbonising the Humber

The Humber is one of four areas in the UK recognised by Government as an ideal area for the creation of new industrial hubs: combining all the required elements to link decarbonised energy, transport and industry.

Situated in the heart of the industrial Humber, the UK's largest industrial cluster by CO₂ emissions, Uniper's Killingholme site has huge potential as an energy transformation hub, supporting the Country's transition to a net zero future. The hydrogen produced by the Humber H₂ub® (Green) project could be used in those parts of the regional economy which are more difficult to decarbonise (such as heavy industry, transport, and power).

As part of a first phase of hydrogen refuelling to reduce some of the Humber Refinery's scope 1 operational emissions, Phillips 66 plans to take around 45 tonnes per day of green hydrogen (equivalent to 100MW electrical capacity) from Uniper's Humber H₂ub® (Green) project. The best solution for delivering the hydrogen produced at Killingholme will be determined during the Front-End Engineering and Design (FEED) studies stage of the project. It is anticipated, however, that the hydrogen would be delivered via a dedicated pipeline.



Indicative pipeline routes

Hydrogen as a fuel source

Hydrogen is a key fuel that can be used as a low carbon alternative in heavy industry, transport and power generation. For this project, the hydrogen would be used as a replacement for some refinery fuel gas. The technology for producing hydrogen already exists and is proven. Once produced,

hydrogen can also be refined into renewable liquid fuels – such as synthetic diesel and sustainable aviation fuel – providing a clean energy source for vehicles and whole industries that currently rely on carbon-intensive fuels.

About Uniper

Uniper is a European energy company with global reach and activities in more than 40 countries. With approximately 8,000 employees, the company makes an important contribution to security of supply in Europe, particularly in its core markets of Germany, the UK, Sweden and the Netherlands. In the UK, Uniper owns and operates a flexible generation portfolio, a fast-cycle gas storage facility and two high pressure gas pipelines, from Theddlethorpe to Killingholme and from Blyborough to Cottam. We also have significant long-term regasification capacity at the Grain LNG terminal in Kent, to convert LNG back to natural gas.

Uniper intends to be completely carbon-neutral by 2040 and aims for its installed power generating

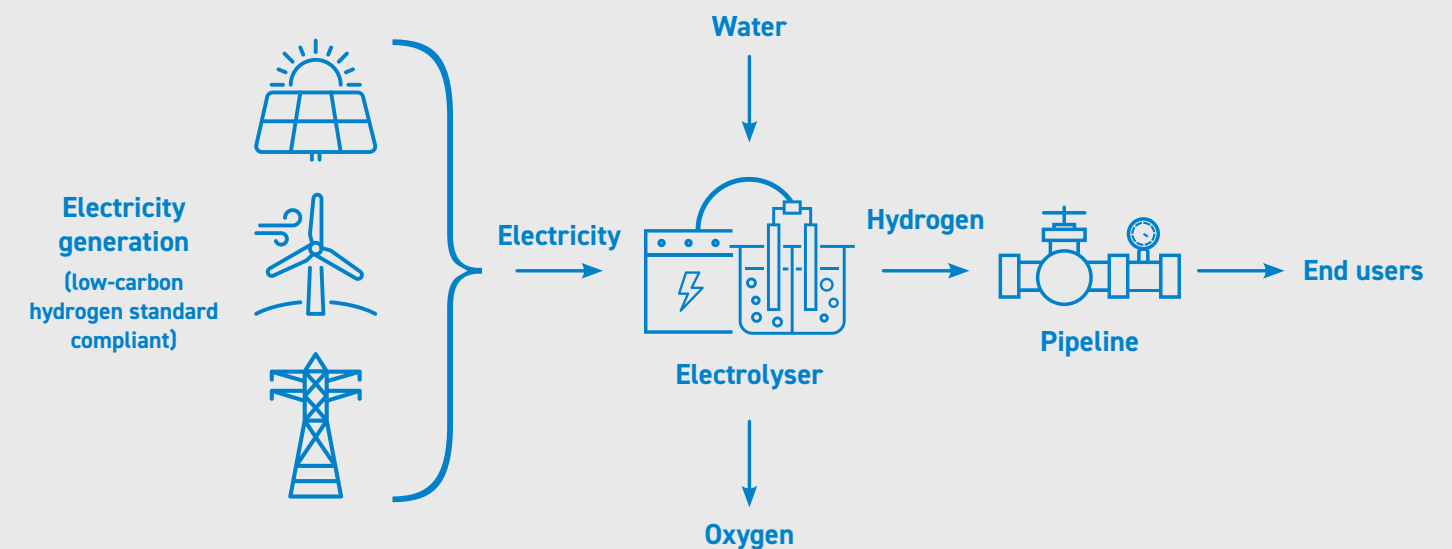
capacity to be more than 80% zero-carbon by the early 2030s. The company is progressively expanding its gas portfolio to include low carbon gases like hydrogen and biomethane and aims to convert to these gases over the long term.

