

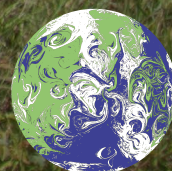
# Bramford to Twinstead Reinforcement

Project Background Document

March 2021



**nationalgrid**



PRINCIPAL PARTNER  
**UN CLIMATE  
CHANGE  
CONFERENCE  
UK 2021**

IN PARTNERSHIP WITH ITALY

# Introduction

**This Project Background Document explains our proposals to add much needed capability to the electricity transmission network between Bramford substation in Suffolk and Twinstead Tee in Essex.**

It has been prepared to support the first stage of consultations in Spring 2021 as work is re-started to develop detailed proposals.

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# Executive summary

## This Project Background Document explains our proposals to add much needed capability to the electricity transmission network between Bramford substation in Suffolk and Twinstead Tee in Essex.

The energy we all use is increasingly coming from renewable and low carbon sources and the UK has set a clear ambition to be a global leader in clean energy. The Government is committed to reaching net zero greenhouse gas emissions by 2050 and has set out its ambition to connect 40 GW of offshore wind by 2030 – enough to power every home in the country by the end of this decade.

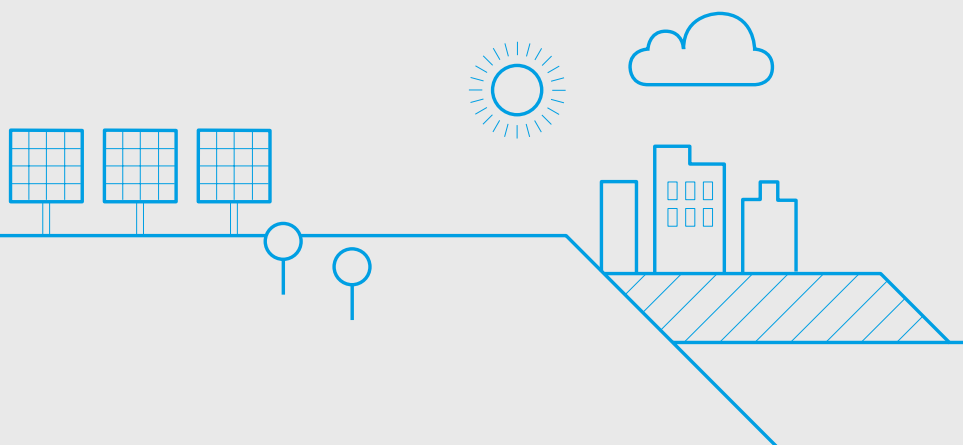
To help the move towards cleaner, greener energy, a large number of offshore wind projects are being developed by different companies around the UK coastline, 60 per cent of which are looking to come ashore up and down the East Coast.

In addition to new energy generated by offshore wind, new nuclear generation is planned at Sizewell C. We are also transporting more power with countries across the North Sea using interconnectors. New generation from wind, nuclear and interconnection means the amount of renewable and low carbon electricity sources expected to connect in East Anglia is set to significantly increase.

The existing electricity transmission network in East Anglia was developed in the 1960s to make sure the area has the electricity it needs. Until today it has been able to meet that demand, as well as transporting around 3.5 GW of power from nuclear generators and the early offshore wind projects out of the region. However, the capacity of the network will soon be exceeded.

By 2030, the amount of renewable and low carbon energy connecting to the network will dramatically increase – around 24.5 GW is contracted to connect in East Anglia by the end of this decade. The existing network in East Anglia does not have the capability to reliably and securely transport all the energy that will be connected by 2030 while operating to the standards it is required to.

Feeding into Bramford substation from the north and east there are currently three electricity transmission lines carrying power from the existing Sizewell B nuclear power and offshore wind farms. West of Bramford out to Twinstead Tee, there is currently only one electricity transmission line taking that power out to the wider network, creating a bottleneck.



This bottleneck significantly constrains the amount of power that can be carried westward on the network from Bramford when new sources of energy are connected. While additional network reinforcement will be needed elsewhere in East Anglia to carry the green energy that is coming in the next decade on to homes and businesses, it is essential we address this constraint on the network between Bramford and Twinstead Tee and provide the vital capacity needed. Other reinforcements will not take away the need to add capacity to this part of the network.

Between 2009 and 2013 work was undertaken to develop proposals to add this much needed network capability. Changes to when planned new generation would come online in East Anglia meant that work was put on hold at the end of 2013.

Now that the offshore wind developments have moved forward, backed by Government targets and legislation, it is clear that this reinforcement is needed. We will be taking forward the work required to ensure it is in place before the end of the decade so that we can use cleaner, greener electricity in our homes and businesses.

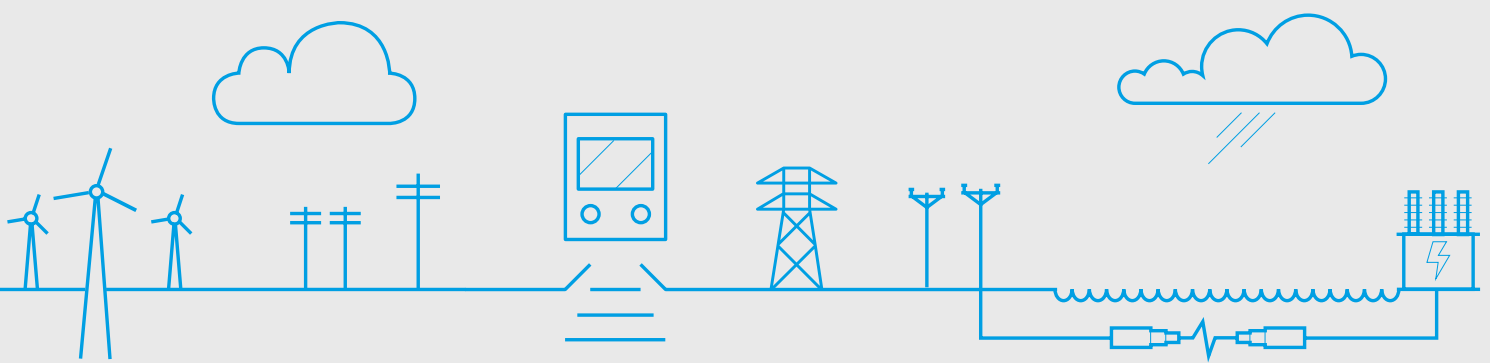
In Spring 2021 we are holding public consultations to explain why additional capability is needed on this part of the network, outline where we got to previously in developing proposals, and gather public feedback. That includes explaining the proposed route of the new line, and where it will be buried below ground, based on our previous assessment and feedback received from three rounds of consultation with local communities and stakeholders.

We need fresh feedback on those previous proposals and we are outlining the next steps as we continue to develop our detailed plans.

A project of this type, scale and importance is considered a 'Nationally Significant Infrastructure Project' (NSIP) which requires a 'Development Consent Order' (DCO). We anticipate making an application for a Development Consent Order (DCO) for Bramford to Twinstead in late 2022. Before we do that, we will hold a further round of public consultation to set out our detailed proposals.

It is important that we hear the views of local people. Your feedback is important – it will help shape our plans. Knowing what matters to you, matters to us, so that we can take it into account where we can as we develop our plans.

Please therefore take time to give us your **feedback** as we restart work to develop our proposals to deliver a cleaner, greener future.



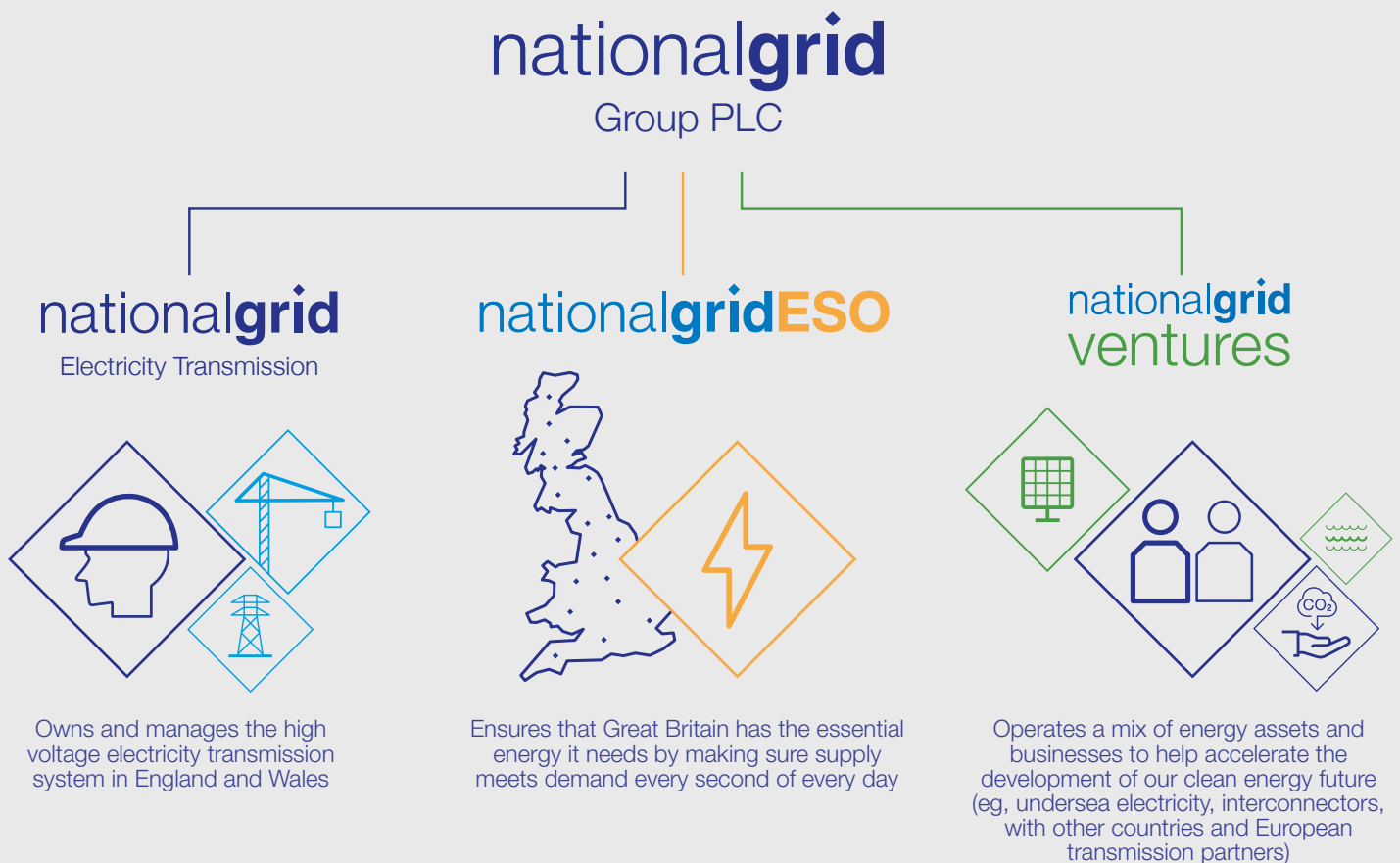
# National Grid Electricity Transmission

## Who we are

**National Grid Electricity Transmission owns, builds and maintains the network in England and Wales. It is National Grid Electricity Transmission that is developing plans for the Bramford to Twinstead reinforcement.**

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 distinctly separate legal entities, each with their individual responsibilities and roles. These are shown in the following diagram.



Each of the different entities within the National Grid Group are working to build a cleaner, fairer and more affordable energy system that serves everyone – powering the future of our homes, transport and industry.

When developing transmission network proposals, National Grid ESO and National Grid Electricity Transmission, must, under the Electricity Act 1989, do that in an efficient, coordinated, and economical way, and in a way which considers people and places. Options to deliver additional network capability and the options we take forward are evaluated against these statutory duties.

How we will go about doing that, meeting our amenity responsibilities and involving stakeholders and communities is outlined in our [commitments when undertaking works in the UK<sup>1</sup>](#):

#### **1. Establishing need**

We only seek to build electricity lines along new routes or build new above-ground installations where existing infrastructure cannot be upgraded, where forecasted increases in demand cannot be met by other means, where customer connections are required, or where existing infrastructure has been identified for replacement.

#### **2. Involving stakeholders and communities**

We promote genuine and meaningful engagement, meeting and, where appropriate, exceeding the requirements for consultation or engagement.

#### **3. Routeing networks and selecting sites**

If we need to build new infrastructure we seek to avoid areas which are nationally or internationally designated for their landscape, wildlife or cultural significance.

#### **4. Minimising the effects of new infrastructure**

When we are developing new infrastructure we seek to reduce the effect of our work on communities by having regard to safety, noise and construction traffic.

#### **5. Mitigating adverse effects of works**

We carry out relevant environmental investigations and report on these when we apply for consent for new works, and use best practice environmental impact assessment techniques to assess possible effects of our works and identify opportunities for mitigation measures.

#### **6. Offsetting where mitigation is not practicable**

When we cannot mitigate the impacts of our proposals, we offset these impacts in practical and sustainable ways that are developed through engagement with local stakeholders.

#### **7. Enhancing the environment around our works**

When undertaking works, we consider what practicable measures can be taken to enhance nearby and surrounding areas for the benefit of local communities and the natural and historic environment.

#### **8. Monitoring and learning for the future**

We monitor, evaluate and review our engagement processes to learn from previous experiences to improve our working practices.

#### **9. Reviewing our commitments**

We review these commitments at least every five years, and make additional revisions in response to new legislation, policy and guidance.

