Welcome to the public consultation on the Bramford to Twinstead reinforcement

nationalgrid

National Grid Electricity Transmission is consulting on proposals to reinforce the electricity transmission network between Bramford in Suffolk and Twinstead Tee in Essex.

In Spring 2021, we held a non-statutory consultation to reintroduce the Bramford to Twinstead reinforcement. We asked for your thoughts on our plans, and since then we have been working to refine our proposals. This statutory consultation is your opportunity to comment on our proposals before we submit our application for Development Consent in winter 2022/23.

The Bramford to Twinstead reinforcement includes:

A new 29 km 400 kV electricity network reinforcement including:

- Around 19 km of overhead lines
- Around 10 km of underground cables in the Dedham Vale AONB and parts of the Stour Valley
- Four cable sealing end compounds to facilitate the transition between overhead line and underground cable sections
- A new grid supply point substation at Butler's Wood, to connect the local distribution network into the National Grid
- Removal of around 2.5 km of existing 400 kV pylons south of Twinstead Tee
- Removal of around 25 km of existing 132 kV pylons between Burstall Bridge and Twinstead Tee

About National Grid

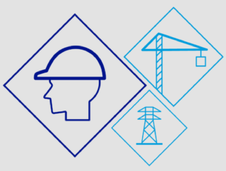
National Grid is working to build a cleaner, fairer and more affordable energy system that serves everyone, powering the future of our homes, transport and industry.

National Grid sits 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 three distinctly separate legal entities, each with their individual responsibilities and roles. The Bramford to Twinstead reinforcement is being developed by National Grid Electricity Transmission (NGET).

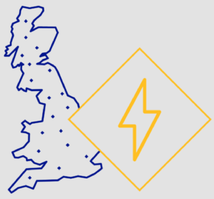
nationalgrid Group PLC

National Grid Electricity Transmission



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

National Grid ESO



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 (eg, undersea electricity, interconnectors, with other countries and European transmission partners)

Moving to Net Zero

nationalgrid

The world we live in is changing, and the UK is at a turning point as we embrace the enormous opportunities a cleaner, greener future brings. The Government has made it clear that a key part of recovery from the coronavirus pandemic is building back cleaner and greener.

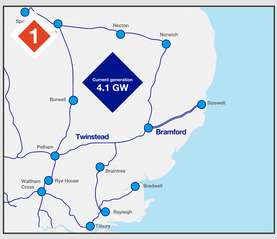
The UK has set a world-leading target to tackle climate change, which is to achieve net zero greenhouse gas emissions by 2050. Put simply, this means that we will remove the same amount of greenhouse gas from the atmosphere as we produce.

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, including the Bramford to Twinstead reinforcement

Why we need to build the Bramford to Twinstead reinforcement

nationalgrid

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



1. There are currently three electricity transmission lines carrying power from the north and east into Bramford Substation. However, there is currently only one electricity transmission line transporting this south west from Bramford to Twinstead Tee and to the wider network. This is a bottleneck on the system which significantly constrains the amount of electricity that can be carried westward on the network from Bramford.
2. The current level of electricity generated in East Anglia is around 4.1 GW. Sizewell B provides nearly a third of the overall generation total, whilst a substantial contribution also comes from offshore wind farms.
3. By 2030 it is expected that almost 24.5 GW of generation sources will be connected to the transmission network in East Anglia. This is largely driven by planned new nuclear, offshore wind and interconnection, with an expectation that this area will continue to see growth to support the UK's Net Zero transition.

The existing network needs reinforcing to allow new cleaner, greener sources of electricity generation to reach our homes and businesses. Today, this part of the network can export around 3.5 GW of electricity, but with new contracted generation it needs to be able to carry up to around 15 GW of electricity out of the area.

We have started making improvements to the existing network by:

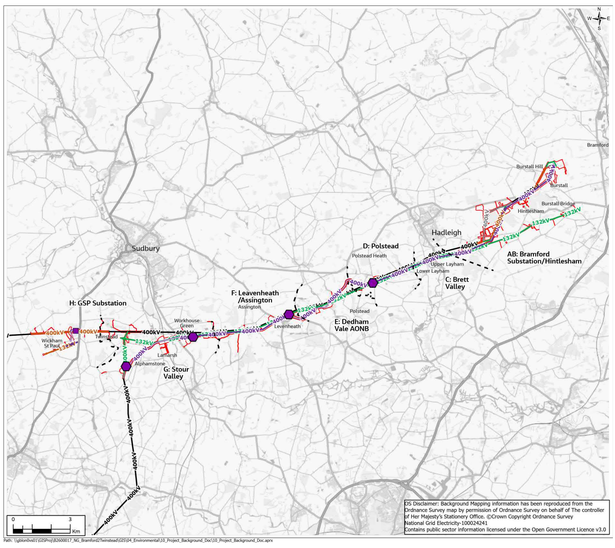
- installing power control devices at Burwell, Pelham, Rye House and Waltham Cross
- increasing the voltage of the electricity transmission line running south of Waltham Cross
- re-wiring overhead lines from Bramford to Braintree to Rayleigh to Tilbury, Twinstead and Pelham and between Norwich and Bramford.