Uniper is a reliable partner for industrial enterprises for planning and implementing innovative, lower-carbon solutions on their decarbonisation journey. Uniper as a hydrogen pioneer, is active worldwide along the entire hydrogen value chain, and is progressing projects such as the Humber H₂ub® (Green) project to make hydrogen a mainstay of the energy supply.

The hydrogen production process

The Humber H₂ub® (Green) project would produce electrolytic (green) hydrogen which meets the UK Low Carbon Hydrogen Standard*. Green hydrogen is produced via a process of electrolysis, which is

splitting water into oxygen and hydrogen using electricity from renewable and other low-carbon power sources.



Indicative process diagram

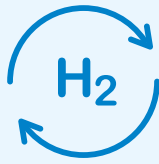
* <https://www.gov.uk/government/publications/uk-low-carbon-hydrogen-standard-emissions-reporting-and-sustainability-criteria>



Computer generated image showing the proposed development

Potential benefits of the Humber H₂ub[®] (Green) project

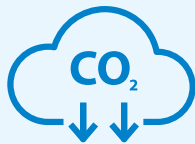
If consented and developed the Humber H₂ub[®] (Green) project could:



Produce up to 120MW of green hydrogen



Provide around 210 full time jobs once operational (direct and indirect)



Reduce Phillips 66 Limited's Humber Refinery emissions by around 100,000 tonnes per annum



Create up to 440 UK jobs during construction



Add up to £10M to the regional economy per annum



Help to meet the UK's net zero targets

Next Steps

We are carrying out environmental surveys that will feed into our Environmental Impact Assessments and are speaking with key local stakeholders which we will continue to do over the coming months. This, along with any feedback from the consultation event, would feed into our planning application which we anticipate submitting to North Lincolnshire Council in the first half of 2025.

The planning application will be accompanied by an Environmental Statement that will set out the results of our Environmental Impact Assessment of the construction, operation and decommissioning phases of the project. Our Environmental Impact Assessment must consider the cumulative effect

of the Humber H₂ub[®] (Green) project alongside existing developments and the potential impacts of other local proposals which already have planning permission. Existing developments would be considered as part of the study baseline; for example, surveys of local noise and air quality would capture the effects of existing operations.

Uniper has a long-standing presence at Killingholme and understands the importance of being a good neighbour. Throughout any development, Uniper would manage all activities to keep any potential impacts to a minimum and ensure we keep local stakeholders, and the community informed throughout the development.

Get Involved

Join us at our public information event - North Killingholme Village Hall on Tuesday 19 November 2024, from 3pm to 7pm. You can also get involved and share your views about the Humber H₂ub[®] (Green) project by contacting us via:

 www.uniperuk.consulting/hhgreen

 0800 066 8941

 hhgreen@communityfeedback.co.uk

 Freepost Humber H2ub (Green)

If you don't have access to the internet, please call us on 0800 066 8941. We can record your feedback, answer any questions and/or send copies of the consultation material (free of charge) in the post.