#### **10. Working with others**

We require other organisations working on our behalf to demonstrate these same commitments and continue to create an environment where we can share and deliver best practice.

<sup>1</sup> National Grid's commitments when undertaking works in the UK: Our stakeholder, community and amenity policy (National Grid, December 2019) – Available at <https://www.nationalgrid.com/uk/electricity-transmission/document/81026/download>

## Many other organisations also have a key role to play in delivering a cleaner energy future.



Department for  
Business, Energy  
& Industrial Strategy

The Department for Business, Energy & Industrial Strategy (BEIS), is the ministerial department with primary responsibility for energy.

In November 2020, the Prime Minister set out a Ten Point Plan for a [Green Industrial Revolution](#). This was followed by a White Paper, which sets out the Government's proposals for future law. The Energy White Paper, entitled [Powering our Net Zero Future](#), sets out how, as a country, we will transform the way we produce and use energy to tackle climate change, meet net zero emissions by 2050, and build back greener. The White Paper focuses on the Government's ambitions to increase energy generation from offshore wind and interconnectors, as well as hydrogen, carbon capture utilisation and storage (CCUS), heat and transport decarbonisation.

BEIS, working with input from National Grid ESO, is also conducting a review of how offshore wind is connected, with the aim of removing barriers to achieving Government ambitions for offshore wind<sup>4</sup>.

The Secretary of State for BEIS is also the ultimate decision maker for new electricity transmission network proposals under [The Planning Act 2008 \(as amended\)](#).<sup>5</sup>



Planning  
Inspectorate

The Planning Inspectorate is the Government agency responsible for examining proposals for Nationally Significant Infrastructure Projects. In energy terms, those include offshore wind farms, new nuclear power stations and new overhead lines greater than 2 km in length.

The Bramford to Twinstead reinforcement is a Nationally Significant Infrastructure Project.

## ofgem

Ofgem (the Office of Gas and Electricity Markets) is the government regulator for gas and electricity markets in Great Britain. Ofgem is a non-ministerial government department and an independent National Regulatory Authority, whose role is to protect consumers as a greener, fairer, energy system is delivered.

Ofgem works with Government, industry and consumer groups to help deliver net zero from an energy perspective at the lowest cost possible to consumers.

## nationalgridESO

National Grid ESO is the Electricity System Operator for the whole of Great Britain. National Grid ESO ensures electricity is always where it is needed and the network remains stable and secure in its operation. Generators apply to National Grid ESO when they wish to connect to the network and National Grid ESO leads the work to consider how the network may need to evolve to deliver a cleaner, greener future.

<sup>2</sup> The ten point plan for a green industrial revolution (UK Government, November 2020) – Available at <https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution>

<sup>3</sup> Energy white paper: Powering our net zero future (Department for Business, Energy and Industrial Strategy, December 2020) – Available at <https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-futuresmission/document/81026/download>

<sup>4</sup> BEIS Offshore Transmission Network Review Available at <https://www.gov.uk/government/publications/offshore-transmission-network-review>

<sup>5</sup> Planning Act 2008 (UK Government, December 2020) – Available at <https://www.legislation.gov.uk/ukpga/2008/29/contents>



**National Grid sits at the heart of Britain's energy system, connecting millions of people and businesses to the energy they use every day**

# Moving towards net zero

**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. 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 by 2050. Put simply, this means that we will remove the same amount of greenhouse gas from the atmosphere as we produce.

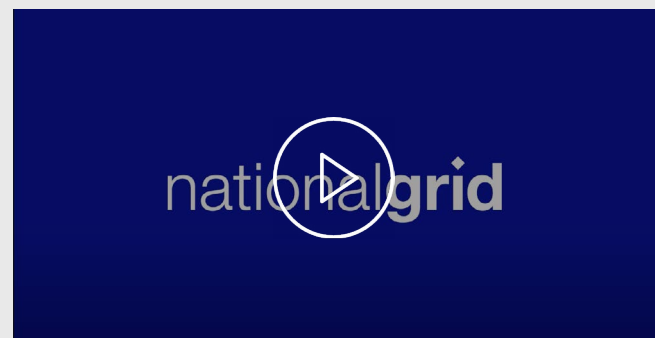
As a country we are already making progress. The UK has the largest offshore wind capacity in the world, with some 8.5 GW operating and a further 1.9 GW under construction. 2020 was the greenest year on record for Britain's electricity system. Spring 2020 saw the longest run since the industrial revolution without burning coal, stretching almost 68 days. 2020 was also a record-breaking year for renewables. Wind generation records were broken several times during the year, peaking at 59.9 per cent of the electricity mix on August 26. Solar power too set new records with 9.7 GW of power being produced, and its highest share of the electricity mix reaching 34 per cent on several occasions in May.

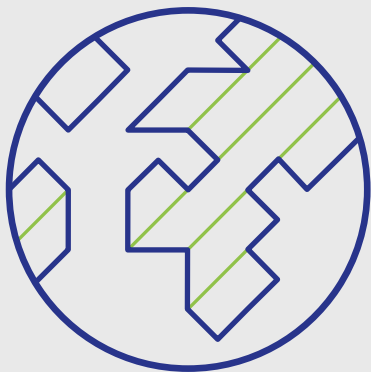
But more needs to be done. A healthier, greener future for Britain requires significant upgrades to our energy infrastructure to deliver clean green energy from where it is produced to where it is needed. Decarbonising the energy system means replacing – as far as it is possible to do so – fossil fuels with clean energy technologies such as from wind turbines and nuclear power for electricity production.

Growth in energy generated from offshore wind is a key part of achieving net zero and the Government's Energy White Paper sets an ambitious target to deliver 40 GW of offshore wind connected to the network by 2030 – enough to power every home in the UK. Growth in offshore wind also offers significant opportunities for economic growth and job creation. There are up to 60,000 jobs expected to be created in the offshore wind sector alone in this decade. Up to 250,000 jobs are also expected to be created by 2030 across the proposals in the Prime Minister's Ten Point Plan for a Green Industrial Revolution.

The [Climate Change Committee](#) anticipate that electricity demand will at least double by 2050 as we shift to clean energy to drive electric vehicles, heat our homes and power our industry. The Committee's [Sixth Carbon Budget](#)<sup>7</sup> published in December 2020 recommends deployment of renewables at scale, including 40 GW of offshore wind by 2030 and sustaining that build rate to support deployment up to 140 GW of offshore wind by 2050, raising further opportunity for growth and job creation. By 2050, our own analysis indicates that the energy sector needs to fill around 400,000 jobs to [build the Net zero energy workforce](#)<sup>8</sup>.

Our mission at National Grid is to support these aims. We believe by acting now, the UK can become the world's first major clean economy, with net zero carbon emissions by 2050, creating growth and jobs for communities across Britain.





**2050**  
UK Net Zero target



**40 GW**  
**by 2030**

all homes powered  
by offshore wind



**250,000**  
**by 2030**

jobs created  
building back  
greener

<sup>6</sup> Net Zero – The UK’s contribution to stopping global warming (Climate Change Committee, May 2019) – Available at <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

<sup>7</sup> The Sixth Carbon Budget: The UK’s path to Net Zero Climate Change Committee, December 2020) – Available at <https://www.theccc.org.uk/publication/sixth-carbon-budget/>

<sup>8</sup> Building the Net Zero Energy Workforce (National Grid, January 2020) – Available at <https://www.nationalgrid.com/document/126256/download>



Our aim is to work with stakeholders and the communities who will host this infrastructure to find the best solution.



# Delivering a cleaner, greener future

**To meet the 2030 target and 2050 legislation and move to a low carbon future using energy from offshore wind, nuclear power and interconnectors, we need to transport that energy from where it is produced or comes ashore, to where it is needed.**

The electricity transmission network, which moves energy at scale around the country, will play a vital role in this.

The existing network was designed to connect and transport energy from coal, nuclear and gas-fired power stations. In many parts of the country those power stations were more closely located to the larger centres of population, with power flowing mostly north to south around the country.

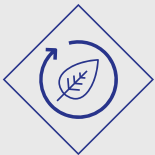
With around 60 per cent of all offshore wind developments looking to bring their energy amount of energy from offshore wind around the East Coast, we need to rewire the network for a different low carbon future: one where we deliver offshore energy from the East Coast to the entire UK population.

To achieve this it will be critical to strike the right balance between the need to connect the growing offshore wind, the cost to UK consumers and the impact to local communities and the environment. Our aim is to work with stakeholders and the communities who will host this infrastructure to find the best solution, balancing the needs of the UK, the environment and the regions we directly work in.

# How the need for network reinforcement is identified

**National Grid ESO leads an annual cycle which looks at how much energy needs to be carried on the network in the future, and where network capability needs to be improved to accommodate that.**

The overall effect of that process is to ensure that the right efficient, coordinated and economical proposals are brought forward to deliver what the country requires from the electricity transmission system, in a way that represents best value to electricity consumers.



1. A range of [Future Energy Scenarios](#)<sup>9</sup> are discussed with stakeholders and are published each summer. Future Energy Scenarios represent different credible scenarios for how quickly we might make the transition to a cleaner, greener energy future as we strive towards net zero by 2050.



2. The Future Energy Scenarios inform the analysis in the [Electricity Ten Year Statement](#)<sup>10</sup> which is published each November, setting out the System Operator's view of future transmission requirements and where the capability of the transmission network might need to be addressed over the next decade.



3. Transmission Owners respond with solutions to address the requirements identified in the Electricity Ten Year Statement. National Grid ESO assess and publish their recommendations as to which proposals should proceed in a [Network Options Assessment](#)<sup>11</sup> report each spring.



4. National Grid Electricity Transmission responds to [Network Options Assessment](#) recommendations in its [Network Development Policy](#)<sup>12</sup> which is published each summer. The Network Development Policy sets out which network proposals National Grid Electricity Transmission will take forward.



In planning and operating the network, transmission licence holders – onshore and offshore – are required by their licences to comply with the [National Electricity Transmission Security and Quality of Supply Standard](#)<sup>13</sup>. These set out criteria and methodologies for planning and operating the network in Great Britain – in essence, minimum requirements designed to ensure secure and stable electricity supplies.

The need to reinforce the network between Bramford and Twinstead has been identified as necessary to take forward in the two most recent [Network Options Assessment](#) reports. National Grid Electricity Transmission confirmed it will be taking forward work to deliver the reinforcement in its [Network Development Policy](#) statement in 2020.

<sup>9</sup> Future Energy Scenarios 2020 Report (National Grid ESO, July 2020) – Available at <https://www.nationalgrideso.com/future-energy/future-energy-scenarios/fes-2020-documents>

<sup>10</sup> Electricity Ten Year Statement 2020 (National Grid ESO, November 2020) – Available at <https://www.nationalgrideso.com/node/1981>

<sup>11</sup> Network Options Assessment 2020/21 (National Grid ESO, January 2021) – Available at <https://www.nationalgrideso.com/research-publications/network-options-assessment-noa>

<sup>12</sup> Network Development Policy Decisions (National Grid, June 2020) – Available at <https://www.nationalgrid.com/uk/electricity-transmission/document/134036/download>

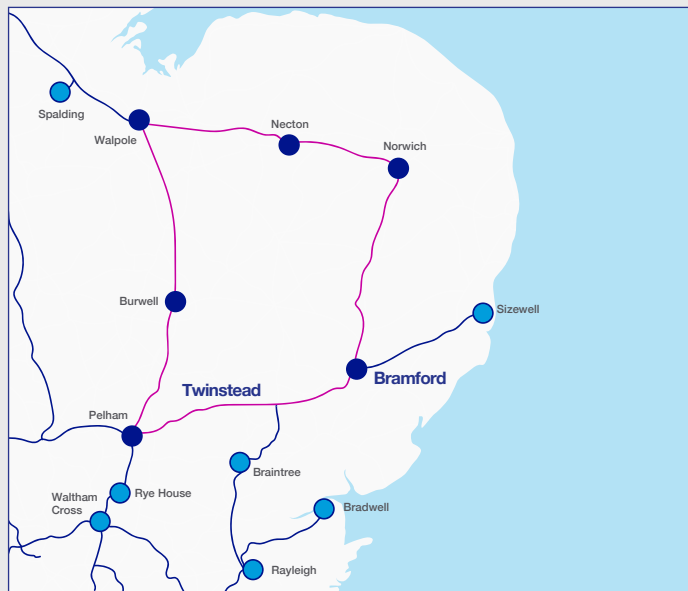
<sup>13</sup> Security and Quality of Supply Standard (National Grid ESO, March 2021) – Available at <https://www.nationalgrideso.com/industry-information/codes/security-and-quality-supply-standards>

# The need for reinforcement in East Anglia

## The network today in East Anglia

Like much of the high voltage electricity transmission network across the country, the network in East Anglia was largely developed in the 1960s. It was built to supply regional demand, centred around Norwich and Ipswich, fed from our Bramford substation.

A large loop runs from Walpole in the north to Pelham and Rayleigh/Tilbury in the south, via Norwich and Bramford. Two 400,000 volt (400 kV) overhead lines connect Sizewell B, and a decommissioned 132,000 volt (132 kV) overhead line used to connect the now decommissioned Bradwell A nuclear power station. Historically there was relatively limited generation and low consumer demand in East Anglia when compared to other parts of the country.