These improvements will only increase capacity to around 6 GW.

We also need to build a new subsea link between East Anglia and Kent, and to reinforce the network between Norwich and Tilbury. We will hold separate consultations on these. Each additional reinforcement will include a cumulative effects assessment to consider how it will interact with other proposed developments in the area.

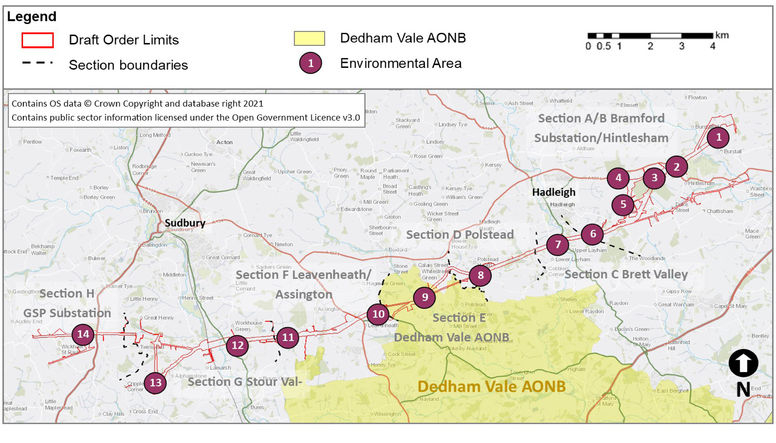
Map of the proposed reinforcement

nationalgrid



This map provides an overview of our proposals:

- new 400 kV overhead lines (approx. 19 km)
- new underground cables (approx. 10 km)
- four cable sealing end compounds, to facilitate the transition between overhead line and underground cable sections
- the removal of existing 132 kV pylons (approx. 25 km) between Burstall Bridge and Twinstead Tee
- the removal of existing 400 kV pylons (approx. 2.5 km) south of Twinstead Tee
- new grid supply point (GSP) substation and associated infrastructure at Butler's Wood, which will connect the local distribution network into the National Grid
- potential sites for delivering environmental mitigation, compensation and enhancement.



You said, we did

nationalgrid

The feedback received from our non-statutory consultation in Spring 2021 has helped to shape and guide the development of the proposals. As a result of feedback and further assessments, we have made some changes to our plans. In summary between non-statutory and statutory consultation we are:

- confirming undergrounding in two sections of the route within the Dedham Vale AONB and parts of the Stour Valley
- proposing a greater length of underground cables overall
- changing the route and configuration of pylons around Bramford Substation
- considering a further potential option for routeing the overhead line through Hintlesham and Ramsey woods
- proposing a modified route for the underground section to the east of the Dedham Vale AONB
- proposing a modified route for the underground section in the Stour Valley
- proposing new locations or designs for three Cable Sealing End compounds
- proposing to remove more of the existing 400 kV overhead line running south from Twinstead Tee
- proposing to build full tension gantries at three of the Cable Sealing End compounds, to reduce the overall number of terminal pylons along the route.

To read more about these changes in detail please view our **Project Development Options Report (January 2022)**[1] which can be viewed in our document library.

1. Project Development Options Report, National Grid, January 2022. Available at:

https://www.nationalgrid.com/uk/electricity-transmission/network-and-infrastructure/bramford-twinstead/document-library

