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Humber H2ub[®] (Green) Project

Meeting the need for low carbon hydrogen to help decarbonise the industrial Humber.



About the project



Uniper intends to be completely carbon-neutral by 2040 and will invest more than €8 billion by the early 2030s, to significantly grow green and flexible power. We are progressively expanding our gas portfolio to include green gases like hydrogen and aim to convert to these gases over the long term.

As part of this, Uniper is exploring the potential development of a new green hydrogen production facility at our Killingholme site which could contribute to the decarbonisation of the industrial Humber.

The development of low carbon hydrogen production at Killingholme could create opportunities during the construction phase and once it becomes operational, provide permanent highly skilled jobs as well as helping to safeguard jobs in the wider area.

About the project

What is the Humber H₂ub® (Green) Project

The Humber H₂ub® (Green) project is a proposed low carbon hydrogen production facility at Uniper's Killingholme site. It would include electrolytic (green) hydrogen production capability, which meets the UK Low Carbon Hydrogen Standard, with an initial capacity of up to 120MW and potential future expansion of a further 200MW+. In March 2024, Uniper and Phillips 66 Limited signed a collaboration agreement to work together towards a supply of green hydrogen from the Humber H₂ub® (Green) project to Phillips 66 Limited's Humber Refinery. 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*.

The project is targeted to be operational by 2029.

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

The role of hydrogen in the energy transition

Hydrogen is a key fuel that can be used in heavy industry, transport and power generation. The technology for producing hydrogen already exists and is proven. All types of low carbon hydrogen will be needed at scale, including both electrolytic (green) hydrogen, which is produced from renewable energy sources, and more conventional hydrogen-production methods combined with carbon capture and storage technologies. 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.

For the Humber, hydrogen offers a low carbon alternative for those parts of the regional economy, which are more difficult to decarbonise, such as its heavy industry, supporting the region's transition to a net zero future.

Why Killingholme?

The Humber is one of four target locations in the UK, recognised by the 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, our Killingholme site has huge potential as an energy transformation hub, supporting the region's transition to a net zero future. It is an ideal location for large-scale low carbon hydrogen production. It offers a suitable large plot space to facilitate electrolysis-based hydrogen production, adjacent to existing industrial facilities which are seeking to decarbonise.

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). The green hydrogen production facility would be developed as part of Uniper's wider aspirations for our Energy Transformation Hub Killingholme.



Helping to decarbonise the industrial Humber

The Humber region is recognised as the UK's most carbon intensive industrial region and hydrogen will be vital in decarbonising and securing the region's economy. As part of a first phase of hydrogen refuelling to reduce some of the Humber Refinery's scope 1 operational emissions, Phillips 66 Limited plans to take around 45 tonnes per day of green hydrogen (equivalent to 100MW electrical capacity) from our proposed Humber H₂ub® (Green) development. This would contribute to a saving of around 100,000 tonnes of CO₂ a year, as part of Phillips 66 Limited's wider plans to reduce Scope 1 emissions at the refinery.

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

Helping to support the regional economy

The potential development of a hydrogen production facility at our Killingholme site could also help to maintain economic prosperity in the Humber region. We anticipate that if consented and developed, the Humber H₂ub® (Green) hydrogen production facility could create up to 110 jobs on site during construction along with potential opportunities through the wider supply chain. Once operational, as well as providing permanent on site jobs, the green hydrogen production facility could support jobs across the region and wider UK associated with its maintenance and electricity supply. Operation of the proposed facility is also expected to deliver over £40m per annum of GVA in present value terms for the UK economy. Of this, up to £20m per annum could benefit the Yorkshire and Humber region.

*Socio-economic data is taken from an independent assessment carried by a third- party contractor for Uniper in September 2024.

Project plans

The Killingholme site

The proposed new hydrogen production facility would be built on Uniper's land at Chase Hill Road, Killingholme, adjacent to the existing power station.

The map below shows the indicative location for any new infrastructure that would be built on our site, as part of the proposed Humber H₂ub® (Green) project. Please note that these plans are still in an early stage of development and are subject to change following feedback and consultation with the local community, local authorities and other organisations.

The final design will be determined during Front End Engineering Design (FEED) studies.