## Current generation and demand in East Anglia

To understand current and future demands on the electricity network the concept of network boundaries is used. A boundary splits the system into two parts and shows where there are high-power flows between parts of the network. When flows across a network boundary are forecast to be above the capability of the network, there are two options to manage this:

1. pay electricity generators on one side of the boundary to reduce the energy they produce. This then reduces the flows of electricity across the boundary. When National Grid ESO pay generators to do this they are called 'constraint payments'; and/or
2. increase the capability of the network to allow more electricity to flow.

At present, generation in the region currently totals 4,100 MW. Most of this generation (3,160 MW) is directly connected to our network and 940 MW is connected via the UK Power Networks distribution network. We call that locally connected generation 'embedded'. This is shown in the table on the following page

Peak demand for electricity in the region has been falling slightly in recent years from a peak of 1,426 MW in 2019 to a forecast peak demand for 2021 of 1,346 MW.



Project name	Generator	Connection site	Contracted generation (MW)	Type of generation
Sizewell B	EDF Energy Nuclear Generation Ltd	Sizewell	1,230	Nuclear
Dudgeon	Dudgeon Offshore Wind Ltd	Necton	400	Offshore wind
Greater Gabbard	Greater Gabbard Offshore Wind Ltd	Leiston	500	Offshore wind
Galloper	Galloper Wind Farm Ltd	Leiston	350	Offshore wind
East Anglia 1	East Anglia One Ltd	Bramford	680	Offshore wind
Sheringham Shoal	Scira Offshore Energy Ltd	Norwich (embedded)	315	Offshore wind
Gunfleet Sands	Gunfleet Sands Ltd	Bramford (embedded)	99.9	Offshore wind
Gunfleet Sands II	Gunfleet Sands II Ltd	Bramford (embedded)	64	Offshore wind
Great Yarmouth	RWE Generation UK plc	Norwich (embedded)	420	Gas (CCGT)
Thetford	EPR Thetford Ltd	Bramford (embedded)	41	Biomass



**2021**  
**Generation:**  
 Nuclear 1,230 MW, Offshore wind 2,409 MW, Gas 420 MW, Biomass 41 MW  
**Generation (total):** 4,100 MW  
**Forecast demand:** 1,346 MW

### How power is transported throughout the network

Each line of pylons on the network carries two electrical circuits. There are four circuits connecting to and from the region – two circuits on the overhead line between Walpole and Norwich to the north and two on the line running west out of Bramford to Twinstead Tee.

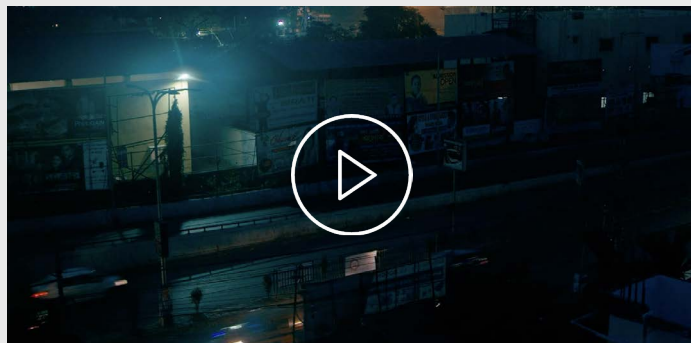
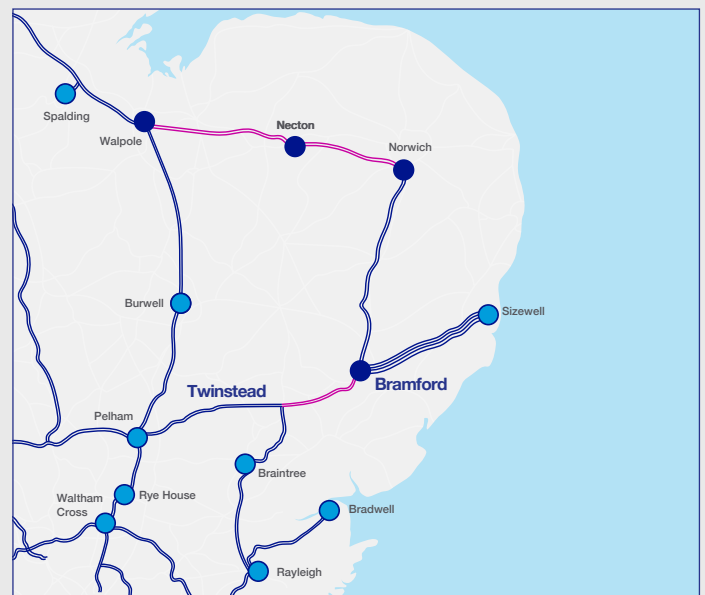
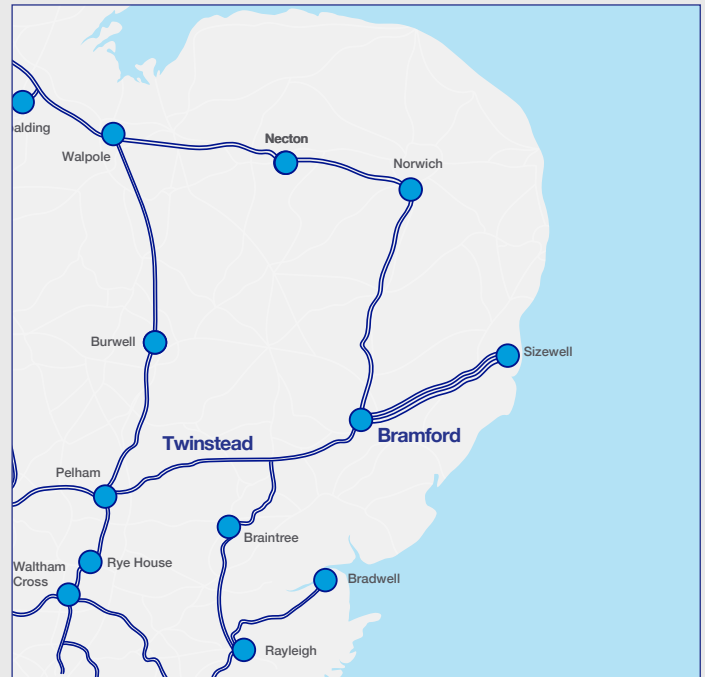
The network is planned and operated under a set of standards designed to ensure there are no widespread electricity supply interruptions, even if two circuits are out of service.

For example, if one circuit is switched out for planned maintenance and another is impacted by a fault at the same time, the Security and Quality of Supply Standard is designed to ensure:

- electricity system frequency is maintained within statutory limits
- no part of the network is overloaded beyond its capability
- voltage performance stays within acceptable statutory limits; and
- the system remains electrically stable.

National Grid ESO oversees the standards, however, they are approved by a Security and Quality of Supply Standard panel and Ofgem.

Taking the standards into account, the network today in East Anglia has around 3.5 GW of transfer capability out of the region, with two of the four circuits connecting the region to the wider network out of service.




**Export Capability**  
3,546 MW

### Future generation and demand

While the network in East Anglia can accommodate the level of generation and demand that there is today, this situation will change over the next decade with the increase in the amount of electricity set to come from offshore wind, interconnectors and nuclear power.

By the end of this decade, if everything contracted to connect in the region does connect, there will be significantly more generation than the current network is capable of accommodating. The table below shows the anticipated demand year on year and how the generation that is contracted to connect to the network is set to grow by the end of the decade.

While that is the contracted position, all of these new sources of electricity may not necessarily connect in the timescales they are contracted to connect in. Some may not be consented, or some may not proceed to financial final investment decisions. However, it is clear that the level of generation that will come into the region far exceeds the current network capability.

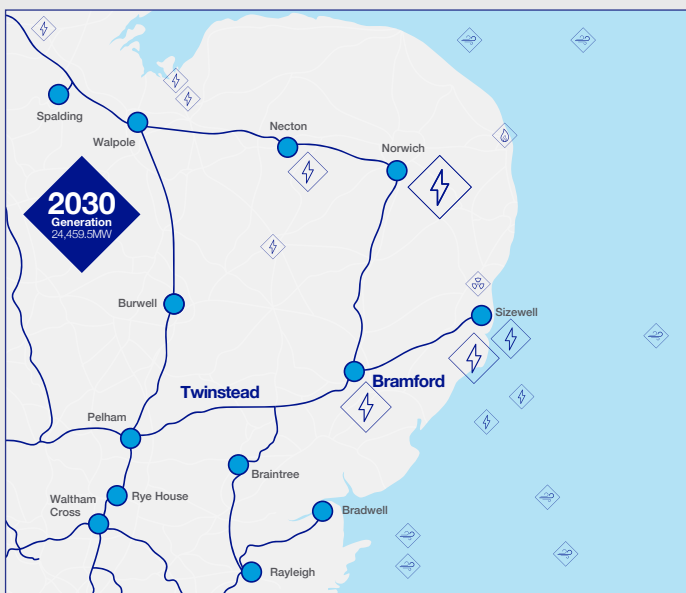
From the analysis by the System Operator, some 17.4 GW of offshore wind can reasonably be expected within the eastern region off the East Anglia coast by 2030, if the Government’s ambition to connect 40 GW of offshore wind in the UK by then is achieved<sup>14</sup>.

Taking that into consideration and basing their analysis on credible **Future Energy Scenarios**, the System Operator anticipates that as much as 17.9 GW of transfer capability is needed out of East Anglia by 2030, far in excess of the 3.5 GW of transfer capability in the existing network<sup>15</sup>.

<sup>14</sup> Offshore Coordination Phase 1 Final Report, National Grid ESO, 16 December 2020, page 18. Available at <https://www.nationalgrideso.com/news/final-phase-1-report-our-offshore-coordination-project>

<sup>15</sup> Leading the Way Required Transfer in 2030, National Grid ESO, Electricity Ten Year Statement 2020, East of England Boundary Flows and Base Capability graphs. Available at <https://www.nationalgrideso.com/news/electricity-ten-year-statement-etyts>

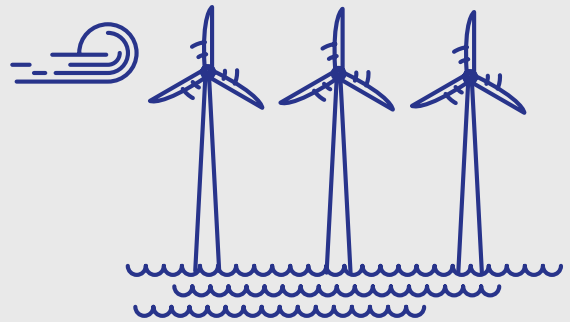
Year	1	2	3	4	5	6	7	8	9	10
Year	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
<b>Demand (MW)</b>	1,346	1,303	1,287	1,280	1,287	1,298	1,312	1,351	1,387	1,413
<b>Generation cumulative total (MW)</b>	4,100	4,448.5	5,748.5	10,015.5	13,215.5	13,215.5	16,775.5	19,175.5	21,193.5	24,459.5



**Contracted Generation and Interconnectors**  
24,459.5 MW

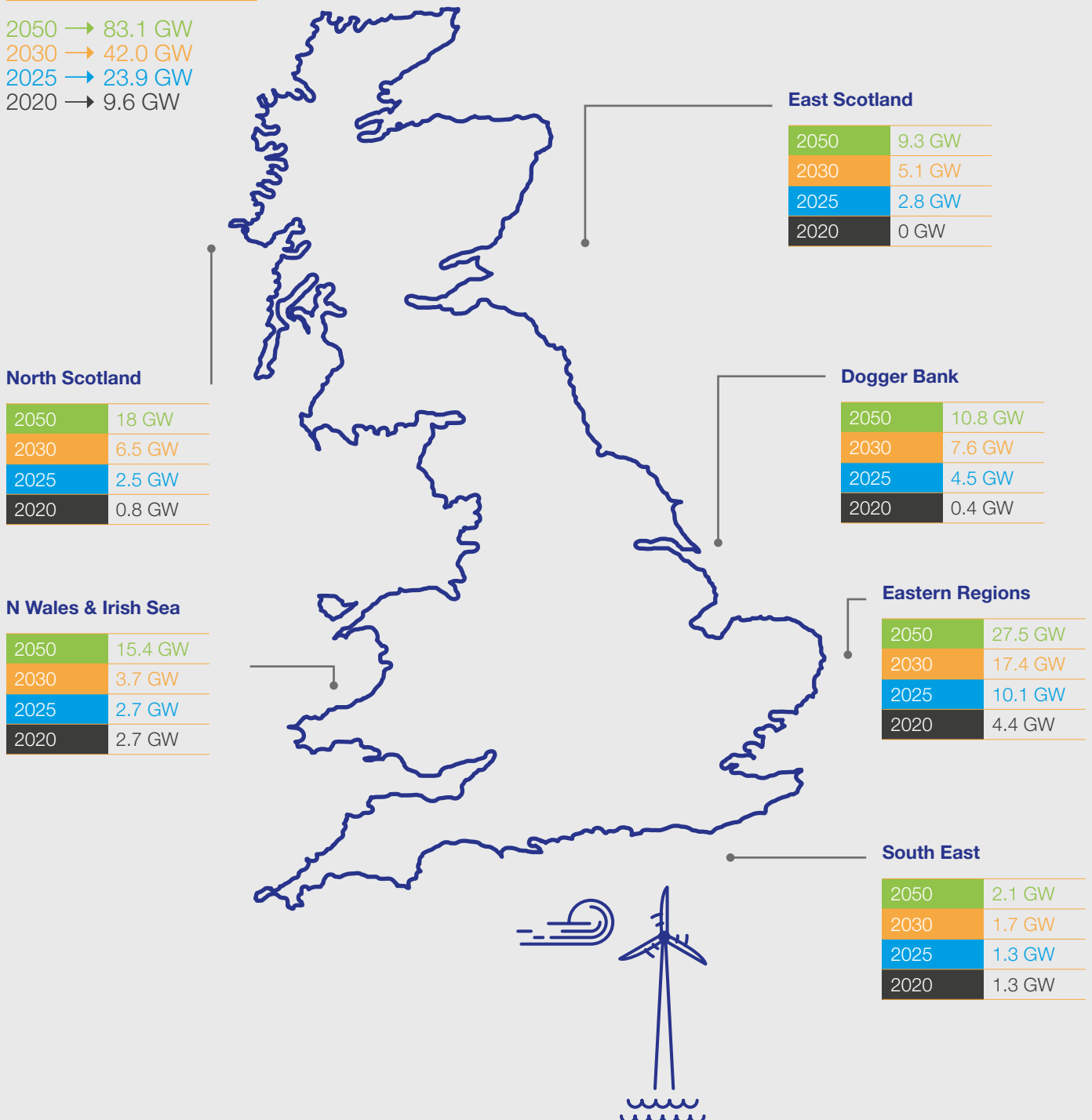
### Regional installed offshore wind capacity up to 2050