Section AB – Bramford substation to Hintlesham

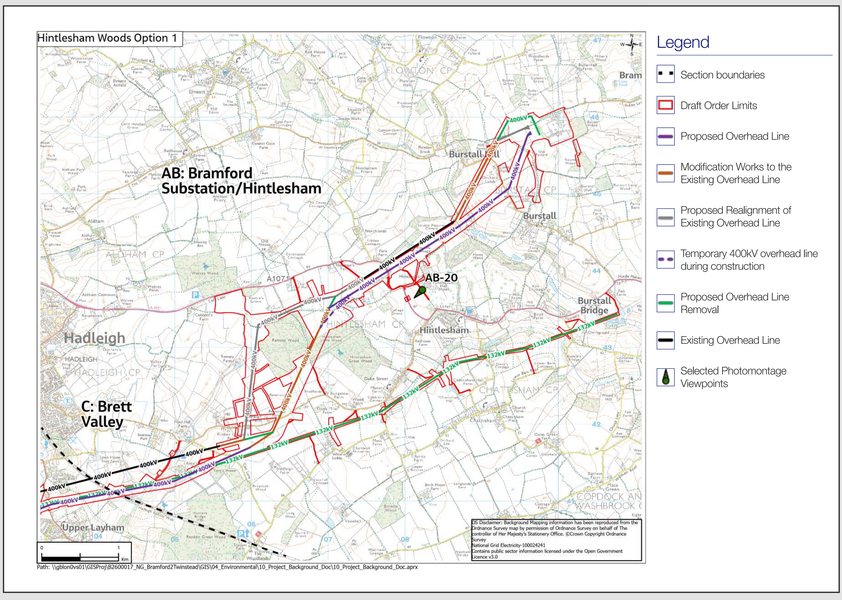
nationalgrid

Our plans in this section

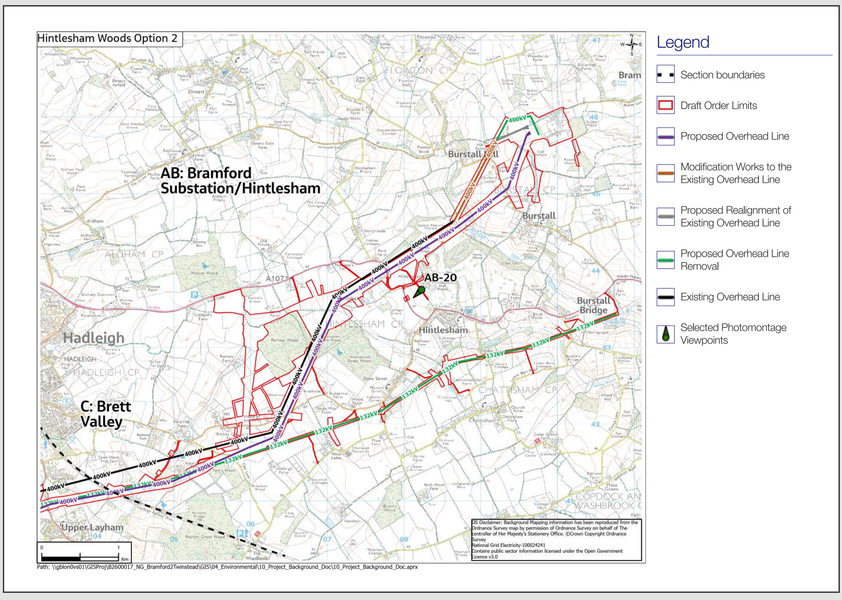
We would build a new overhead line from Bramford substation, to the south of the existing 400 kV line. At the substation, we are proposing some changes to the alignment of both the proposed new 400 kV overhead line and the existing 400 kV line when compared to the alignment presented at our last consultation.

At Hintlesham Woods, we are presenting two options for the routeing of the new line:

- **option 1:** We would build a new section of overhead line to the north of Ramsey Wood, and divert the existing 400 kV line onto these pylons. The new 400 kV overhead line would reuse the existing pylons through the woods. This is the option we presented at our non-statutory consultation.



- **option 2:** We would build a new section of overhead line parallel and to the south of the existing line within Hintlesham Little Wood. In this scenario, the overhead lines would run through the woods, with the pylons being located outside of the woodland.



For both options, we would remove the existing 132 kV overhead line from Burstall Bridge running to the south west of Hintlesham.

Changes since our last consultation

We have made changes to the overhead alignment on the approach to Bramford substation, to allow for a better electrical configuration at the substation, more efficient construction, and to reduce the number of pylons (these changes mean three of the existing 400 kV pylons will be removed and replaced with one new pylon).

This section of the route includes the Grade I listed Hintlesham Hall and Hintlesham Woods Site of Special Scientific Interest, which is designated for its ancient woodland and rare birds. We are presenting a second option for the routeing of the alignment around Hintlesham Woods, in response to the feedback we received during our non-statutory consultation in 2021. Please refer to the **Project Development Options Report** for more information on the options.

