

The stories behind our advertising

Advertising doesn't offer the space and time to tell the whole Equinor story – it can really only catch your attention and encourage you to find out more. So if our advertising has sparked your interest, this is where you'll be able to discover the details, facts and context behind our ads about supporting the UK energy transition to cleaner power.



Is it high time for
hydrogen in the UK?



How can we make
the UK's east coast
a carbon capture capital?

Our ads **Is it high time for hydrogen in the UK?** and **How can we make the UK's east coast a carbon capture capital?** are about our work in helping to create the world's first Net Zero Industrial Cluster in the North East of England.

Is H₂O the industrial emission of the future?

We're working on a number of projects to help decarbonise UK industry. As part of this, we're bringing hydrogen power to The Humber, the UK's most carbon-intensive industrial cluster. When hydrogen is used as fuel, its only emission is water.

Hydrogen to The Humber

We're leading a project called Zero Carbon Humber (ZCH) to decarbonise the UK's biggest industrial cluster. Hydrogen to Humber (H2H) Saltend, led by Equinor, is ZCH's anchor project. It will establish a world leading hydrogen production plant with carbon capture at px Group's Saltend Chemicals Park.

The H2H Saltend project will be the starting point for a carbon dioxide (CO₂) and hydrogen pipeline network connecting energy-intensive industrial sites throughout the region, offering businesses the options to capture their emissions or fuel-switch to hydrogen.

Our partners in the ZCH project include (amongst others) Drax, SSE Thermal, National Grid and British Steel. Between us, we expect to protect 55,000 existing jobs in the Humber and create 49,000 new ones, while supporting skills, apprenticeships and educational opportunities in the region.

You can find out more about the vision for Zero Carbon Humber here: <https://www.zerocarbon-humber.co.uk/the-vision/>

Projected economic benefit

It's a huge project that we hope will make a massive difference – The Humber contributes £18bn a year to Gross Value Added (GVA) and is home to the UK's largest industrial cluster. It is also the UK's most carbon-intensive region. Transitioning away from high carbon emissions to a more sustainable economy would allow the Humber to make a significant contribution to the UK meeting its climate goals.

If you'd like to know more about the roadmap for Zero Carbon Humber you can read about it here: <https://www.zerocarbonhumber.co.uk/wp-content/uploads/2019/11/Capture-for-Growth-Zero-Carbon-Humber-V4.9-Digital.pdf>

Producing hydrogen at scale

There are two principal ways to produce low carbon hydrogen: use renewable electricity and electrolysis to split the H from H₂O (water) to produce what is known as green hydrogen; or produce it from natural gas and capture the CO₂ by-product. This is known as blue hydrogen. The UK hopes to produce blue hydrogen at industrial clusters around the country. The biggest is in The Humber region. H2H Saltend will be the largest blue hydrogen plant in the world. The CO₂ by-product will be captured and safely stored under the North Sea with Carbon Capture and Storage (CCS) technology.



Is H₂O the
industrial emission
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How low can we make carbon emissions go?

Carbon Capture and Storage or CCS takes the CO₂ emissions from hydrogen production and industrial facilities and stores them underground, and it will be central if the UK is to reduce CO₂ emissions to net zero by 2050, say experts including the International Energy Agency (IEA) and the UK's Committee on Climate Change.

Find out why CCS is crucial on the path to net zero www.equinor.com/en/magazine/uk-energy.html

Equinor and carbon capture and storage

Equinor is a pioneer in Carbon Capture and Storage, having been developing technology to make this possible for more than 20 years, and successfully maturing the process from the R&D stage through to operational reality.

You can find out about our CCS work here: <https://www.equinor.com/en/what-we-do/carbon-capture-and-storage.html>

Carbon capture and storage in the UK

The Humber

The Zero Carbon Humber project will give industries in The Humber the opportunity to capture and store their CO₂ emissions. As we bring hydrogen fuel to industry in The Humber, CCS will also be an important step in producing hydrogen at scale and establishing the hydrogen economy.

ZCH partners will capture carbon emissions from electricity generation, hydrogen production and industrial processes around the estuary, and then transport the emissions via pipelines to permanent storage in naturally occurring aquifers under the southern North Sea.

Read about CCS and hydrogen <https://www.equinor.com/en/magazine/uk-energy.html>

Teesside

We are also involved in other projects to decarbonise industry in the North East of England: Net Zero Teesside (NZT) and the Northern Endurance Partnership (NEP).

Together, ZCH and NZT expect to capture 27 million tonnes of carbon emissions per annum by the mid 2030's, which is equivalent to the annual energy use of over 8 million UK homes. These emissions will be transported through the pipeline network for sub-sea storage as part of the Northern Endurance Partnership (NEP), which is operated by BP.

You can find out more about NZT here: <https://www.netzeroteesside.co.uk>

And read more about the NEP here: <https://www.equinor.com/en/where-we-are/united-kingdom/Northern-Endurance-Partnership-NEP.html>



How low can we make carbon emission go?

How can our turbines go where no wind turbine has gone before?

Winds are stronger and more consistent out further out at sea, but close to 80% of the world's off-shore wind resource potential is beyond the reach of fixed wind turbines, because it is above water that is deeper than 60 metres.

This fact is what led Equinor to install the world's first floating turbine back in 2009, and to create the first commercial floating wind farm, Hywind Scotland, in 2017.