Offshore Coordination Phase 1 Final Report (December 2020)  
<https://www.nationalgrideso.com/document/183031/download>



### Leading the Way Scenario Total Installed Capacity

2050 → 83.1 GW  
 2030 → 42.0 GW  
 2025 → 23.9 GW  
 2020 → 9.6 GW



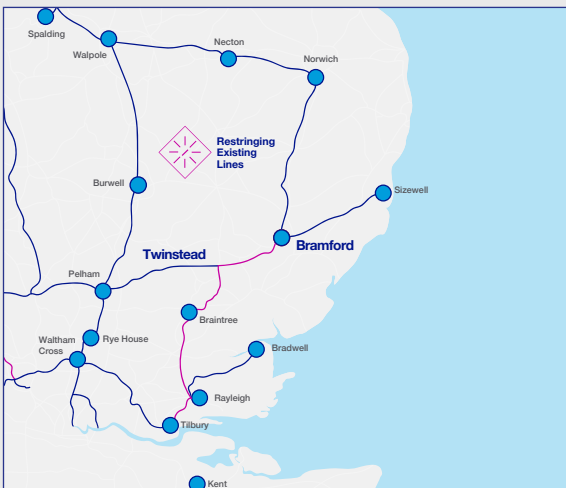


### Increasing the capability of the existing network

Before we consider building new parts of the network we first must consider whether we can achieve more capability by upgrading parts of the existing network. That can involve using thicker conductors/wires on some of our existing overhead lines and adding smart power control devices to control the flow of electricity on parts of the network to transport it to where it is needed.

And here in East Anglia in the first half of this decade, that is what we will be doing:

- installing power control devices at key substations in the region – at Pelham, Rye House and Waltham Cross, to make more use of an existing route to the west of the region
- increasing the voltage of a section of line from Waltham Cross south into London to 400 kV to increase the capability of that part of the network on into the capital
- re-wiring existing overhead lines with larger diameter conductors that can carry more power – for example on the existing overhead lines from Bramford to Braintree to Rayleigh to Tilbury.



Making these improvements increases the capability of the existing network to around 6 GW, but it is still insufficient to deliver the capability that the National Grid ESO advises is required to deliver cleaner, greener energy to homes and businesses beyond the region in line with Government ambitions.

As National Grid ESO has outlined in **NOA 2020/2**, the reinforcement between Bramford and Twinstead is critical in all scenarios and needs to be in place by 2028. The System Operator has also explained in the NOA that other reinforcements are also needed in the region to deliver on the Government’s ambition to see 40 GW of offshore wind connected by 2030.



### NOA:

The Network Options Assessment (NOA) is an annual report published by National Grid ESO which outlines their recommendations as to which reinforcement projects should be taken forward during the coming year.

The table below shows the work that is needed on the network in the region over the next decade as identified in the [Network Options Assessment](#).

Option description	Earliest in Service Date (EISD)
Reconductor remainder of Rayleigh to Tilbury	2021
Power control devices at Burwell Main	2022
Reconductor remainder of Coryton South to Tilbury circuit	2022
Commercial solution for East Anglia – Stage 1	2024
Commercial solution for East Anglia – Stage 2	2024
Power control devices at Pelham	2024
Power control devices at Pelham	2024
Power control devices at Rye House	2024
Power control devices at Rye House	2024
Elstree to Sundon reconductoring	2024
Uprate Hackney, Tottenham and Waltham Cross 275 kV to 400 kV	2027
Reconductor the newly formed second Bramford to Braintree to Rayleigh Main Circuit	2028
New 400 kV double circuit between Bramford and Twinstead	2028
New offshore HVDC link between Suffolk and Kent option 1	2029
New 400 kV double circuit in north East Anglia	2030
New 400 kV double circuit in south East Anglia	2030
Thames Estuary reinforcement	2030

In addition to the network reinforcement between Bramford and Twinstead, a high voltage subsea DC link is required between East Anglia and Kent for 2029 and two 400 kV double circuit reinforcements are needed onshore for 2030 - one in North East Anglia and one in South East Anglia.

Each of those reinforcements, in addition to Bramford to Twinstead, are necessary to deliver the Government's ambition to see 40 GW of offshore wind connected by 2030. Additional work is needed to consider options for those further reinforcements. Each will be taken forward on slightly later timescales than Bramford to Twinstead.

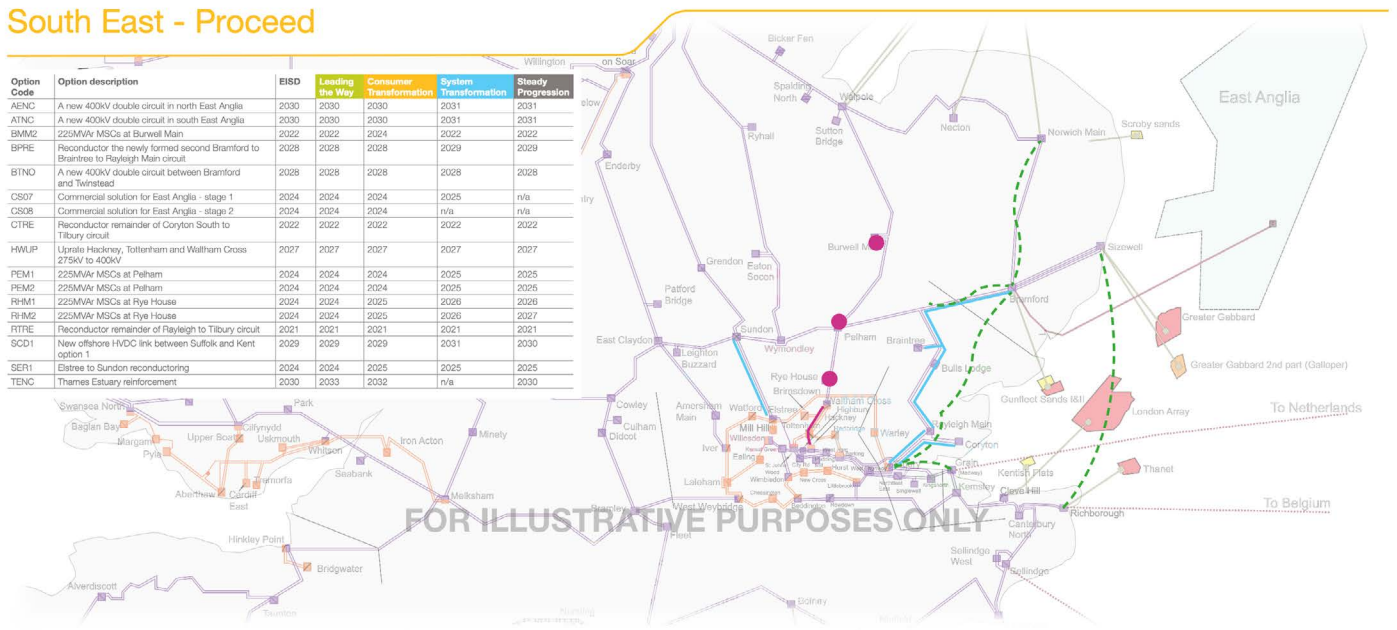
### Double circuit:

Most overhead lines are double circuit, carrying an electrical circuit on each side of the line of pylons.



### South East - Proceed

Option Code	Option description	EISD	Leading the Way	Consumer Transformation	System Transformation	Steady Progression
AENC	A new 400kV double circuit in north East Anglia	2030	2030	2030	2031	2031
ATNC	A new 400kV double circuit in south East Anglia	2030	2030	2030	2031	2031
BMM2	225MW/Ar MSCs at Burwell Main	2022	2022	2024	2022	2022
BPFE	Reconductor the newly formed second Bramford to Brainree to Rayleigh Main circuit	2028	2028	2028	2029	2029
BTNO	A new 400kV double circuit between Bramford and Tainstead	2028	2028	2028	2028	2028
CS07	Commercial solution for East Anglia - stage 1	2024	2024	2024	2025	n/a
CS08	Commercial solution for East Anglia - stage 2	2024	2024	2024	n/a	n/a
CTRE	Reconductor remainder of Coryton South to Tibury circuit	2022	2022	2022	2022	2022
HWUP	Uplink Headway, Tottenham and Waltham Cross 275kV to 400kV	2027	2027	2027	2027	2027
PEM1	225MW/Ar MSCs at Pelham	2024	2024	2024	2025	2025
PEM2	225MW/Ar MSCs at Pelham	2024	2024	2024	2025	2025
RHM1	225MW/Ar MSCs at Rye House	2024	2024	2025	2026	2026
RHM2	225MW/Ar MSCs at Rye House	2024	2024	2025	2026	2027
RTRE	Reconductor remainder of Rayleigh to Tibury circuit	2021	2021	2021	2021	2021
SCD1	New offshore HVDC link between Suffolk and Kent option 1	2029	2029	2029	2031	2030
SER1	Elstree to Sundon reconducting	2024	2024	2025	2025	2025
TENC	Thames Estuary reinforcement	2030	2033	2032	n/a	2030



NOA 2020/21 recommendations

⊕ Stop 
 ⊕ Hold 
 ⊖ Proceed

⊖ Legend 
 ⊕ Main map 
 ⊕ South West 
 ⊕ South East 
 ⊕ Midlands 
 ⊕ Wales & West England 
 ⊕ South Scotland & North England 
 ⊕ Scotland 
 ⊕ HVDC

[Click here to view details on the options](#)

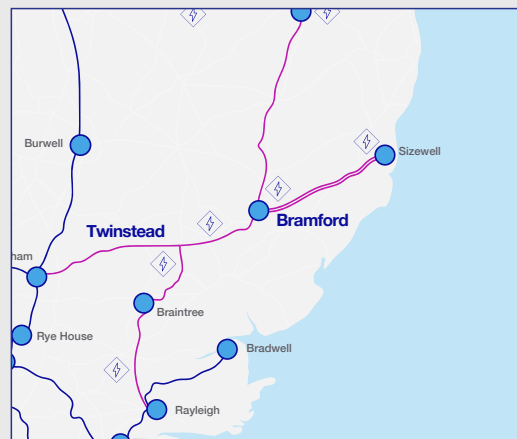
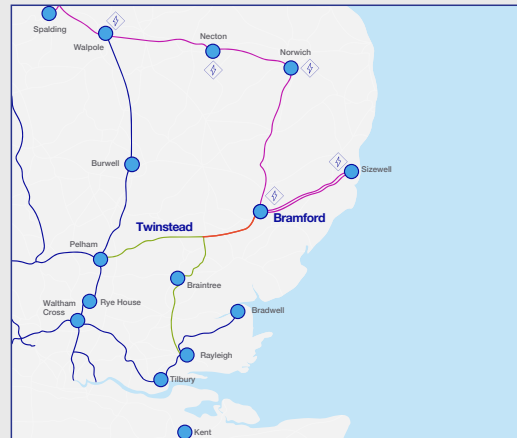
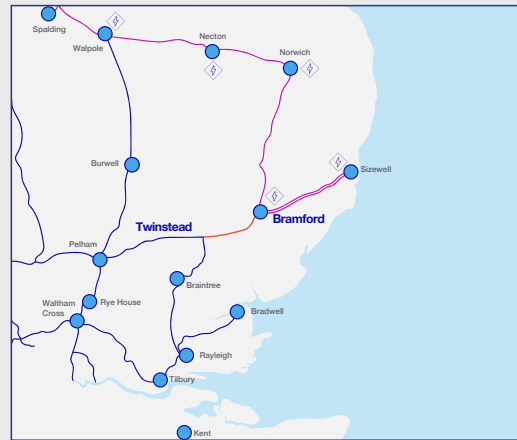
# Why Bramford to Twinstead Tee needs reinforcing

**We need to reinforce the network between Bramford and Twinstead Tee because that part of the network is a significant bottleneck or constraint to future power flows.**

There are currently three double circuit overhead transmission lines carrying power into Bramford – one from Norwich and two from Sizewell. But to the west of Bramford, out to Twinstead Tee, there is currently only one double circuit line carrying power out of the region. With substantial new sources of energy connecting in the region by the end of the decade, the existing overhead line west of Bramford would be overloaded.