Section C – Brett Valley

nationalgrid

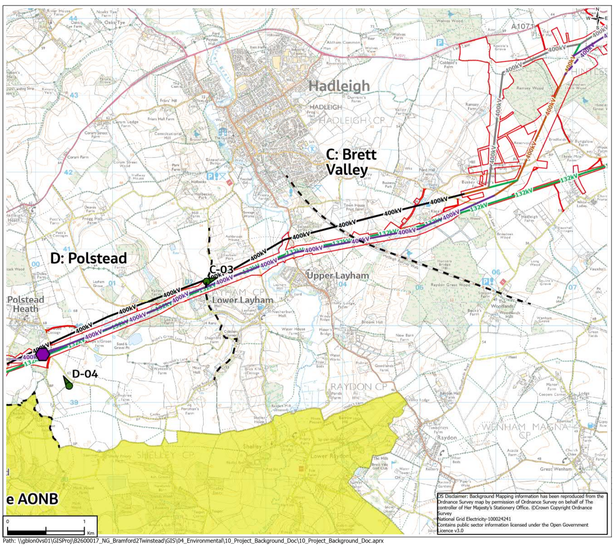
Our plans in this section

We would build a new 400 kV overhead line in this section, roughly along the same alignment as the existing 132 kV pylons. The line would travel south of Kate's Hill, deviating from the route of the existing 132 kV pylons to the east of Benton Street, with trees screening the pylons in views from Benton Street when approaching from the Layham direction.

We would remove the existing 132 kV pylons in this section.

Changes since our last consultation

The route of the proposed alignment has not changed in this section.



Path: \\gbbon0vs01\GISProj\BZ6000017_NG_Bramford2Twinstead\GIS\04_Environmental\10_Project_Background_Doc\10_Project_Background_Doc.aprx

Legend

- Section boundaries
- Draft Order Limits
- Proposed Overhead Line
- Proposed Underground Cables
- Temporary 400kV overhead line during construction
- Existing Overhead Line
- Proposed Cable Sealing End Compound
- Selected Photomontage Viewpoints
- Area of Outstanding Natural Beauty (AONB)

Section D – Polstead

Our plans in this section

We would primarily build new overhead 400 kV line in this section.

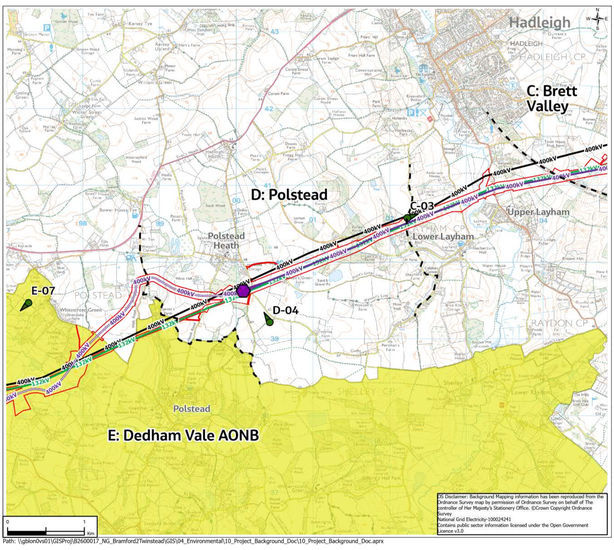
The overhead line would roughly follow the alignment of the existing 132 kV pylons, before connecting into the Dedham Vale East cable sealing end compound between two parts of Millfield Wood. Cable sealing end compounds are needed to connect overhead lines with underground cables and vice versa. From here, the reinforcement would continue via underground cables travelling north west, around Dollops Wood north of the Dedham Vale AONB.

We would remove the existing 132 kV pylons in this section.

Changes since our last consultation

We are proposing a new location for the Dedham Vale East CSE compound. We previously identified a site further west, adjacent to Dollops Wood. The new location is around 1 km further away from the AONB boundary between two existing blocks of woodland at Millfield Wood. The existing woodland would be retained and would provide visual screening for the cable sealing end compound. The aim of this change is to reduce any potential effect on the setting of the AONB and the Conservation Area at Polstead.

National Grid is now proposing to construct both sections of underground cables using a ducted solution where feasible (with the cable laid within conduits). This would allow the construction teams to pull the cables through ducts laid in the ground. There are engineering advantages to using this method, and it would also reduce the length of time that open trenches are required, meaning that reinstatement of the ground can happen sooner than if a standard open trenching method was used.



