The Great Grid Upgrade

Norwich to Tilbury

nationalgrid

About National Grid

National Grid is working to build a cleaner, fairer and more affordable energy system that serves everyone, powering the future of our homes, transport and industry.

We sit at the heart of Britain's energy system, connecting millions of people and businesses to the energy they use every day.

We bring energy to life – in the heat, light and power we bring to our customer's homes and businesses; in the way that we support our communities and help them to grow; and in the way we show up in the world.

It is our vision to be at the heart of a clean, fair and affordable energy future.

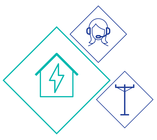
Within the National Grid Group there are four separate legal entities, each with their individual responsibilities and roles. It is National Grid Electricity Transmission that is developing plans for Norwich to Tilbury.

nationalgrid
Group PLC

National Grid Electricity Transmission

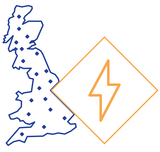
Owns and manages the high voltage electricity transmission system in England and Wales.

National Grid Electricity Distribution



Owns and operates the electricity distribution networks for the Midlands, the South West of England and South Wales, with 8m customer connections serving a population of over 18m people.

ESO Electricity System Operator



The ESO is legally separate from the rest of National Grid and ensures that Great Britain has the essential energy it needs by making sure supply meets demand every second of every day.

National Grid Ventures

Operates a mix of energy assets and businesses to help accelerate the development of our clean energy future (such as undersea interconnectors that allow the UK to share energy with other European countries).

nationalgrid

The Great Grid Upgrade

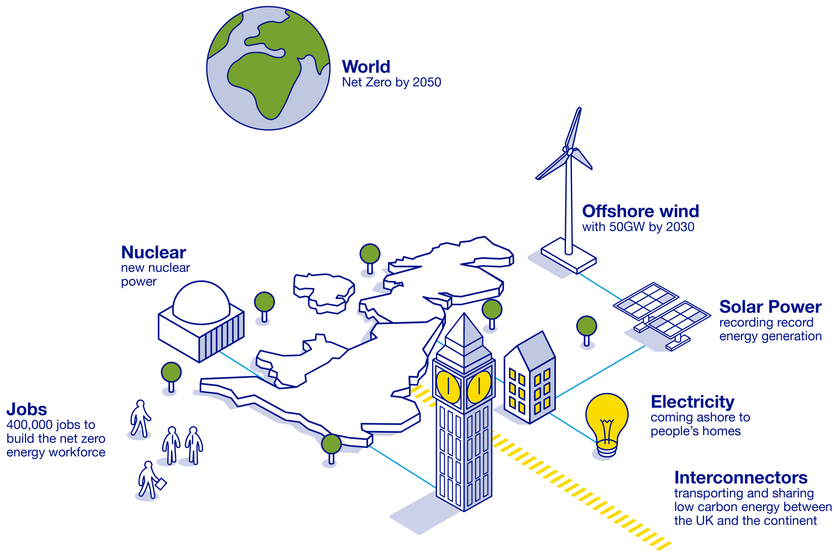
The UK has set a world leading target to tackle climate change, which is to achieve net zero greenhouse gas emissions by 2050.

Put simply, this means that we will remove the same amount of greenhouse gas from the atmosphere as we produce.

The Great Grid Upgrade is the largest overhaul of the electricity grid in generations. Our infrastructure projects across England and Wales are helping to connect more renewable energy to your homes and businesses.

The Great Grid Upgrade will play a big part in the UK Government's plan to boost homegrown power. It will help the UK switch to clean energy and make sure our electricity network is fit for the future; carrying more clean, secure energy from where it's generated to where you need it.

Find out more about the Great Grid Upgrade here:



nationalgrid

The Great Grid Upgrade in East Anglia

The way we generate electricity in the UK is changing rapidly, and we are transitioning to cheaper, cleaner and more secure forms of energy like new offshore windfarms.

We need to make changes to the network of overhead lines, pylons, cables and other infrastructure that transports electricity around the country, so that everyone has access to the clean electricity from these new renewable sources.

Along with Norwich to Tilbury, National Grid is developing a number of other projects in the region:

Sea Link

Sea Link is a proposed offshore link between Suffolk and Kent. We will consult on the latest proposals later this year.

Bramford to Twinstead

We are proposing to build a network reinforcement between Bramford Substation in Suffolk and Twinstead Tee in Essex. It is needed to resolve a bottleneck on the network. Building this new reinforcement will allow us to carry more power out to the west.