Beyond Twinstead Tee there are two routes out of the region – one west to Pelham and one south to Braintree-Rayleigh-Tilbury. Adding a double circuit route between Bramford to Twinstead will remove the current bottleneck on the network and make efficient use of the capacity available in those two routes – one west and one south of Twinstead Tee. Reinforcing the network between Bramford and Twinstead will create two independent double circuit transmission routes west of Bramford – one from Bramford to Pelham and one from Bramford to Braintree to Rayleigh to Tilbury.

The Bramford to Twinstead reinforcement is needed in addition to the other network reinforcements identified in the region, if as a country, we are going to secure the benefits of a cleaner greener future. Harnessing the power of offshore wind, greater interconnection with countries across the North Sea and new low carbon nuclear generation, alongside delivering Government ambitions for 40 GW of offshore wind by 2030, will also require the other network reinforcements in East Anglia.







### Back-checking strategic options

We have checked again to see whether there may be more appropriate strategic options to address the network bottleneck between Bramford and Twinstead Tee. You can read more about our review in the [Project Development Options Report](#).

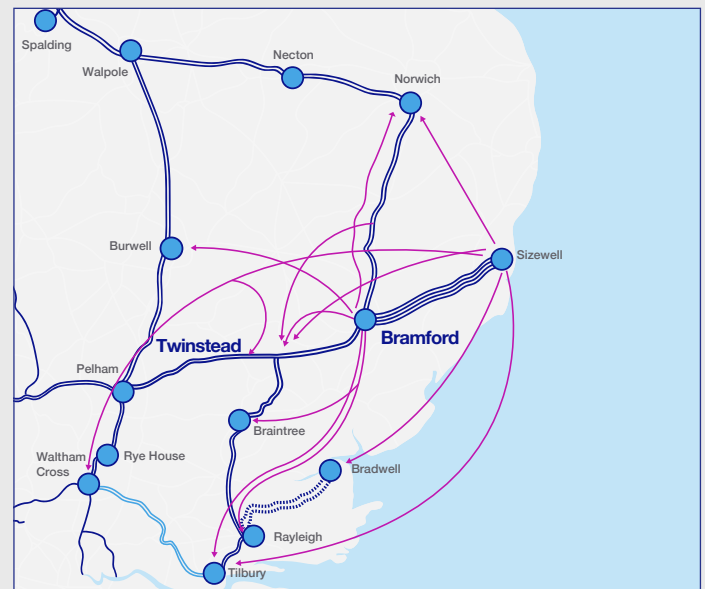
23 strategic options in and around Bramford that might achieve the required reinforcement have been examined, including the original options considered in 2009.

These included:

- doing no physical works
- re-directing proposed connections
- maximising existing connections
- reinforcing north of Bramford with new 400 kV network infrastructure
- reinforcing south of Bramford with new 400 kV network infrastructure
- bypassing Bramford with new 400 kV network infrastructure; and
- reinforcing west of Bramford with new 400 kV network infrastructure.

Those that would not fully address the constraint or meet the Security of Supply Standard were discounted. We also discounted others that would not offer some material benefit over another option, for example, more expensive options which would provide the same network capacity.

An illustration of all Strategic Options considered is shown below.



Carefully considering our statutory duties and obligations to be efficient, coordinated and economical, and to have regard to the desirability of preserving amenity, reinforcing the network between Bramford and Twinstead Tee was identified as the most suitable option. Of the workable options, it requires the least new infrastructure and has less impact on communities and the environment compared to other options. It also has the lowest capital cost whilst addressing the constraint on the network efficiently.

# The BEIS review of offshore coordination

## **The Business Energy and Industrial Strategy (BEIS) department's Offshore Transmission Network Review 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, and we fully support that work.**

We will work closely with Government, stakeholders and coastal communities to ensure we play our part to deliver the infrastructure needed to achieve net zero in a way that reduces impacts on communities. In meeting that challenge there are two key considerations.

The first is the way in which we best connect and coordinate the growth of offshore wind farms and interconnectors to the electricity transmission network along the immediate coastline. The second is the network reinforcements required further inland to accommodate the increased demand on the network and to ensure we can effectively transport the power to where it is needed across Great Britain.

That offshore coordination work by Government is ongoing. As explained in the [Energy White Paper](#), Government will be looking to redesign the current regime to bring more extensive coordination and mitigate environmental, social and economic costs for the 2030s and beyond.<sup>16</sup>


While developers will be encouraged, where early opportunities for coordination exist, to consider becoming pathfinder projects, National Grid ESO explains in the latest [Network Options Assessment](#), that onshore reinforcement is still needed. The System Operator's analysis found that the viable offshore options, in the scenario where 40 GW of offshore wind is achieved by 2030, do not displace any of the onshore reinforcement requirements that have been identified.<sup>17</sup>

Notwithstanding how offshore coordination is developed, major onshore development and electricity network reinforcement will therefore still be necessary. To put this into perspective, successfully delivering the Government's 40 GW of offshore wind ambition will require around 500 km of onshore and around 400 km of offshore electricity transmission network being consented and delivered within this decade across the east side of the country.

The network reinforcement between Bramford and Twinstead Tee is an integral part of that and is considered 'critical' for 2028 by National Grid ESO in all of the Future Energy Scenarios.

<sup>16</sup> Energy White Paper, December 2020, page 80, BEIS – available at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/945899/201216\\_BEIS\\_EWP\\_Command\\_Paper\\_Accessible.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945899/201216_BEIS_EWP_Command_Paper_Accessible.pdf)

<sup>17</sup> Network Options Assessment, January 2020, page 69, National Grid ESO – available at <https://www.nationalgrideso.com/document/185881/download>



**The network reinforcement between Bramford and Twinstead Tee is considered ‘critical’ for 2028 by National Grid ESO in all of the Future Energy Scenarios.**

# Our proposals – The story so far

## **We first started to develop proposals to reinforce this part of the network between 2009 and 2013, when new generation planned in the region was expected to come online earlier.**

Extensive work and several rounds of public consultation were carried out before changes to when planned new generation would come online meant that work was put on hold at the end of 2013.

The overall effect of that process is to ensure that the right efficient, coordinated and economical proposals are brought forward to deliver what the country requires from the electricity transmission system in a way that represents best value to electricity consumers.

### **Cable Sealing End:**

Where a high-voltage underground cable joins onto an overhead line, the transition from one to the other requires termination points, known as sealing end compounds. These sealing ends are also called ‘terminations’ or ‘terminals’.

### **Stage 1 Consultation**

The first stage of consultation on our proposals started in October 2009. During the consultation we explained why the reinforcement was needed, how we had assessed the strategic options and set out in detail each of the four route corridor options under consideration.

We ask people to provide their views on the proposals and on each of the four route corridor options.

Over 3,000 individual consultation responses were received and we used that feedback to review against our corridor assessment work and to help identify a preferred corridor.

In July 2011 we confirmed our decision to take forward Route Corridor 2 as our preferred corridor option. It was selected as it followed the route of existing overhead lines and would enable a section of an existing 132 kV route to be removed. This corridor was also considered to give rise to a lower scale of effect on landscape and views than other options.

A summary of how we selected the preferred corridor and how consultation feedback influenced our decision is set out in our Project Development Options Report March 2021.

The detailed reports on strategic options and routing which were presented during the first consultation can also be found in the document archive on our [consultation website](#).

## Stage 2 consultation

Following the selection of our preferred corridor, we started to develop indicative alignments on the basis that the new overhead line would be close to the existing 400 kV overhead line.

In consideration of the feedback received during stage 1 consultation, we carried out further work to identify whether any specific sections should be partly or wholly undergrounded.

The views of local people were canvassed through a series of Community Forum meetings. Local authorities, environmental bodies and technical specialists gave feedback through several Thematic Group meetings.

In May 2012 we published details of our indicative alignment. It included two sections of the route where the high cost of putting the cables underground was considered justifiable, these were:

- around 4 km from Whitestreet Green to Leavenheath through Dedham Vale, where the landscape was highly valued locally and was designated nationally as an Area of Outstanding Natural Beauty
- approximately 4 km in the Stour Valley, where, after listening to feedback from the public and consultees, it was clear that location was important not just for its high-quality landscape, but also its cultural links with Gainsborough, Constable and Nash.

Each of the underground sections would require a **cable sealing end** compound at each end to connect to the overhead lines. A cable sealing end compound is the structure needed to make the transition from underground cable to overhead line.

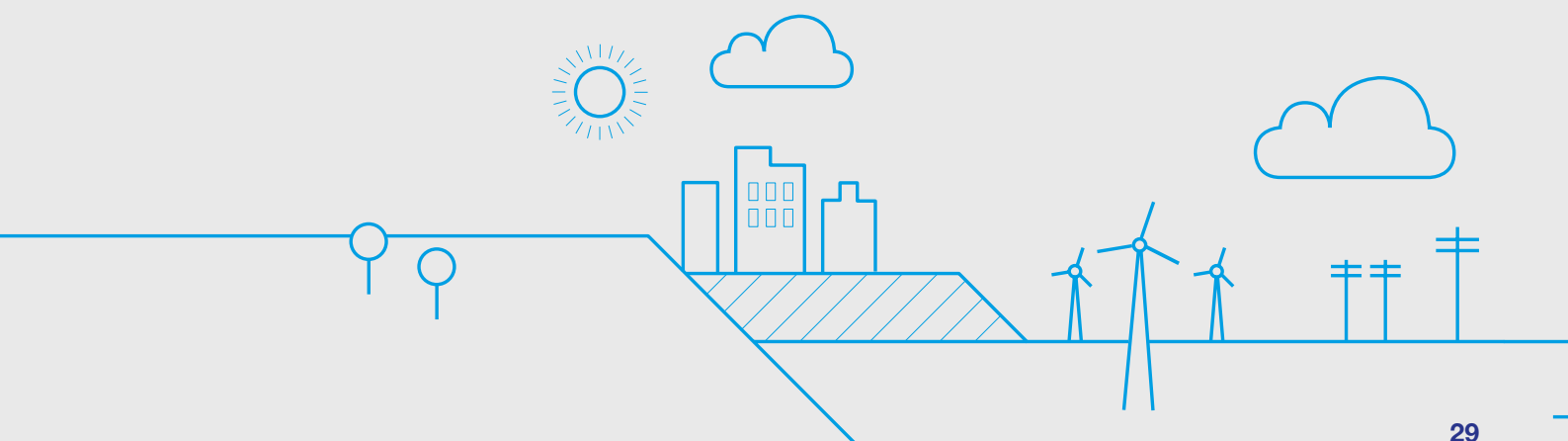
Further public consultations were held over the summer of 2012 and in October of that year, we confirmed our preferred alignment and announced the next steps in the detailed design of our proposals including:

- deciding on the preferred connection at the eastern end of the route around the villages of Hintlesham and Burstall and where English Heritage had asked for more information to help it consider how the proposals could affect the setting of Hintlesham Hall
- further consultation on the location of the connection point at the western end of the route where underground cables in the Stour Valley would connect to the existing 400 kV overhead line between Twinstead Tee and Braintree
- identifying a site for a grid supply substation west of Twinstead, to maintain local electricity supplies and enable the removal of UK Power Network's existing 132 kV line.

## Western cable sealing end compound

In November and December 2012 we consulted on location options for the cable sealing end compound needed at the western end of the route.

In January 2013, we confirmed our preferred location to the west of the village of Alphamstone. Selecting the southern site for the sealing end compound meant that more than a kilometre of overhead line and three pylons in the Stour Valley could be taken down in addition to the removal of the 132 kV line between Twinstead Tee and Bramford.



### Alignment around Hintlesham/Bramford

Following consultation feedback, we carried out further studies on any potential impacts on the Grade 1 listed Hintlesham Hall and the Hintlesham Woods Site of Special Scientific Interest. We considered a number of potential overhead alignments and an underground cable route.

After further discussions with statutory consultees, we developed an optimised alignment. This included changes in pylon positions and inclusion of specific mitigation measures. In August 2013 we confirmed our intention to take forward the optimised alignment, along with a proposed mitigation plan.

Further details can be found in the [Project Development Options Report](#).

### 132 kV substation west of Twinstead Tee

Our interim alignment incorporated part of the route of an existing 132 kV overhead line owned and operated by UK Power Network, the local distribution network operator. Our proposals included removing approximately 25 km of 132 kV overhead line from Burstall Bridge to Twinstead, to make space for the new 400 kV line and to help mitigate the visual impact of the new line.

To enable the removal of the 132 kV line, we would need to carry out additional work to maintain local electricity supplies. After consultation with UK Power Networks, we confirmed our preferred solution would be to build a new grid supply point substation to the west of Twinstead Tee. A review of the options considered can be found in the [Project Development Options Report 2021](#).

In February 2013 we held a public consultation about the possible site options for the new electricity substation. In August 2013 we confirmed a site near Butler's Wood, directly off the A131, south of Sudbury, as our preferred location.

### Project pause

In November 2013 work was paused when it was apparent that some of the generation projects in the region were not going to come forward as quickly as previously expected. While the need for the reinforcement remained, it was apparent that it would not be needed in the timescales originally envisaged.





# Our proposals – Where we are now

## **Our network studies show that the reinforcement needs to be in place by 2028. In picking up the proposals again, we have carried out a thorough re-appraisal of the scope of the works and our decisions to date.**

Through that review of the decision-making process and the decisions themselves, we have been able to reach a fully informed and up to date position on the project. We are confident that our 2013 proposals remain largely appropriate, but the review has identified some areas for further consideration. To address these, where possible at this stage, we have carried out additional work and that forms part of our consultations before confirming our final designs.