Path: \\ghbon0vd01\GISProj\BD0000017_NG_Bramford2Twinstead\GIS\04_Environmental\10_Project_Background_Doc\10_Project_Background_Doc.aprx

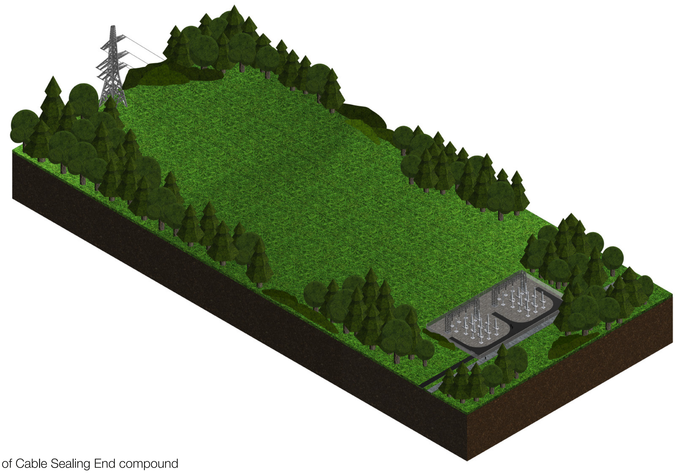


Illustration of Cable Sealing End compound

Section E - Dedham Vale AONB

nationalgrid

Our plans in this section

We would build underground cables through the Dedham Vale AONB, south west from the Dedham Vale East cable sealing end compound, between Broom Hill Wood and Bushy Park Wood to the B1068.

We would remove the existing 132 kV pylons in this section, meaning that there will be one less overhead line in the Dedham Vale AONB.

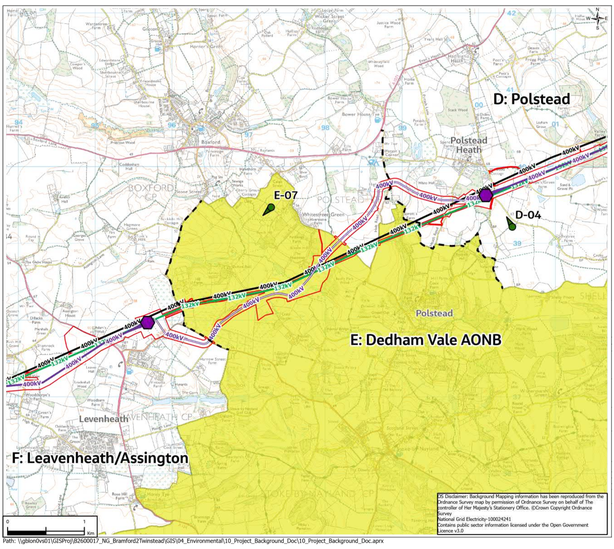
Changes since our last consultation

Following feedback from stakeholders, we can confirm that it is our intention to underground the new 400 kV transmission line through the Dedham Vale AONB.

National Grid is now proposing to construct both sections of underground cables using a ducted solution where feasible (with the cable laid within conduits). This would allow the construction teams to pull the cables through ducts laid in the ground. There are engineering advantages to using this method, and it would also reduce the length of time that open trenches are required, meaning that reinstatement of the ground can happen sooner than if a standard open trenching method was used.

At our last consultation, we asked for feedback on an alternative underground cable route at Dollops Wood. Whilst an option was explored to undertake a trenchless crossing beneath this woodland, our assessments suggest that the ground conditions would be unfavourable for this construction technique.

The alternative route to the north avoids Dollops Wood and removes the need for a trenchless crossing beneath the woodland.



Path: \\gbhordvs01\GISProj\82600017_NG_Bramford2Twinstead\GIS\04_Environmental\10_Project_Background_Doc\10_Project_Background_Doc.aprx

Section F – Leavenheath and Assington

Our plans in this section

We would build a mixture of new 400 kV overhead line and underground cables in this section.

We would construct underground cables through the Dedham Vale AONB, before connecting into the Dedham Vale West cable sealing end compound to the west of Boxford Fruit Farm.