Our application for a Development Consent Order was accepted for examination by The Planning Inspectorate in May (2023).

Refurbishing the existing overhead line

We are carrying out essential work to refurbish the existing 400,000 volt (400 kV) overhead line that runs between our substations at Bramford and Norwich. This includes replacing all the fittings and wires between the existing pylons. This work will enable us to carry more power down the lines to homes and businesses where it is needed.

We started work in 2022 and expect to finish by the end of this year.

Extending Norwich Main Substation

We need to extend our existing substation to connect two new wind farms (Equinor's Sheringham Shoal and Dudgeon extensions and Orsted's Hornsea 3). We will publish more information when we have developed our plans in more detail.

The Great Grid Upgrade - Norwich to Tilbury

We've changed the project name to Norwich to Tilbury because it is part of The Great Grid Upgrade.

All National Grid projects that are part of The Great Grid Upgrade will include locations in their names to make it easier for people to understand where we are proposing to build new grid infrastructure.

This new high voltage connection would run for approximately 183 km between existing substations at Norwich Main in Norfolk, Bramford in Suffolk, and Tilbury in Essex.

It would be made up mostly of overhead lines and pylons, along with some underground cables.

We also need to connect new offshore wind generation and are proposing to build to a new substation near Lawford on the Tendring Peninsula.

Since our 2022 consultation we have:

- carefully considered the consultation feedback and undertaken further assessments and technical work
- developed a preferred draft alignment which shows potential positions for pylons, overhead lines, underground cables and cable sealing end compounds
- developed our proposed preferred site for the new substation at Lawford.

Pylon design

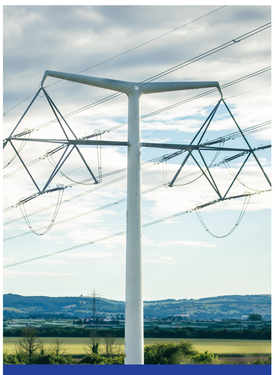
Different designs in use in the UK include:

- standard lattice
- tower height lattice
- T-pylons.

For the purposes of this initial assessment, the preferred draft alignment presented in this consultation reflects the use of standard lattice pylons.

The use of other pylon designs is still under consideration and we will carry out further assessments as we develop our proposals further.

Standard lattice pylon



T-pylon

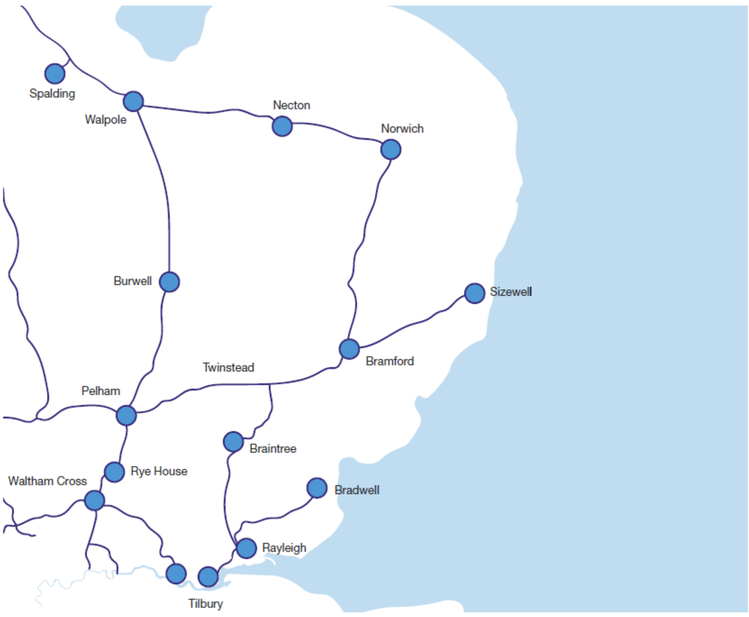
Lower height lattice pylon

nationalgrid

Why we need to build Norwich to Tilbury (1)

The high voltage electricity transmission network in East Anglia was developed in the 1960s to supply regional demand. Until now it has been able to meet this. But by the end of the decade the amount of renewable and low carbon energy connecting to the network is set to dramatically increase.

Figure 1 The existing high voltage transmission network in East Anglia



The Great Grid Upgrade

Norwich to Tilbury

nationalgrid

Why we need to build Norwich to Tilbury (2)

The existing high voltage electricity network in East Anglia does not have sufficient capacity to accommodate new generation.