Further details of our review and the emerging proposals are set out in the Project Development Options Report and are summarised below.

In Spring 2021 we will hold a public consultation on the emerging proposals. We will set out the proposals as they stood when we paused work in 2013 and explain where we feel further consideration is needed. We will seek feedback on the proposals as a whole, where we need to carry out more work and ask whether there is anything else we should consider.

### **Project costs**

As part of our review, we have also reconsidered the costs of building the reinforcement. Market and material costs will change before we reach construction, but based on current information and designs, in today's (or equivalent) prices, the capital cost estimates rounded to the nearest £m, are as outlined as follows.

The total estimated capital cost of the proposed scheme is approximately £363m. Of that, overhead line costs account for approximately £78m. Underground cables, including cable sealing ends at £5m each, account for approximately £245m. Substation works are £40m of which £27m is the new grid supply point at Butlers Wood.

The cost of putting high voltage cables underground is substantially higher than putting them overhead, and those extra costs ultimately fall on everyone's electricity bills. The duties placed on us by the Electricity Act 1989 require a balance to be struck between the visual impact on the landscape and the cost to electricity bill-payers, so we must consider every case for installing cables underground on its merits.

National Policy Statement EN5 explains that Government expects the need for new electricity lines to be often fulfilled through the development of overhead lines. Government does not see the development of overhead lines as inconsistent with our environmental duties, but Government recognises there may be instances where overhead lines may not be appropriate.

Cases for installing cables underground could include locations where it would be physically difficult to build an overhead line (such as in urban areas), wide river or estuary crossings, and highly valued landscapes. These may include National Parks and Areas of Outstanding Natural Beauty but could also include particularly sensitive landscapes, areas with iconic views or other places where the potential impact of a new electricity connection could only be mitigated by putting it underground.

The additional cost of undergrounding in this instance, for example, at the Stour Valley section compared to using overhead lines, is £118m. The additional cost of undergrounding the Dedham Vale section compared to using overhead lines is £107m. To use overhead lines throughout the route would cost £142m, compared to the cost of a fully undergrounded scheme, which would cost £694m.






Example of a sealing end compound





Example of reinstated hedge above underground cables


# Emerging proposals


**The proposals include the following components, which we would like your thoughts and views on during the consultation:**


- 

Constructing an approximately 27 km 400 kV electricity transmission connection between Bramford substation in Suffolk to Twinstead Tee in Essex, comprising 19 km of overhead line and 8 km of underground cable (4 km through the Dedham Vale AONB and 4 km in the Stour Valley)
- 

Constructing four cable sealing ends at the points where overhead lines meet underground cables
- 

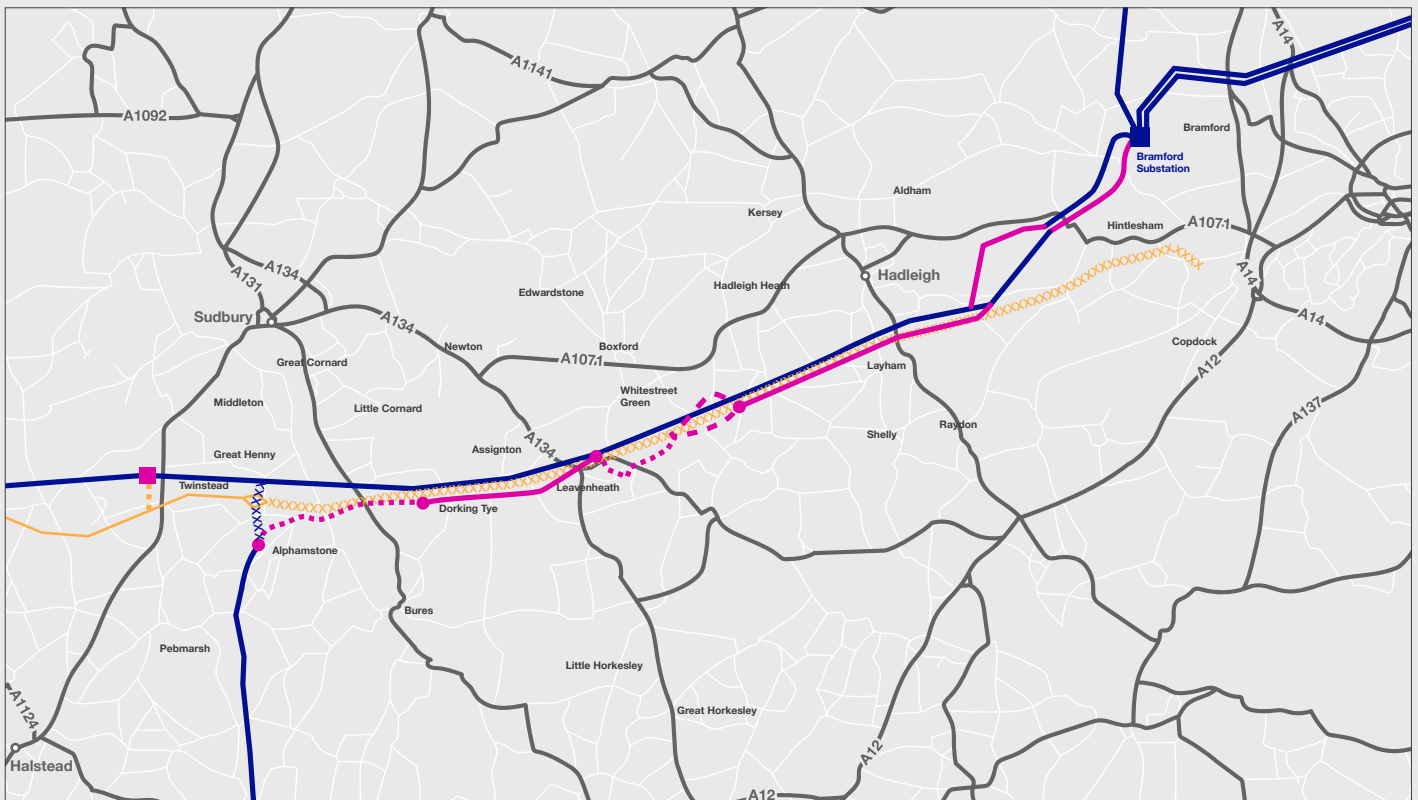
Removing 25 km of existing 132 kV overhead line operated by UK Power Networks, between Burstall Bridge (approximately 2.5 km south of Bramford Substation) and the diamond crossing
- 

Constructing a new substation at Butlers Wood to enable the removal of UK Power Network's 132 kV overhead line. A new substation is needed to maintain the electricity supply to local homes and businesses
- 

Removing around 1 km of the existing Bramford to Braintree to Rayleigh 400 kV overhead line south of Twinstead Tee
- 

Constructing an alternative alignment for the existing 400 kV line around Hintlesham Woods to allow the new line to adopt the current route through the woods.

We have broken the route down into various sections.



**Key**

- proposed 400 kV overhead line
- ⋯ proposed 400 kV underground cable
- - - proposed options for a 400 kV underground cable
- existing 400 kV overhead line to be retained
- ⋯ proposed 132 kV underground cable
- existing 132 kV overhead line to be retained
- xxxxxxx proposed removal of existing 132 kV overhead line
- xxxxxxx proposed removal of existing 400 kV overhead line
- proposed substation
- proposed 400 kV cable sealing end
- existing 400 kV substation to be retained

# Section AB

## Bramford to Hintlesham

### Our proposals

We would build a new overhead line from Bramford substation to the south of the existing 400 kV line.

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 reinforcement would then be able to use the existing pylons through Hintlesham Wood. This approach was favoured over other alignment options due to the effects on landscape, visual and heritage. It would also allow for the greater paralleling of new and existing line and avoid impacting Hintlesham Wood.

We would remove the existing 132 kV overhead line from Burstall Bridge running to the south west of Hintlesham.

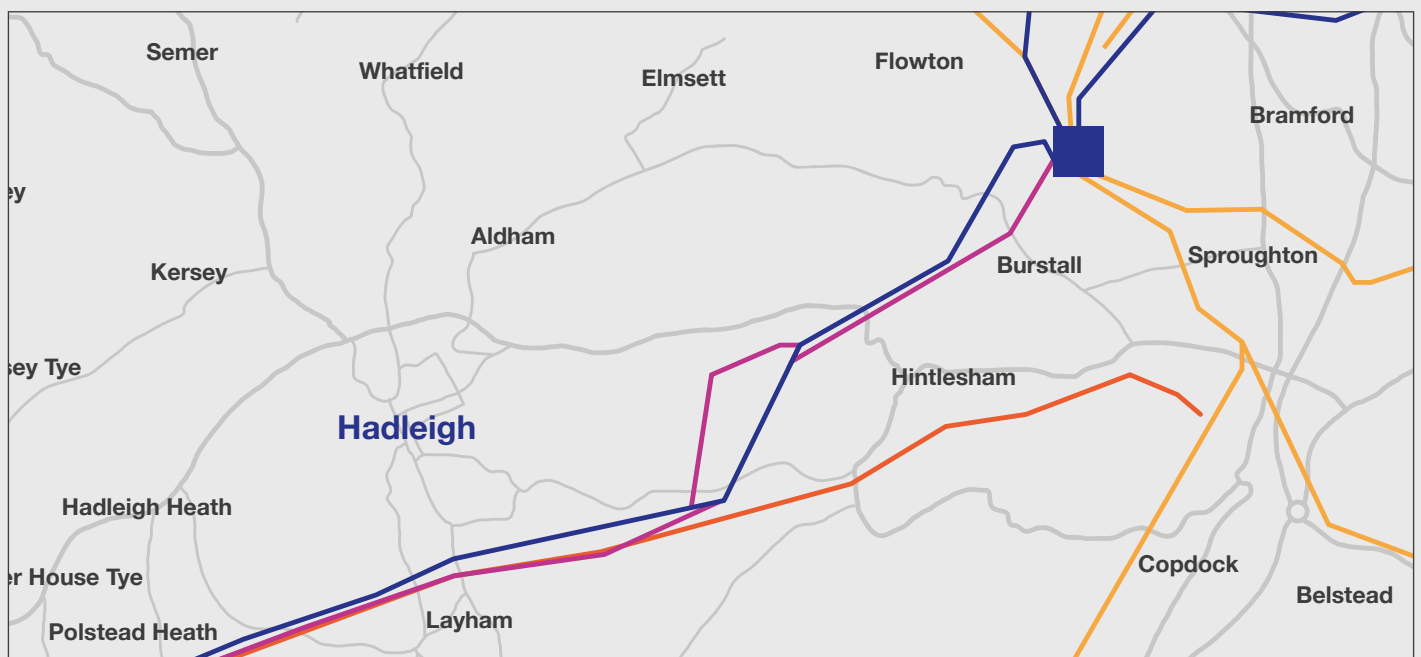
### Considerations

This area of the route includes the Grade I listed Hintlesham Hall, the ancient woodland in Hintlesham Little and Great Woods and Ramsey Wood, which are also designated as Sites of Special Scientific Interest (SSSI).

We will continue to consult with Historic England to ensure our proposals strike the right balance between delivering the critical network reinforcement, whilst being mindful of the surrounding environmental, heritage and community context.

**Key**

- proposed 400 kV overhead line
- proposed 400 kV underground cable
- proposed options for a 400 kV underground cable
- Existing substations
- removal of existing 132 kV overhead line
- existing 400 kV line
- existing 132 kV line