Hywind Scotland, the world's first floating wind farm

Hywind Scotland has proved to be very efficient – in fact, for the third consecutive year, Hywind Scotland has reached the highest average capacity factor for any wind farm in the UK. With an average capacity factor of 57.1% in the twelve month period to March 2020, the floating offshore wind farm set a new record in the UK. The capacity factor is the ratio of actual energy output over a given period of time, compared to the maximum possible output. The higher the capacity factor the better.

Hywind Scotland's five turbines came online in 2017 and with 30 MW capacity they can generate enough electricity to power almost 36,000 Scottish homes.

More about floating wind farms

You can find out more about Hywind Scotland and its performance here: <https://www.equinor.com/en/news/20210323-hywind-scotland-uk-best-performing-offshore-wind-farm.html>

Hywind is also at the forefront of another innovation in wind energy, thanks to its connection with Batwind, the world's first battery for offshore wind. The Batwind energy storage system makes it possible to store energy produced from offshore wind farms in batteries – critical in securing grid stability as wind levels are not consistent. Batwind stores electricity when it is plentiful and demand is lower, and sends power to the grid when winds fall and demand rises.

You can find out more about Batwind here: <https://www.equinor.com/en/news/26june2018-equinor-has-installed-batwind.html>

Hywind Scotland and Batwind are both jointly owned by Equinor and Masdar.



How can our turbines go where no wind turbine has gone before?

Should offshore wind be measured in knots or watts?

Offshore wind is at the heart of the UK's energy transition, and Equinor is playing a pivotal role with 6m UK homes to be powered by Equinor wind farms.

Dogger Bank, the world's largest offshore wind farm

5m million homes will be powered by Dogger Bank. This is based on 18TWh annual electricity production from Dogger Bank and average UK household energy consumption of 3,772kWh. The number of homes powered by our operational wind farms has been calculated using the average electricity production from each wind farm and average UK household energy production: 410,000 UK homes are powered by Dudgeon, 220,000 British homes are powered by Sheringham Shoal, and 36,000 homes are powered by Hywind.

Dogger Bank is an isolated sandbank within the central to southern North Sea, between 125 and 290km off the east coast of Yorkshire. Before the last Ice Age it was a land mass connecting the UK to mainland Europe. Today it extends over approximately 8660km² with water depths ranging between 18 and 63m.

Dogger Bank wind farm will be the world's largest offshore wind farm – the total area covered by the wind farm (1674km²) is bigger than Greater London (1568km²). It is being developed in 3 phases.

- Dogger Bank A is around 131km from shore, with a development area of around 515km² and will have an installed generation capacity of up to 1.2GW when complete.
- Dogger Bank B is the largest of the projects with a development area of around 599km² and is also around 131km from shore with an installed generation capacity of up to 1.2GW when complete.
- Dogger Bank C, also with an installed generation capacity of up to 1.2GW, has a development area of around 560km², and is 196km from shore.

Dogger Bank A and B is a joint venture between Equinor (40%), SSE Renewables (40%), and Eni (20%). Dogger Bank C is a 50:50 joint venture between Equinor and SSE Renewables.

More on Dogger Bank

The whole Dogger Bank project represents a £9 billion investment in the UK between 2020 and 2026 and will provide enough power for 5 million UK homes, roughly equivalent to around 5% of the UK's electricity demand.

The Dogger Bank wind farm is also revolutionising the industry as a whole. The project will use 13MW and 14MW versions of GE's Haliade-X turbine. These are the world's most powerful, with blades 107 metres long – twice the wingspan of the Angel of the North. Each turn of just one offshore turbine can power a UK household for two days. Over a year, each of these turbines can provide enough energy to power 16,000 British households and save the equivalent of 9,000 vehicles' emissions.

Due to its distance from shore, Dogger Bank will also be the first in the UK to use High Voltage Direct Current (HVDC) technology to transport the power generated at Dogger Bank back to the National Grid. You can find out more about the Dogger Bank offshore wind farm at <https://doggerbank.com>

Expanding offshore wind power off Norfolk

We are looking to double the capacity of our Sheringham Shoal and Dudgeon wind farms, just off the coast of Norfolk, by extending their areas and using newer, more efficient turbines. The proposed extension projects should double their combined output and provide power for around 1.5 million UK households.

You can read about the two extension projects at: <https://www.equinor.com/en/where-we-are/unit-ed-kingdom/sheringham-dudgeon-extension.html>

Dudgeon Offshore Wind Farm and the Dudgeon Extension is owned by Equinor, Masdar and China

Resources. Sheringham Shoal Offshore Wind Farm is owned by Equinor, Equitix and Green Investment Group. The Sheringham Shoal Extension is owned wholly by Equinor, with the partners retaining the right to re-enter the project during the construction phase.

The impact offshore wind has on dry land

Our Operations and Maintenance Base for Dogger Bank will be situated at the Port of Tyne. By 2026, this will generate 200 skilled offshore and onshore jobs, boosting the local economy and attracting suppliers and other businesses to the area for decades to come. Recruitment is expected to begin in 2022.

You can read more about our Operations and Maintenance Base here: <https://www.equinor.com/en/news/20210325-dogger-bank-design-operations-maintenance-base.html>



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