At present, the existing network in this area carries around 4,500 MW of electricity generation. Over the next decade we expect over 15,000 MW of new generation and 4,500 MW of new interconnection to connect in the region.

This includes:

- new offshore wind farms connecting into Necton and Norwich
- Five Estuaries and North Falls offshore wind farms: both currently in development off the east coast and expected to be in operation by 2030
- Tarchon Energy interconnector: 1,400 MW interconnector between UK and Germany, proposed to connect at the Tendring Peninsula.

The Great Grid Upgrade
Norwich to Tilbury

nationalgrid

Government's review of offshore coordination

OTNR

The Government's Offshore Transmission Network Review (OTNR) is currently looking at how the offshore electricity transmission network can be delivered in a more coordinated way to deliver net zero emissions by 2050.

Norwich to Tilbury has been identified as 'essential' to deliver on the ambition of 50 GW of offshore wind by 2030.

HND

In summer 2022, National Grid ESO published the Holistic Network Design (HND) report, focusing on four key objectives:

- cost to consumer
- deliverability and operability
- impact on the environment
- impact on local communities.

The HND provided a recommended offshore and onshore design for a 2030 electricity network to help facilitate the Government's ambition for 50 GW of offshore wind by 2030.

OCSS

In December 2022, the Government announced the Offshore Coordination Support Scheme (OCSS). The OCSS will provide grant funding to projects to explore potential coordination options for offshore transmission infrastructure.

Applications closed in February 2023 and are currently being assessed by Government.

ASTI

Ofgem has introduced the Accelerated Strategic Transmission Investment (ASTI) framework to facility accelerated delivery of key strategic onshore transmission projects needed to deliver the Government's 2030 ambition. Under the framework, the Norwich to Tilbury project has been targeted with an optimal delivery date of 2030.

ESO Study

The Electricity Systems Operator (ESO) will carry out a 'Study' to assess objectively the options for Norwich to Tilbury and other proposed network reinforcements across East Anglia.

When the Study concludes, we will review our proposals in light of any recommendations.

There will be further consultation on proposals for Norwich to Tilbury, when we hope to show finalised proposals informed by both local feedback and the outcomes of the ESO Study.

The Great Grid Upgrade

Norwich to Tilbury

nationalgrid

How our proposals have evolved

Feedback received from our 2022 public consultation has helped shape the development of our proposals.

After careful consideration of the feedback and taking into account further assessments, we have made changes to our proposals, both inside and outside of the 2022 preferred draft corridor.

More information on the changes and how we have progressed the project design since the 2022 public consultation is available in the Design Development Report 2023.

Changes outside the 2022 preferred draft corridor:

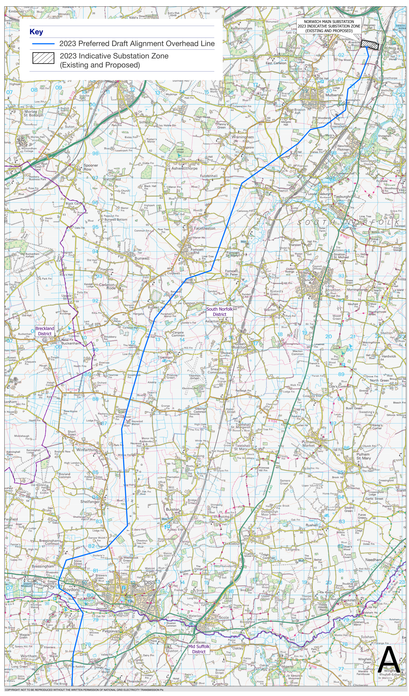
- diverting to the East of Wortham Ling before re-joining the preferred corridor to the south-west of Diss
- diverting to the east, south of Offton, then paralleling the existing 132 kV overhead line route to the north and east of Flowton to Bramford substation, referred to as North of Flowton
- an alternative route to the north and east of Notley Enterprise Park and at the northern edge of the Dedham Vale AONB, referred to as West of Great Wenham
- straightening the draft alignment slightly West of Writtle
- an alternative route further east of Ingatestone.