# Section C




## Brett Valley

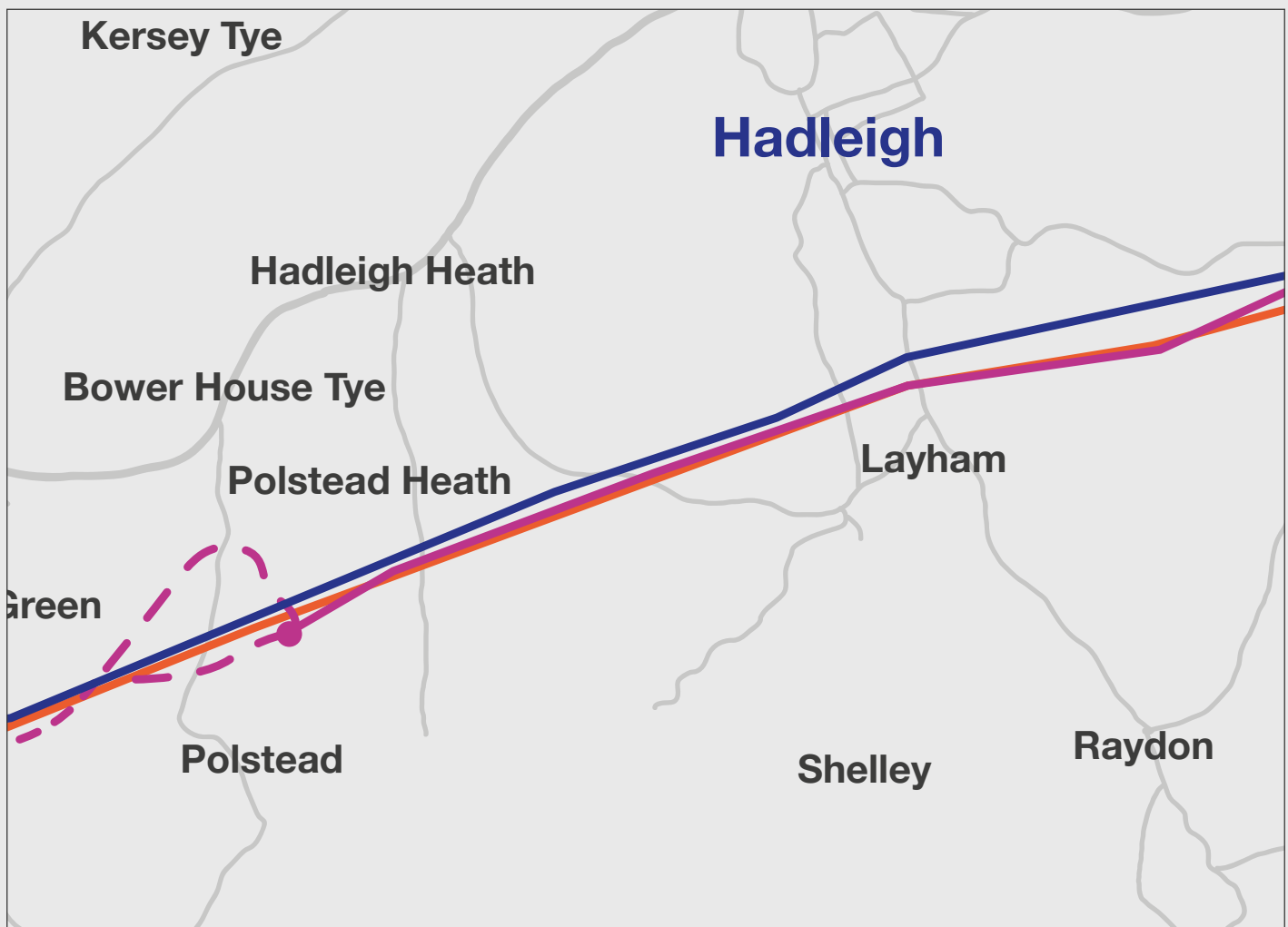
### Our proposals

We would build a new overhead line in this section.

The alignment would pass to the south of Kate's Hill and follow the alignment of the existing 132 kV overhead line. The line would deviate directly to the south of Pipkin Lodge to the east of Benton Street. The pylons would be screened by trees in views from Benton Street, approaching from the Layham direction.

We would remove the existing 132 kV overhead line.

Key	
	proposed 400 kV overhead line
	removal of existing 132 kV overhead line
	existing 400 kV line



# Section D

## Polstead

### Our proposals

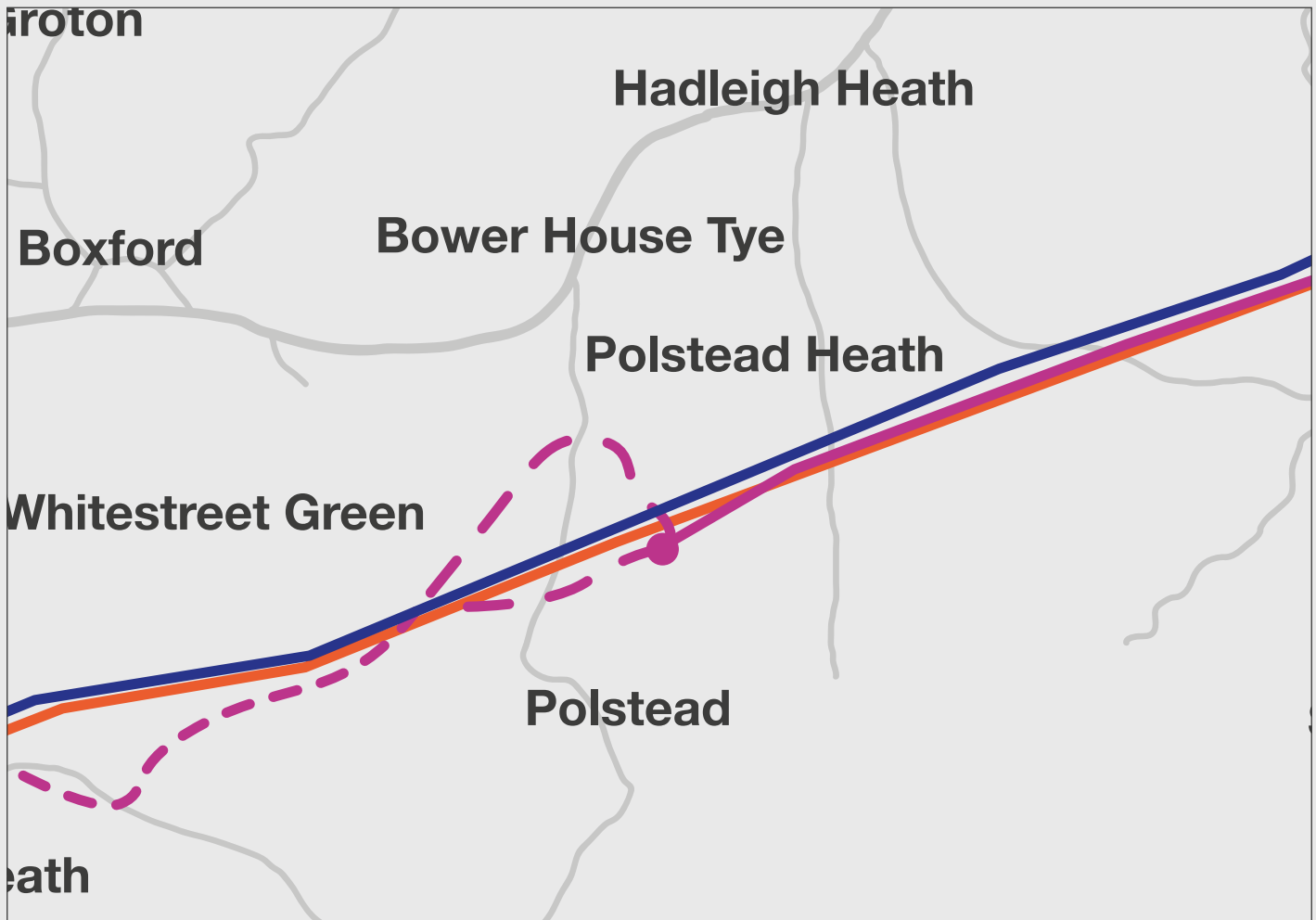
We would build a new overhead line in this section.

The alignment would run to the south of the existing 400 kV power line, roughly following the alignment of the existing 132 kV overhead line.

When approaching the Dedham Vale AONB the proposed line would deviate slightly south west and connect into a cable sealing ends compound near Dollops Wood.

We would remove the existing 132 kV overhead line.

Key	
	proposed 400 kV overhead line
	proposed 400 kV underground cable
	proposed options for a 400 kV underground cable
	proposed 400 kV cable sealing end
	removal of existing 132 kV overhead line
	existing 400 kV line



# Section E

## Dedham Vale AONB

### Our proposals

We would build approximately 4 km underground cables through the Dedham Vale AONB.

At each end of the underground cables section, we would need to build a CSE compound.

In this section we are proposing to build the eastern CSE compound to the south east of Sprotts Farm, east of the boundary of the AONB. This location was identified as it provided an opportunity to screen the compound next to the adjacent Dollops Wood. We would increase screening through additional planting and landscaping.

We are proposing to build the western CSE compound to the immediate west of Boxford Fruit Farm. This location was identified as it offered separation from the AONB to the east and would be next to existing tree planting along the boundary of the orchard, providing further natural screening. This location would also allow the terminal pylon required to transition the line back to overhead to be aligned more closely with the existing 400 kV overhead line.

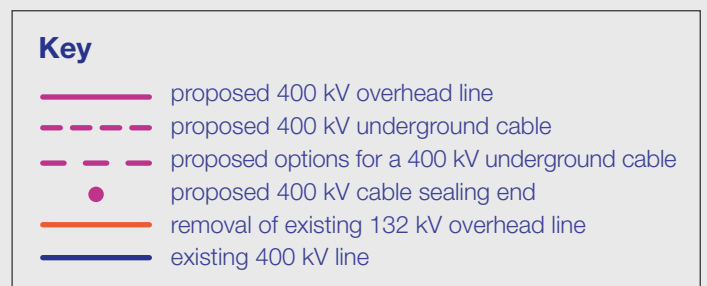
We would remove the existing 132 kV overhead line.

### Considerations

When Dollops Wood was selected as the preferred location for the eastern CSE, consideration was given to using a method called horizontal directional drilling to install underground cables under Dollops Wood. Using directional drilling would avoid digging open trenches and tree clearance to lay the cables, thereby reducing any potential impact on the woodland. Once clear of the woodland, we would install the cables in trenches.

The feasibility of using directional drilling beneath the woodland is being investigated. It is potentially very challenging given the variation in topography.

We are therefore considering an alternative route for the underground cables this area. The alternative underground cable route would travel northwards past Sprotts Farm and back down in a south westerly direction between Broom Hill Wood and Bushy Park Wood, as shown on the map.



# Section F



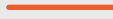

## Leavenheath and Assington

### Our proposals

We would build a new overhead line in this section.

The alignment would continue through Leavenheath to the south of the existing 400 kV line, south of Assington and Sudbury before crossing the B1508 and the railway.

We would remove the existing 132 kV overhead line.

Key	
	proposed 400 kV overhead line
	proposed 400 kV cable sealing end
	removal of existing 132 kV overhead line
	existing 400 kV line





# Section G

## Stour Valley

### Our proposals

We would build a new overhead line roughly parallel to the existing 400 kV overhead line from the east of the area until just south of Sawyers Farm, where it would connect into a CSE compound.

West of Sawyers Farm we would build approximately 4 km of underground cables through the Stour Valley.






At each end of the underground cables section we would need to build a CSE compound.

We are proposing to build the eastern CSE compound to the south of Sawyers Farm. This location was identified as it benefited from existing vegetation on site, which would provide natural screening and minimise the visual impact to the surrounding landscape.

The location for the western CSE was subject to extensive consultation before our preferred site was confirmed as south west of Ansells Farm. This location would benefit from existing mature screening and would be located further away from Alphamstone Complex Local Wildlife Site.

This location also means that the underground cable would be routed further south and we would be able to remove approximately 1 km of the existing 400 kV line between here and Twinstead Tee.

We would remove the existing 132 kV line overhead line up to the 'diamond crossing' to the south west of Sparrows Farm.

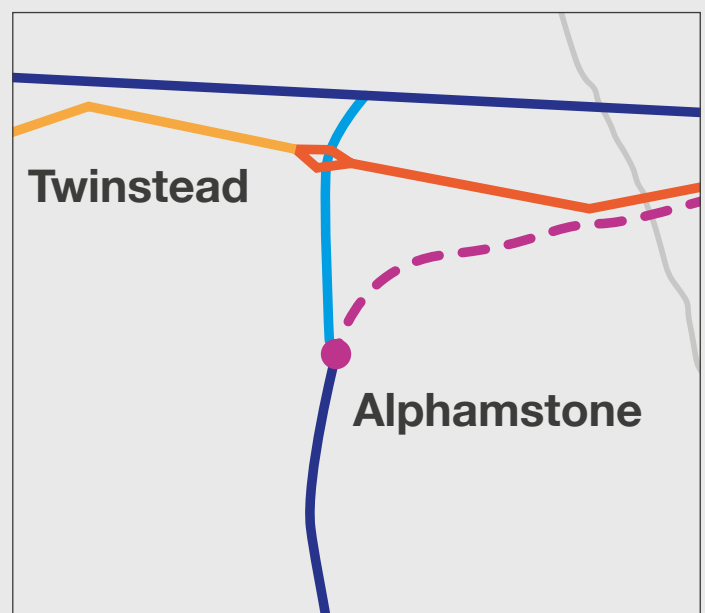
Key	
	proposed 400 kV overhead line
	proposed 400 kV cable sealing end
	removal of existing 132 kV overhead line
	removal of existing 400 kV overhead line
	existing 400 kV line

### Considerations

Although recognised as a landscape of value and with links to famous artists, the Stour Valley (Section G) is not formally designated as an Area of Outstanding Natural Beauty and the review has identified this area as requiring further work to understand whether the additional cost of an underground cables (£118m) in this location is justified. We are therefore seeking views from stakeholders and consumers as to whether the previous decision to underground this section still provides value for money.

In particular, National Grid would like to understand views on:

- the landscape and cultural value of the Stour Valley
- progress on proposals to extend the Dedham Vale AONB boundary in the Stour Valley towards Sudbury
- the construction effects of undergrounding in the Stour Valley (on ecology, archaeology and traffic)
- anything else National Grid should consider.



# Grid supply substation

## **Our proposals include taking down the existing 132 kV power line operated by UK Power Networks (UKPN) between Burstall Bridge and the ‘diamond crossing’ near Twinstead.**

Removing the line would make way for our new 400 kV reinforcement and help reduce its visual impact in the landscape.

The existing 132 kV line is part of the local distribution network and to take it down, we would need to carry out additional work to maintain local electricity supplies.

UKPN looked at a number of options to maintain the security of local electricity supplies and we carried out additional analysis of the options. In February 2013 we confirmed that building a new grid supply substation west of Twinstead would represent the best way forward from a lifetime cost, environmental and socio-economic perspective.