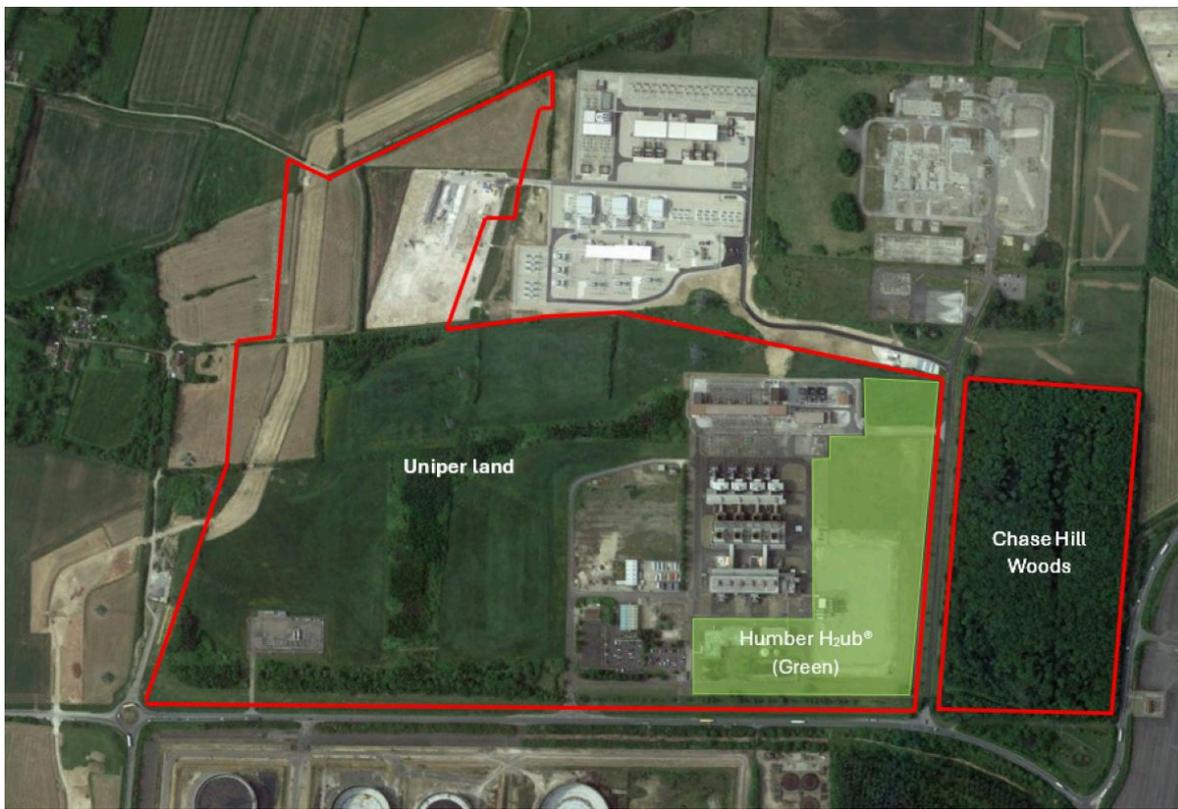


Image shows indicative site plan

What the new facility could look like

The specific technology requirements and design of the proposed facility will be determined during the Front-End Engineering and Design (FEED) phase. However, our preliminary design work suggests that no part of the proposed Humber H₂ub® (Green) project development will be higher than the existing power station. The image below provides a computer-generated representation showing what it could look like.



The hydrogen production process

The Humber H₂ub® (Green) project plans to produce electrolytic (green) hydrogen which meets the UK Low Carbon Hydrogen Standard. Electrolytic, or green hydrogen is hydrogen produced via a process of electrolysis, which is splitting water into oxygen and hydrogen, using electricity from renewable and other sources of low carbon power.

The electricity for the Humber H₂ub® (Green) hydrogen project could come from a range of sources; future on site development, renewable generation, as well as low carbon power generation, either directly connected to the electrolyser or via the national grid, enabled by power purchase agreements and renewable guarantees of origin.

How will the hydrogen be used?

In March 2024, Uniper and Phillips 66 Limited signed a collaboration agreement to work together towards a supply of green hydrogen from the Humber H₂ub® (Green) project to Phillips 66 Limited's Humber Refinery. 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*.

Indicative Timeline

Proposals to develop a new low carbon hydrogen production facility at our Killingholme site are at a very early stage. Although we have initial plans for the project, we are carrying out a process of consultation and engagement with a wide range of stakeholders, including national agencies, local authorities, businesses, community groups and local residents. For more information on our consultation please visit our dedicated consultation website [here](#).