Areas where the preferred draft alignment would be routed within the preferred draft corridor presented in 2022:

- broadly paralleling the existing 132 kV overhead line to the north-west of Barking and Barking Tye
- avoiding potential oversailing of properties and gardens at Aldham
- an alignment further east within the corridor south of Bramford near Burstall
- increasing the extent of underground cables from south of the Dedham Vale AONB through to the EACN. This also allows for an adjustment of the overhead line alignment near Ardleigh
- change of technology from overhead line to underground cable near Great Horkesley for a distance of approximately 5.3 km
- change of technology from overhead line to underground cable to cross under the existing 400 kV overhead line north of Fairstead
- passing to the east of Bushy Wood to increase distance from properties
- reduced interaction with the Dunton Hills Garden Village development by restricting the alignment to the eastern edge of the proposed corridor
- change of technology from overhead line to underground cable from the north of the Lower Thames Crossing proposals into Tilbury Substation.

nationalgrid

Our proposals in South Norfolk



Our plans in this section

The proposed reinforcement would start at Norwich Main substation in Norfolk. A new overhead line would run south from Norwich Main, running to the east of Mulbarton, Tacolneston and Shelfanger before routeing to the west of Roydon on the border with Mid Suffolk.

Changes since our 2022 consultation

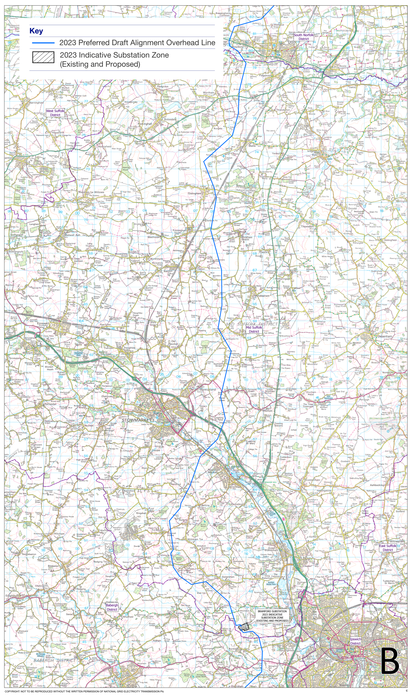
Changes outside the 2022 preferred draft corridor

Changes East of Wortham Ling

West of Roydon and immediately south of the A1066, the alignment would diverge from the preferred draft corridor presented in 2022. The alignment would now turn to the east of Wortham Ling, before continuing into Section B.

Two new wind farms, Equinor's Sheringham Shoal and Dudgeon Extensions, and Orsted's Hornsea 3, are contracted to connect into Norwich Main over the next few years. To enable this we would need to extend the substation.

Our proposals in Mid Suffolk



Our plans in this section

From the county boundary between South Norfolk and Mid Suffolk, the overhead line would run south, passing to the west of Mellis and to the east of Gislingham before crossing the railway.

The draft alignment would then continue south past Stowupland and Needham Market, where it crosses back over the railway, before it turns eastwards at Offton, runs north of Flowton and connects into Bramford substation.

From the substation, the overhead line would run south-east for a short distance to the border with Babergh.

Changes since our 2022 consultation

Changes outside the 2022 preferred draft corridor

East of Wortham Ling

The alignment would change to continue from the border between South Norfolk and Mid Suffolk and would run south, rejoining the 2022 preferred draft corridor east of Wortham.

North of Flowton

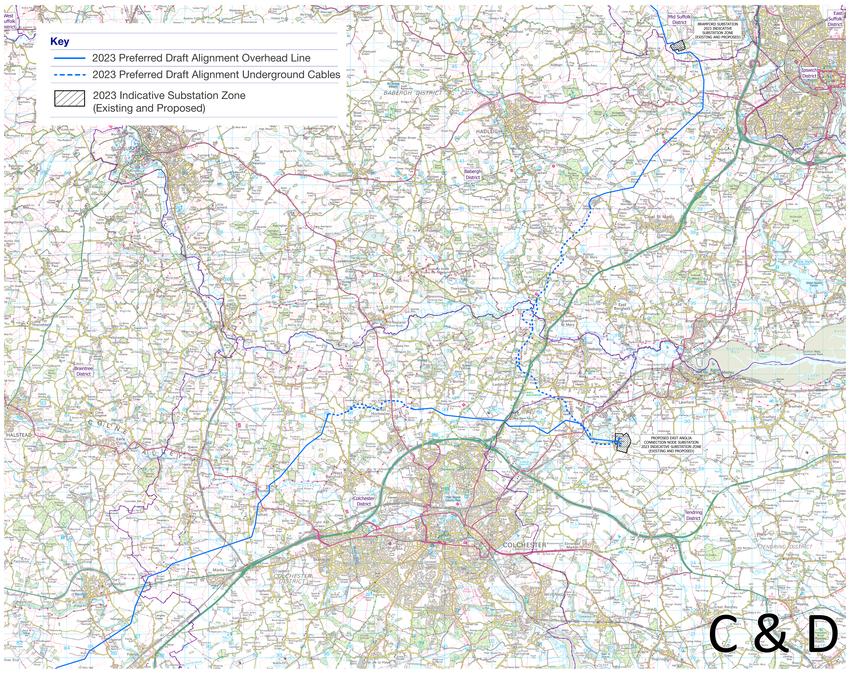
South of Offton, the alignment would run further east of the 2022 preferred draft corridor, south of Somersham and north of Flowton. This would broadly follow the route of the existing 132 kV overhead line that connects into Bramford substation.