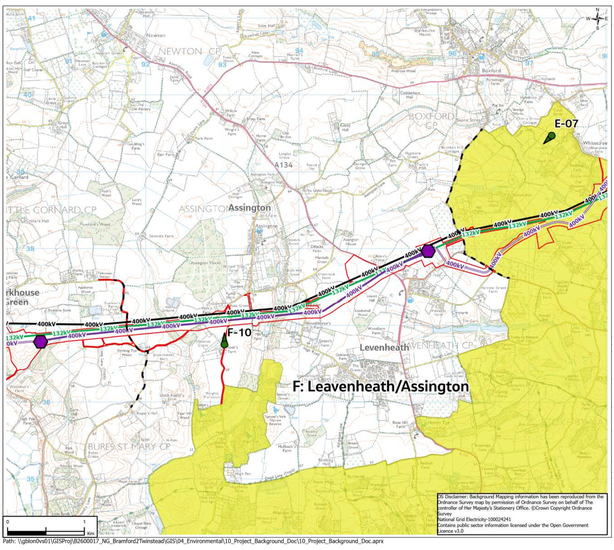
From here we would build a new 400 kV overhead line, routed to the south of the existing 400 kV line, along a similar alignment to the existing 132 kV pylons.

We would remove the existing 132 kV pylons in this section.

Changes since our last consultation

We are not proposing any significant changes to the route of the reinforcement in this section.

We have identified a location for a temporary construction compound off the A132. The compound would include site offices, staff welfare facilities and materials laydown and storage areas. It would be temporary and would be removed at the end of the construction process.



Section G – Stour Valley

nationalgrid

Our plans in this section

We would build a mixture of new 400 kV overhead line and underground cables in this section.

We would build a new overhead line roughly on the same alignment as the existing 132 kV pylons, before connecting into the Stour Valley East cable sealing end compound to the south of Workhouse Green.

From here we would build underground cables to take the new reinforcement under the B1508, the Sudbury branch railway line and the River Stour, and continue the underground cables to the south west between Henny Road and Moat Lane.

We would build the Stour Valley West cable sealing end compound to the south of Henny Back Road and connect the reinforcement to existing 400 kV pylons to the south of Twinstead Tee.

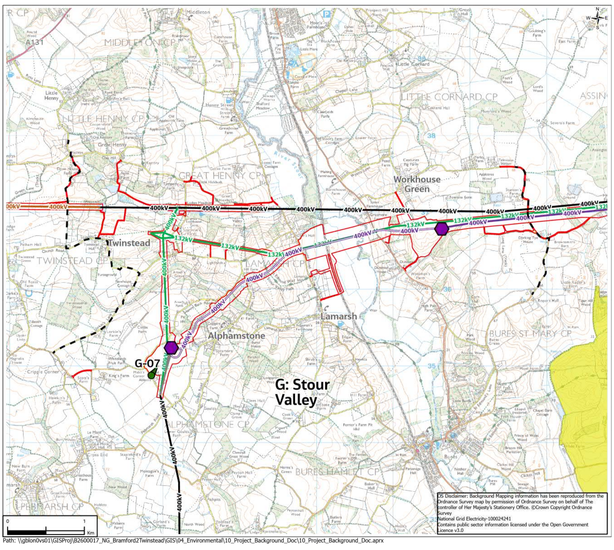
We would remove the existing 132 kV pylons in this section up to just south of Twinstead Tee, resulting in one less overhead line in the Stour Valley. We would also remove 2.5 km of the existing 400 kV line south of Twinstead Tee.

Changes since our last consultation

Following feedback from stakeholders, we can confirm that it is our intention to underground the new 400 kV transmission line in the Stour Valley, from the western side of Alphamstone to south of Workhouse Green.

We are proposing to locate the Stour Valley West CSE compound further south, on the southern side of Henny Back Road, in response to feedback during the non-statutory consultation. This will increase the amount of overhead line we can remove between Stour Valley West cable sealing end compound and Twinstead Tee.

We are also proposing a new route for the underground cables in this section, due to ground conditions. As a result of the changes to the location of Stour Valley West cable sealing end compound, the project team has explored potential options to provide a more direct alignment for the new 400 kV cable route (and hence reduce the land disturbance). An alternative route has been identified on the eastern side of Henny Back Road.



Section H – Grid supply point substation

nationalgrid

Our plans in this section

We would build a grid supply point (GSP) substation between Butlers Wood and Waldegrave Wood, off the A131 south of Sudbury, which would include:

- a fenced area housing the GSP equipment, this would be around 270 m by 50 m
- two super grid transformers (SGT) enclosed in a concrete structure
- noise enclosures around the SGT
- other electrical equipment like isolation equipment, switching devices, cooling banks, a generator and a water tank
- new 400 kV underground cable to connect the existing overhead line to the GSP substation.