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. If consented, the project would then progress towards final investment decision, which is expected to be taken in 2026 with potential operation by 2029.



Latest news

News updates

In this section you will find project related Uniper press releases.

Uniper's Humber H₂ub® (Green) project shortlisted for HAR2

Public consultation launched for Humber H₂ub® (Green) hydrogen project at Unipe...

Uniper announces plans for Humber H₂ub® (Green) project and enters into a colla...

More Information

In this section you will find additional information on regional developments.

Consultation website: Humber H2ub® (Green) project

 Future Humber

Project documents

Humber Hub Green consultation newsletter

PDF - 2.45 MB



Your questions

What are Uniper's plans for decarbonisation? 

Does this mean you will be decarbonising Killingholme power station? 

How will the hydrogen be delivered to Phillips 66 Limited? 

Where would any proposed hydrogen pipeline be routed? 

Would there be any impact on the road network during construction? 

What routes would be used for construction traffic coming to the site? 

When will you be submitting a planning application? 

How will you engage with the local community? 

How can I get involved now? 

Contact us

If you would like to talk to us about the project, you can contact our Community Relations Team using the following contact information:

Call us on 0800 066 8941

Email us at hhgreen@communityfeedback.co.uk

Write to us at Freepost Humber H2ub (Green)

Visit our dedicated consultation website at <https://uniperuk.consulting/hhgreen/>



Sara Revell

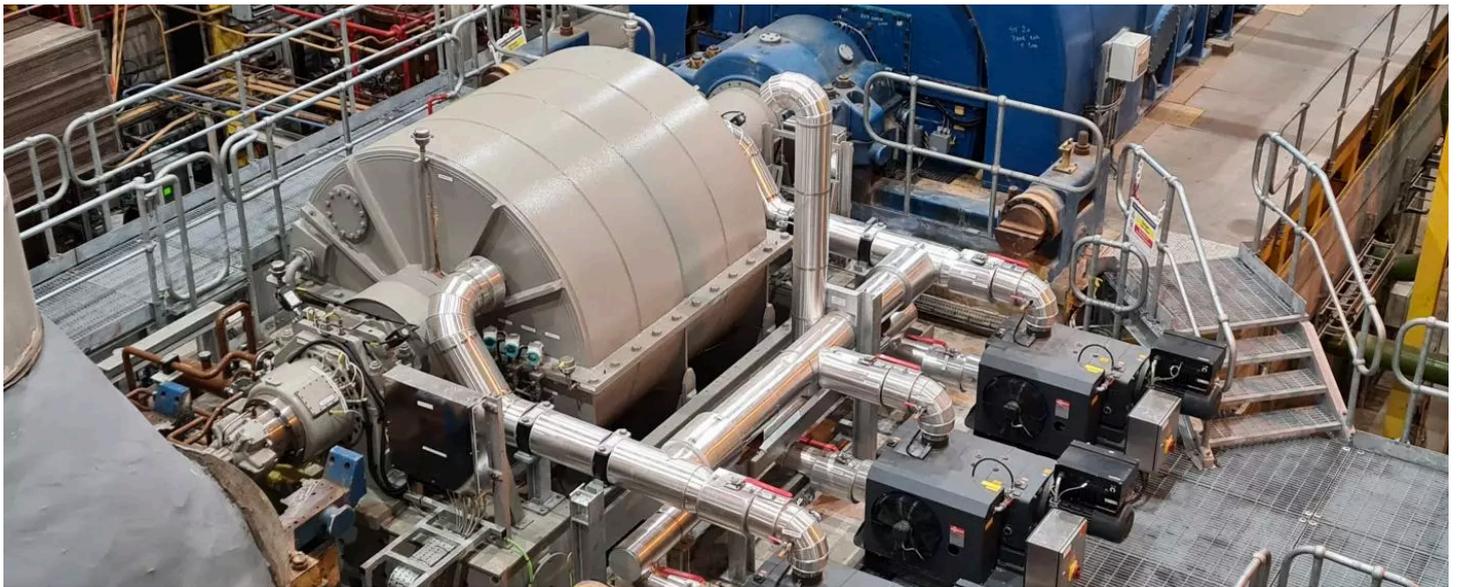
Uniper in the UK: Spokesperson

 [Email Sara](#)

Energy transformation hub Killingholme

Innovative grid stability services

[Read more about the project](#)



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