Changes within the 2022 preferred draft corridor

North-west of Barking and Barking Tye the preferred draft alignment would be routed within the preferred draft corridor presented in 2022 but in an area thought less likely as shown by the graduated swathe.

nationalgrid

Our proposals in Babergh, Tendring and Colchester (1)



Our plans for this section

The proposed draft overhead line alignment would cross immediately into Babergh from Bramford substation.

Running south-easterly, the route would pass to the west of Washbrook and Copdock and Little Wenham on the north side of Notley Enterprise Park.

We are proposing to build a cable sealing end compound (CSE) where the overhead lines would be joined to underground cables. From here underground cables would run to the east of Raydon and west of Holton St Mary. The underground cables would cross the border into the Colchester district briefly, running past the east of Langham and crossing the A12.

The underground cables would then cross eastwards into the Tendring Peninsula, passing the north of Ardleigh and crossing the railway to the site of the East Anglia Connection Node (EACN) substation.

From the EACN, we are proposing to build an overhead line heading west towards Great Horkesley, transitioning again to underground cable at a CSE compound. The underground cable alignment is expected to require a split corridor arrangement to the south of Knowles' Farm before reaching another CSE compound to the west of Crabtree Lane, where the underground cable would transition to overhead line.

From here, the overhead line would continue south-west, passing to the west of West Bergholt before crossing the A12, running north of Marks Tey into Braintree.

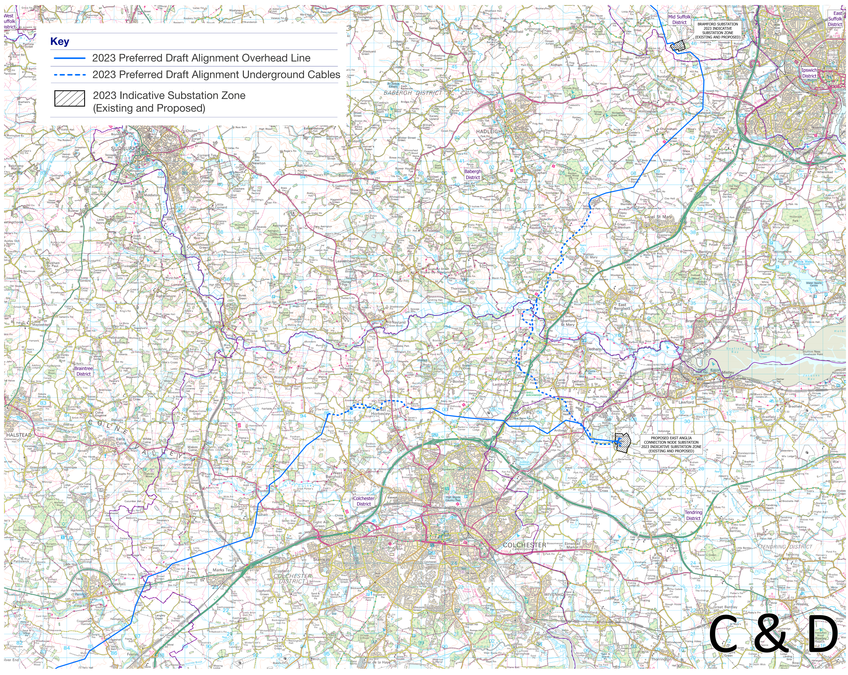
We are proposing to use underground cables as we cross the designated Dedham Vale AONB.

