Norwich to Tilbury

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Thurrock 3 – proposed changes to connection at Tilbury

algric

National Grid delivers electricity safely, reliably and efficiently

to the customers and communities we serve – all while working towards building a cleaner, fairer and more affordable energy system for the future.

Since the close of our statutory consultation proposed changes to the connection in 2024, we have reviewed and considered all consultation feedback and continued to carry out further assessments and survey work to inform our proposals.

As a result, we are now considering making some changes to our proposals at a number of locations across the route, including some at Tilbury – known as Thurrock 3.

This is a targeted statutory consultation and we're looking for your views on proposed changes to the connection at Tilbury and associated changes to existing overhead lines in the area.



National Grid Electricity Transmission



Owns and manages the high voltage electricity transmission system in England and Wales.

National Grid Strategic Infrastructure



Delivers major strategic UK electricity transmission projects, focused on connecting more clean, low-carbon power to England and Wales.

National Grid Electricity Distribution



Owns and operates the electricity distribution networks for the Midlands, the South West of England and South Wales.

National Grid Ventures



Operates and invests in large scale energy projects, technologies and partnerships to help accelerate the transition to clean energy. Ventures runs separately from National Grid's core regulated operations.



Proposals presented at the 2024 statutory consultation

Area of proposed change March 2025





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New Tilbury North Substation

We are proposing to build a new 400 kV Gas Insulated

Switchgear (GIS) substation five kilometres (km) to the north of the existing Tilbury Substation, close to Orsett and between the villages of Linford and Chadwell St Mary.

The substation would be located where we had previously proposed to build a cable sealing end compound.

The proposed substation would be located in a secure compound with an operational footprint of approximately 340 metres (m) x 300 m. The height would be approximately 15 m excluding any requirement for landscaping and overhead line or cable connections.

This change would mean we no longer need to install approximately 4.5 km of underground cables into the existing substation at Tilbury.

Our proposals include:

- new GIS hall building
- annex building
- exterior and interior lighting
- internal access and circulation
- associated plant and apparatus
- drainage
- security fencing
- two access options into the site.



3D visualisation of the proposed Tilbury North Substation.



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Modifications to the existing overhead lines

We would need to alter the existing overhead power lines to

connect into the new substation. The two lines we would need to modify are known as YYJ and ZB, and both lines are operated by National Grid Electricity Transmission.

We would need to change the YYJ line so that While we are doing the work, we would need it connects into and out of the new substation. to divert the overhead lines onto temporary

We would need to put some of the ZB line underground to avoid crossing the YYJ line where it would enter the new substation. While we are doing the work, we would need to divert the overhead lines onto temporary pylons. These temporary diversions would be required for a minimum of two years. If temporary pylons are required, they will be approximately 50 m in height.



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The Great Grid Upgrade

Norwich to Houry

Construction and access

Building Norwich to Tilbury would involve a range of construction

activities, including preparing land and creating temporary haul roads to access work areas, as well as providing temporary areas to store materials, vehicles and staff welfare facilities.

We are proposing two access options into the proposed new Tilbury North Substation for both construction and operational traffic:

- via Buckingham Hill Road, Hoford Road and then either a temporary haul road (during construction) or a permanent private access road (during operation) across the Clearserve site
- via Brentwood Road then either a temporary haul road (during construction) or a permanent private access road (during operation).

We have developed these options to be able to access the proposed substation whether or not Lower Thames Crossing goes ahead.



Norwich to Tilbury

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Moving to net zero

The UK has set a world-leading target for tackling climate change: to achieve net zero carbon emissions by 2050.

Great Britain already has 8.5 gigawatts (GW) of offshore wind energy in operation, and another 1.9 GW under construction. The Government's Energy White Paper (December 2020) outlined a plan to increase energy from offshore wind to 40 GW by 2030, which was revised in April 2022 to 50 GW.

Just as the way we generate electricity is changing, demand is also set to significantly increase as the way we power our homes, businesses, industry and transport evolves. As the nation moves towards net zero, the fossil fuels that once powered our economy will continue to be replaced with sources of low-carbon electricity.

As a country, we are already making progress. But more needs to be done. A healthier, greener future for Britain requires significant upgrades to our energy infrastructure to deliver clean energy from where it is produced to where it is needed. Norwich to Tilbury will help the transition to clean energy by making sure that the high voltage electricity transmission system in England and Wales is ready. Our proposals are part of The Great Grid Upgrade – the largest overhaul of the grid in generations.



Nuclear new nuclear power

Interconnectors

transporting and sharing

Jobs new jobs to build the net zero energy workforce







low carbon energy between the UK and the continent

Norwich to Tilbury

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The Great Grid Upgrade

The way we're powering the things we love is changing.

In the years ahead, more of our energy will come from renewables as part of the transition to a cleaner, greener future.

This means we need to build new infrastructure, as well as upgrade the existing electricity grid, to bring this clean, green energy from where it's generated to where it's needed by homes and businesses.



More clean energy for all

The Great Grid Upgrade will enable the electricity grid to carry more clean energy to communities in every part of England and Wales, helping us all reach net zero faster.



Investment close to home

As well as helping to reach net zero, the UK Government suggests that investment in onshore network infrastructure could support up to 130,000 jobs and contribute an estimated £4–11 billion of GVA (gross value added) to the United Kingdom economy in 2050.



A grid that's fit for the future

As we continue to reduce our reliance on fossil fuels and increase clean energy generation, we'll be using more electricity than ever. That means we'll need a grid that's able to carry all of this extra electricity to wherever we might need it.



Energy security

The Great Grid Upgrade will connect clean energy that's produced right here in the UK, increasing the selfsufficiency of our energy supplies.

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Why we need to build Norwich to Tilbury

By the end of the decade, there could be as much as 18 GW of new, cleaner electricity – enough to power around 18 million homes in East Anglia and the UK – connected into the network.

Ensuring this energy reaches the homes and businesses that need it means we need to significantly improve our onshore electricity infrastructure, much of which was built to accommodate less demand.

Norwich to Tilbury is a proposal for the development of new high voltage electricity infrastructure in East Anglia, including new overhead lines and underground cables, substation improvements and a new substation. What we're proposing is part of the Great Grid Upgrade – the largest overhaul of the grid in generations – and is vital in helping us meet net zero goals.

By building Norwich to Tilbury, we would be able to connect new sources of low carbon





energy to homes and businesses across the UK and help reduce our reliance on fossil fuels. In doing so, it would play a key role in addressing the climate emergency and help achieve the UK's targets for net zero.