We would also need to build a permanent access track to the compound, along with a single circuit cable sealing end compound. This CSE compound would be smaller than those elsewhere on the route of the reinforcement and would include a gantry up to 15 m high, and would be connected back into the GSP via a new underground 400 kV cable.

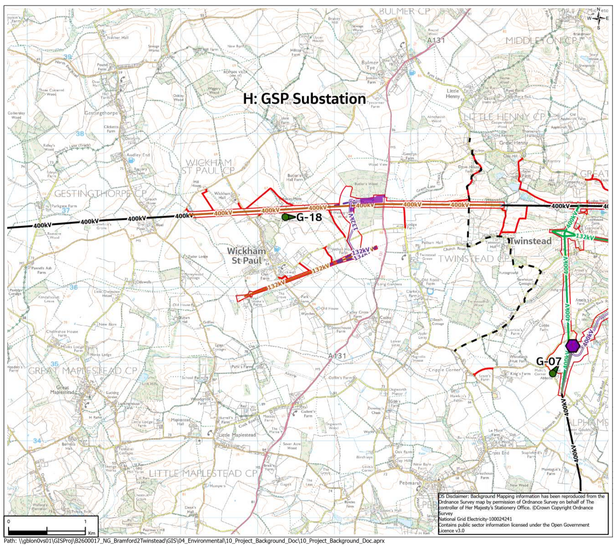
We are proposing to build a new 132 kV underground cable to the south of the GSP substation, to connect into the local distribution network (managed by UK Power Networks).

We would also plant new landscaping near to and around the GSP substation to help screen the site from nearby properties and viewpoints habitats at Butler's and Waldegrave Woods.

Changes since our last consultation

We are not proposing to change the location of the GSP substation, but further engineering work and ongoing discussion with UKPN means that a greater degree of design detail is now available regarding the scale and appearance of the GSP substation.

We are considering submitting a separate planning application for the GSP substation under the Town and Country Planning Act. Planning permission for the GSP substation prior to the approval of the DCO application for the rest of the reinforcement would allow us to remove the existing 132 kV pylons between Burstall Bridge and Twinstead Tee sooner. The GSP substation will form part of the DCO application and is taken into account in the Preliminary Environmental Information (PEI) Report.



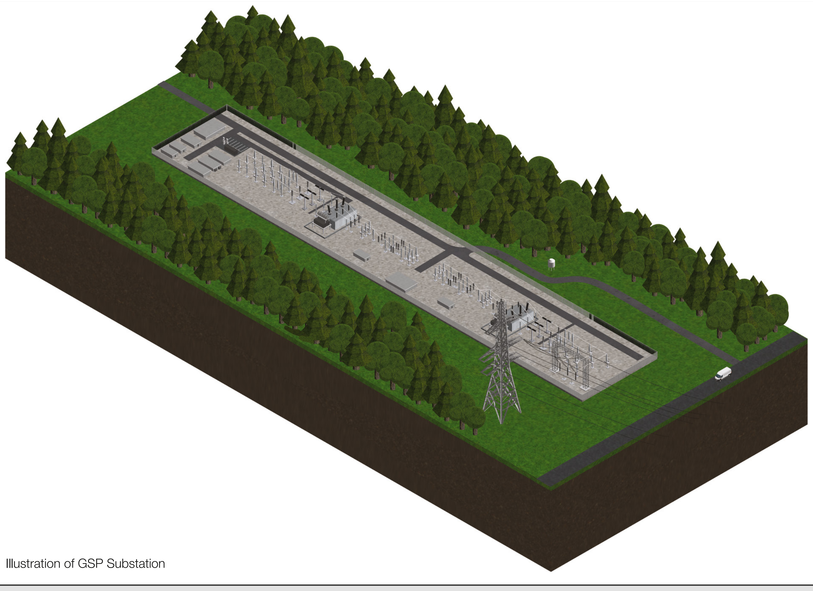


Illustration of GSP Substation

nationalgrid

We will need a construction workforce to build the reinforcement.

We will also need the temporary use of some land for our construction activities, including for use for site offices and storage of construction equipment and machinery.

Traffic and transport

We will include a Transport Assessment and an Outline Construction Traffic Management Plan as part of our application for development consent. It will set out proposed construction routes, timings of deliveries and mitigation measures.

Road transport

Our initial construction traffic forecasts indicate a daily peak of approximately 600 construction vehicles spread across 60 access points on the highway network.