The Great Grid Upgrade

Norwich to Tilbury

nationalgrid

Our proposals in Babergh, Tendring and Colchester (2)



Changes since our 2022 consultation

Changes outside the 2022 preferred draft corridor

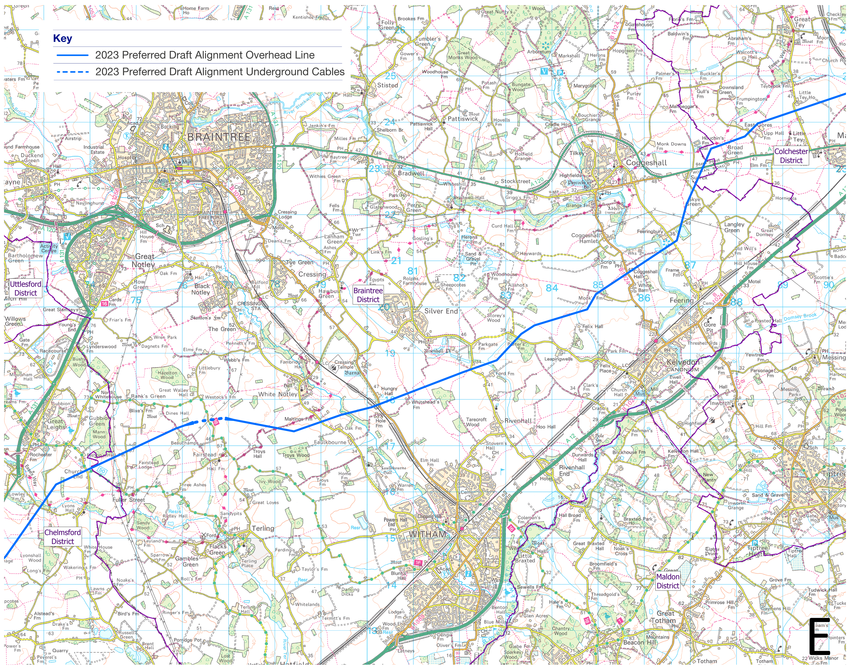
West of Great Wenham

Instead of passing directly south between Great Wenham and Capel St Mary, the alignment would separate from the 2022 preferred corridor north of Little Wenham, running to the west of Great Wenham.

Changes within the 2022 preferred draft corridor

There are four further changes where the preferred draft alignment would be routed within the preferred draft corridor presented in 2022 but in an area thought less likely as shown by the graduated swathe. These are located at Aldham, south of Bramford, south of the AONB and at Great Horksley.

Our proposals in Braintree



Our plans in this section

The overhead line would continue south-west into Braintree.

The alignment would pass to the north of Witham and the south of Silver End, before crossing the railway again heading south west into Chelmsford district.

Changes since our 2022 consultation

Changes within the 2022 preferred draft corridor

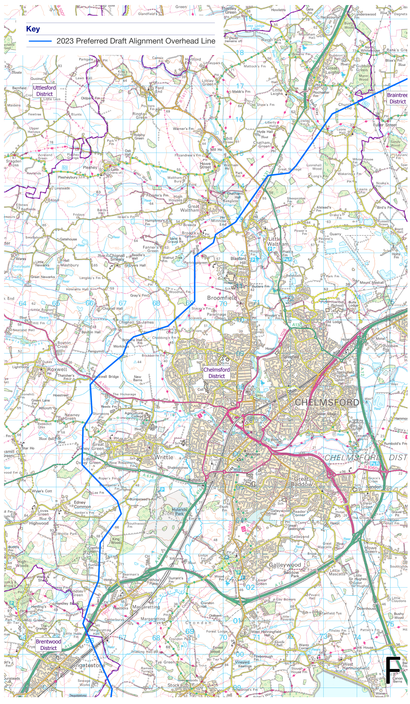
We are proposing to underground a small section of the route north of Fairstead, with CSE compounds at either end, to cross beneath the existing 400 kV overhead line. The location of this crossing has moved to an area within the 2022 corridor previously considered less likely to be used.

This change is in response to consultation feedback and to reduce effects on residential amenity.

The Great Grid Upgrade
Norwich to Tilbury

nationalgrid

Our proposals in Chelmsford



Our plans in this section

The overhead line would enter the district from the north-east and would run to the north of Chelmsford. From there it would head south on the western side of the town, and to the west of Writtle.

The alignment would then continue south, passing to the west of Margaretting, and crossing over the A12 to the north of Ingatestone on the Brentwood border. It briefly re-enters Chelmsford district to the south associated with the change East of Ingatestone described in Section G.

Changes since our 2022 consultation

Changes outside the 2022 preferred draft corridor

West of Writtle

The preferred draft alignment has been straightened slightly west of Writtle and would deviate outside the 2022 preferred draft corridor by up to approximately 110 m for a distance of approximately 400 m.

Changes within the 2022 preferred draft corridor

At Bushy Wood, the alignment would now pass to the east to increase the distance from properties on Woodhall Hill Road. This would be routed within the preferred draft corridor presented in 2022 but in an area thought less likely as shown by the graduated swathe.

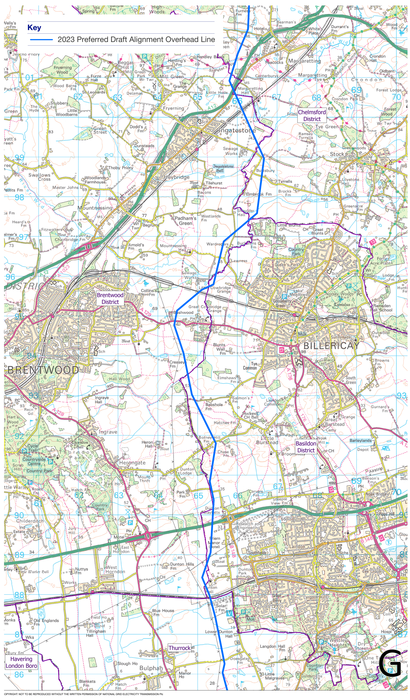
The Great Grid Upgrade

Norwich to Tilbury

nationalgrid

Our proposals in Basildon and Brentwood

(and Chelmsford east of Ingatestone)



Our plans in this section

Passing to the north and east of Ingatestone, the overhead line alignment would cross the A12 and the railway in the north of the Brentwood district. It would then travel directly south, crossing multiple times between Chelmsford, Basildon and Brentwood.

Passing to the east of Brentwood and the west of Billericay, the alignment would continue south, crossing the A127 and railway on the border of the Thurrock district.

Changes since our 2022 consultation

Changes outside the 2022 preferred draft corridor

Further East of Ingatestone

The overhead line alignment would now pass further east of Ingatestone, diverting from the crossing of the A12 to the east of Stock Lane, continuing south passing to the east of the waste water treatment works, re-joining the preferred corridor north of the crossing of Rayleigh Road.

Changes within the 2022 preferred draft corridor

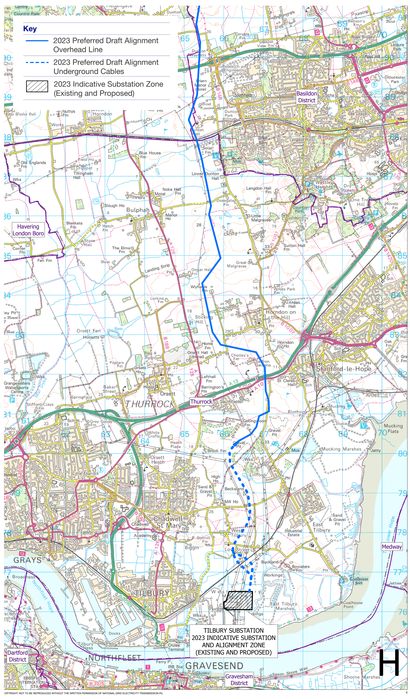
Between West Horndon and Basildon, the alignment would now run along the eastern edge of the 2022 preferred draft corridor. This would reduce interaction with the Dunton Hills Garden Village proposals.

The Great Grid Upgrade

Norwich to Tilbury

nationalgrid

Our proposals in Thurrock



Our plans in this section

The overhead line alignment would continue south, passing Bulphan to the west and Horndon on the Hill to the east. The alignment would then head east, then south, crossing the A13 to the north-east of Southfields, before heading south, to the west of Linford.

From here, the overhead line alignment would transition to underground cables at a CSE compound, proposed to be sited to the north of the Lower Thames Crossing proposals.The underground cable alignment would then run south into Tilbury Substation.

Work would be required at Tilbury Substation to connect the new reinforcement.

Changes since our 2022 consultation

Changes within the 2022 preferred draft corridor

We are not progressing the corridor passing to the east of East Tilbury.

We are proposing to install underground cables from the north of the Lower Thames Crossing proposals into Tilbury Substation within the western corridor indicated in the 2022 consultation.

The Great Grid Upgrade

Norwich to Tilbury

nationalgrid

Have your say

We want to hear the views of local people. Knowing what matters to you, matters to us, so please get in touch and provide your feedback.

We will carefully consider all feedback and we will respond to it as part of our application for development consent.

How do I find out more about your proposals?