The preliminary assessment suggests that Millwood Road is likely to experience the highest impact as a result of construction traffic, as it would be a construction access point to build a cable sealing end compound, as well as new sections of overhead line and underground cables. Construction is expected to result in one additional vehicle every 10 minutes at this location.

We are consulting with Suffolk and Essex County Councils on highways matters. However, initial studies indicate that the effects on the highways network will not be significant.

Rail transport

The proposed reinforcement would pass under the Sudbury Branch Line to the north of Lamarsh. National Grid is in discussion with Network Rail and the current assumption is that the railway would not be closed during construction, but there may be temporary changes to services.

Foot traffic

We've identified a number of public rights of way which would be affected by the construction of the proposed reinforcement, either when removing existing overhead lines or constructing the new reinforcement.

In some instances, we may need to close the public rights of way temporarily to keep people safe during construction. Where this is the case, closures will be as short as possible and diversions will be provided where practical.

We are committed to keeping Hadleigh Railway Walk open at all times.

Noise and vibration

Given the rural location of the proposed reinforcement, existing ambient and background noise is generally low. Noise and vibration would be generated during construction from an increase in traffic on roadways, construction vehicles and plant operating within the working area. Many of the noisy works taking place would be short in duration and localised. We have identified several noise sensitive receptors in the project area, for example residential properties, churches and schools. We would follow good practice, such as positioning plant away from sensitive receptors, and screening where appropriate.

There may be localised areas where additional measures, such as noise fencing may be required. However, no significant adverse effects are expected due to either noise or vibration during construction, particularly with the additional measures in place.

Environmental areas

Preliminary Environmental Areas

National Grid has developed a new Environmental Action Plan (2021-2026), which sets firm targets for this five-year period. Targets are focused on four priority areas:

- net zero carbon emissions
- minimising waste and sustainable use of materials
- caring for the natural environment
- leading the way.

National Grid will value nature and will protect and enhance the natural environment where possible using 'natural capital' and 'net gain' principles. We have made a commitment to deliver a 10% biodiversity net gain (BNG) on this project. This means that the habitat value for wildlife will be increased by around 10% once the project is complete, compared to what currently exists.

We have already started to work with technical specialists, environmental organisations and landowners to identify potential opportunities to achieve this. We have also identified preliminary 'environmental areas' for potential mitigation and compensation as well as for enhancement (including BNG) and these are shown on figure 3.2 and are described further in Table 4.2 of the PEIR. Further mitigation and gains may also be achieved outside of these identified environmental areas.

These preliminary environmental areas will be refined as we carry out further assessments and hold discussions with consultees and landowners. There will be site constraints such as existing environmental features, proposed underground services and cables as well as overhead power lines that we will need to consider as we develop proposals for planting and habitat creation. Some areas may not be taken forward or we may only need to use a proportion of the identified site.

We would like to hear what you think of the preliminary environmental areas as part of this consultation. Our final proposals will be included as part of the application for development consent.

How to respond and next steps

nationalgrid

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.

The deadline for consultation responses is 21 March 2022.

How do I find out more about your proposals?

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

- visiting our project website **nationalgrid.com/bramford-twinstead** and reading our consultation information
- reading our Project Background Document and Project Development Options Report which can be found in our document library:

  https://www.nationalgrid.com/uk/electricity-transmission/network-and-infrastructure/bramford-twinstead/document-library
- visiting a deposit point to view our consultation documents
- booking a telephone or video 'ask the expert' call by visiting our website, calling or emailing us.
- attending one of our online webinars
- requesting paper copies of information by calling or emailing us

To respond to the consultation:

Complete a feedback form and send it to us by 21 March 2022, you can give us your feedback:

- online at **nationalgrid.com/bramford-twinstead**
- by collecting a feedback form and freepost envelope at one of our deposit points
- post your written responses to **Freepost B TO T REINFORCEMENT**
- email your comments to **contact@bramford-twinstead.nationalgrid.com**
- If you cannot submit feedback via any of the above methods (for reasons such as due to a disability) then we may also be able to take your feedback over the phone.

Next steps

We will carefully consider your feedback as we finalise our proposals.

If we decide to submit a Town and Country Planning Act planning application for the GSP substation, we expect to do this in summer 2022, prior to submitting a Development Consent Order (DCO) application for the rest of the proposed reinforcement in Winter 2022/23.

Email us:
contact@bramford-twinstead.nationalgrid.com

Call us:
0808 196 1515 (9am-5pm, Monday to Friday)

Visit our project website:
nationalgrid.com/bramford-twinstead