You can find out more about our plans in a number of ways:

- **Online:** view all information and the interactive map on our project website **nationalgrid.com/norwich-to-tilbury**
- **Events:** please attend one of our public events along the route
- **Webinars:** attend one of our online webinars
- **Visit:** visit an information point to view to collect a feedback form.

How do I respond to the consultation?

Please provide your feedback by **21 August 2023**. You can do this by:

- completing our online feedback form at **nationalgrid.com/norwich-to-tilbury**
- sending a completed paper copy of the feedback form or a letter to **Freepost N to T** (no stamp or further address needed)
- emailing your comments to **contact@n-t.nationalgrid.com**
- calling us on **0800 151 0992.**

The Great Grid Upgrade

Norwich to Tilbury

nationalgrid

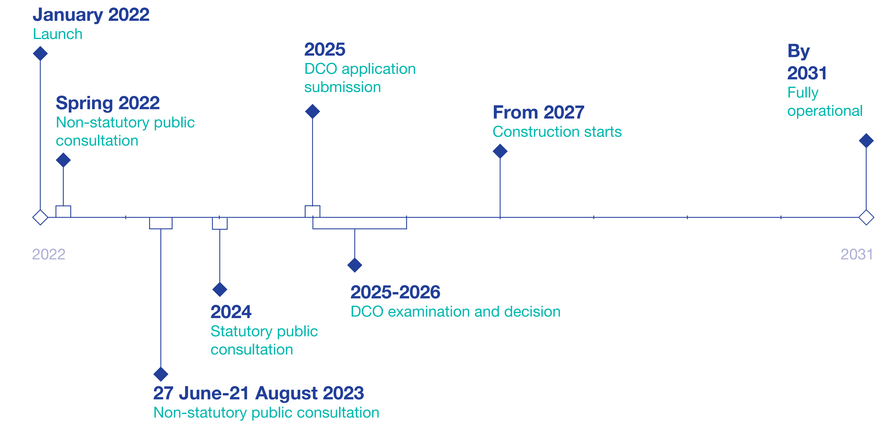
Next steps

Your feedback will help us as we develop our proposals for Norwich to Tilbury. Following this consultation we will review all responses as we continue to develop our plans.

We expect to hold a further consultation in 2024 which will be a 'statutory' consultation.

We expect Norwich to Tilbury will be classified as a Nationally Significant Infrastructure Project (NSIP). Under the Planning Act 2008 we would need to apply for a Development Consent Order (DCO).

Our DCO application will include a Consultation Report to show how we have had regard to your comments. DCO applications are submitted to The Planning Inspectorate (PINS) and examined independently before a recommendation is made to the Secretary of State for Energy Security and Net Zero (DESNZ) who makes the final decision.



Contact us

If you have any questions on Norwich to Tilbury call our Community Helpline:

0800 151 0992 (Lines are open Monday to Friday 9:00am – 5:30pm)

Email us:
contact@n-t.nationalgrid.com

Write to us:
Freepost N to T
(No stamp or further address details are required)

If you feel your land may be affected by these proposals, please contact the Norwich to Tilbury Lands Team at Fisher German by:

Phone: 0808 1753 314

Email: Norwich-Tilbury@fishergerman.co.uk

Post: Norwich to Tilbury Lands Team at - Unit H2 Risby Business Park, Newmarket Road, Risby, Bury St Edmunds, IP28 6RD

nationalgrid.com

The Great Grid Upgrade

Norwich to Tilbury

nationalgrid

Grid in the community

Opportunities for young people

Looking for an exciting way into an industry that is secure, innovative, practical and purposeful?

Find out more about careers, apprenticeships and student placements with National Grid:

Grid for Good

Grid for Good is our flagship programme that helps increase access to training and employment opportunities for young people.

We support students with career coaching and masterclasses.

We've reached over 300 students from four schools across Norfolk, Suffolk and Essex already this year, with more activities to come.

Find out more about the Grid for Good scheme:

Events for young people

As part of our 2023 non-statutory consultation, we want to engage with young people to hear your thoughts on our project and provide an opportunity to influence our proposals.

During the consultation period we are holding focused events for young people and students. **Go to our website for details.**

Net Zero Norwich – Our Beryl Bike Partnership

We have partnered with Beryl, the UK's leading micromobility provider, to support the bike, e-bike and e-scooter sharing scheme in Norwich.

The collaboration will help to reduce traffic congestion and carbon emissions, improving mental and physical health and air quality in the city and beyond.