The substation would contain transformers to change the level of voltage from the 400 kV network (owned and operated by National Grid) to the 132 kV needed to be distributed to the rest of UK Power Network’s local network. The substation will also enclose protection isolation, cooling fans, a diesel generator, water tank and switching devices.

We identified a number of potential locations for the new substation and, following public consultation, we confirmed our preferred site as near Butler’s Wood, just off the A131 south of Sudbury. This location would offer screening and direct access from the main road network.

### **Considerations**

We have undertaken further discussions with UKPN and they may now require two transformers at the substation site.

That would require a larger footprint than originally assumed. We carried our further assessment during 2020 to identify whether the larger footprint could be accommodated here. Our assessments have shown that the site could accommodate two transformers if required within the existing woodland screening. We therefore continue to consider this our preferred location for the substation.



# Non-statutory consultation

## March 2021

### **Between 2009 and 2013 we carried out extensive consultation as we developed our proposals.**

We have used these as a baseline and carried out further work to assess whether the 2013 proposals remain appropriate and have back checked our decisions to ensure they continue comply with our key policies and statutory duties.

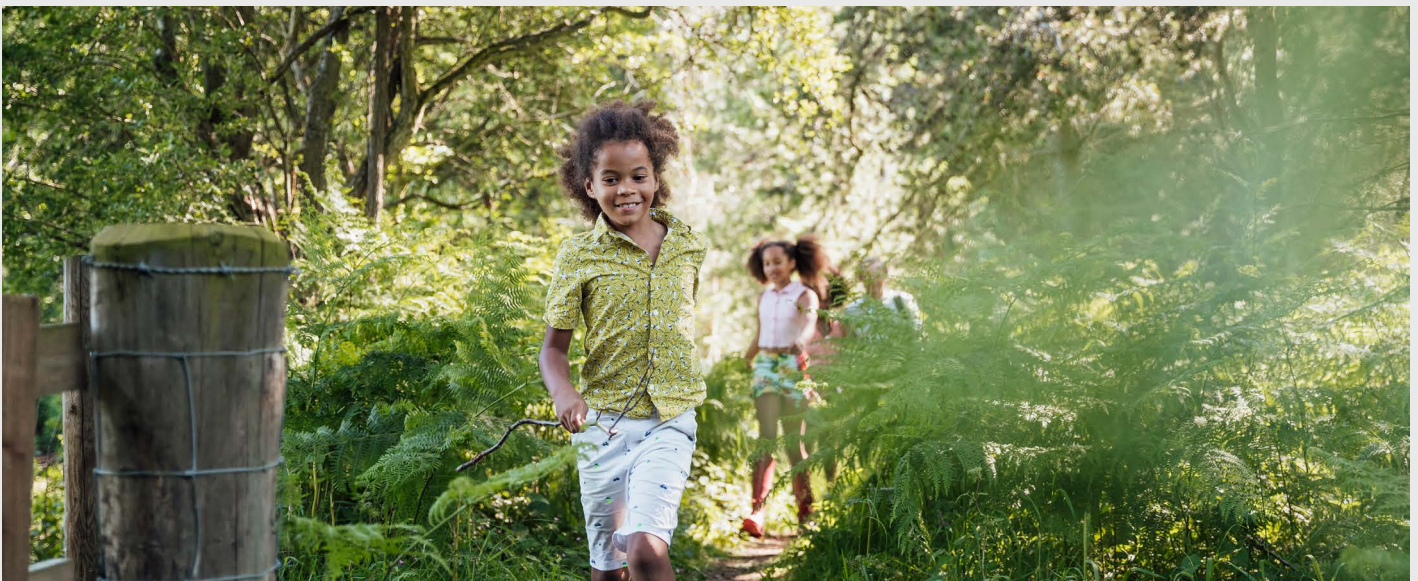
Before developing our proposals further, we are holding a public consultation to seek feedback on the emerging proposals and inviting comment about any further considerations local people might wish us to take into account.

We recognise that not everyone may have participated in our early consultations and that peoples' views may have changed over time.

We would value your thoughts and views to help us refine our plans. We will carefully consider all responses and take the feedback into consideration as we review and refine our plans.

You can find out how to get involved in the consultation in the Have Your Say (Chapter 15) section.

There will be a further opportunity to comment on our proposals when we carry out our final, statutory consultation.



# Next steps

## We will review all responses to our consultation as we continue to develop the designs.

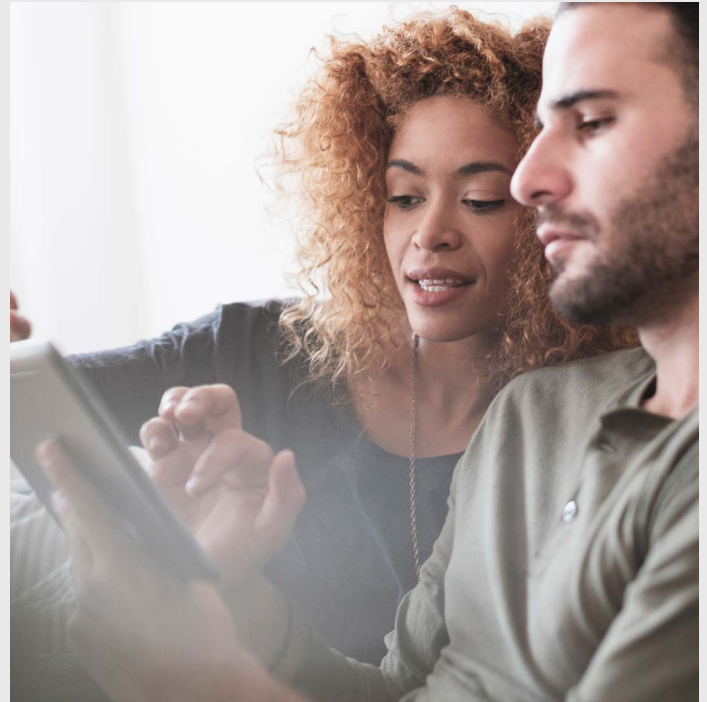
We are undertaking further environmental assessment work and will be carrying out surveys. We will submit a new Environmental Impact Assessment Scoping Report to the Planning Inspectorate this year.

Over the coming months we will be in discussions with landowners and persons with an interest in land. If you feel your land may be affected by these proposals, please contact our land team. Their details can be found on our project website or by calling **01452 889000**.

When our proposals have been developed further, we will hold a more detailed stage of consultation, known as a statutory consultation.

A Preliminary Environmental Information Report (PEIR) will be prepared to accompany the statutory consultation. The **PEIR** represents an interim or preliminary assessment of known and potential significant environmental effects, based upon current detail and understanding of project.

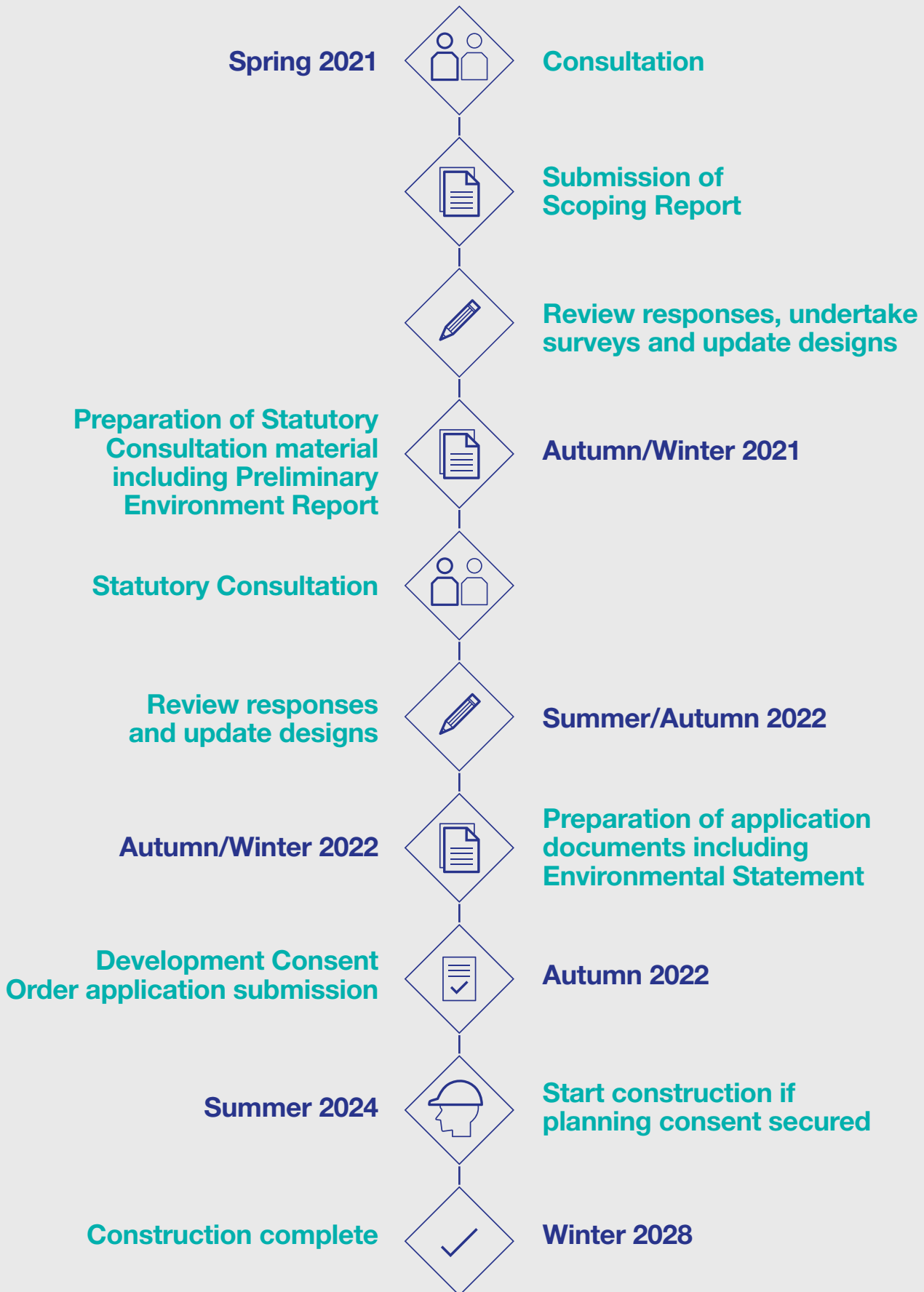
A summary of the overall project timeline can be found on the next page:



### **PEIR:**

A Preliminary Environmental Information Report (PEIR) will be prepared to accompany the statutory consultation.

The PEIR represents an interim or preliminary assessment of known and potential significant environmental effects, based upon the level of current detail and understanding of the project at that time.



Following the statutory consultation we will review the responses and prepare our submission documents, including the Environmental Statement, which will set out the likely effects of the project. Once all documents have been prepared, we will submit an application to the Planning Inspectorate, seeking consent for the reinforcement and associated development. This will include seeking powers of compulsory purchase of land and rights, as necessary.

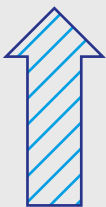
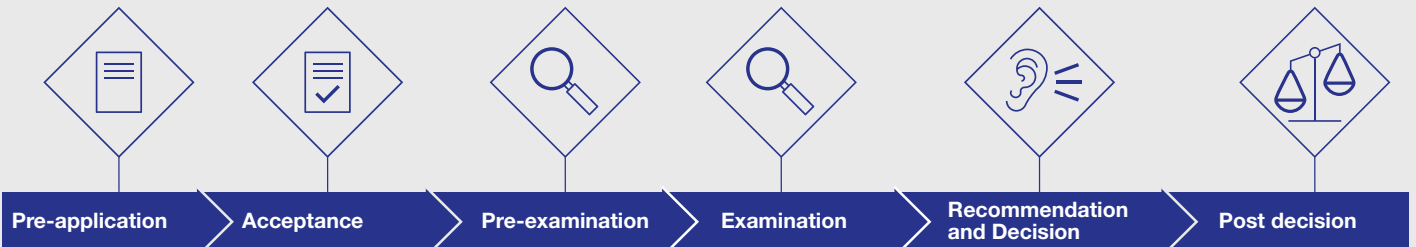
Once submitted, it can take up to 18 months for the Application to be determined. The Planning Inspectorate, on behalf of the Secretary of State, will decide whether the application meets the standards required to be formally accepted for examination. If the application is accepted, the **Examining Authority**, a group of independently appointed inspectors, will have six months to examine the proposal, listening to the views of Interested Parties and other relevant stakeholders through submission of evidence and through public hearings.

The Examining Authority will then prepare a report on the application to the Secretary of State for Business, Energy & Industrial Strategy, including a recommendation, within three months of examination closing. The Secretary of State then has a further three months to decide on whether to grant or refuse development consent.

### **Examining Authority:**

The Planning Inspectorate, on behalf of the Secretary of State, will decide whether the application meets the standards required to be formally accepted for examination. If the application is accepted, the Examining Authority, which is a group of independently appointed inspectors, have six months to examine the proposal, listening to the views of Interested Parties and other relevant stakeholders through submission of evidence and through public hearings.





**We are here**  
Before submitting an application, potential applicants have a statutory duty to carry out consultation on their proposals

The Acceptance stage begins when an applicant submits an application for development consent to the Planning Inspectorate.

There follows a period of up to 28 days (excluding the date of receipt of the application) for the Planning Inspectorate, on behalf of the Secretary of State, to decide whether or not the application meets the standards required to be accepted for examination.

At this stage, the public will be able to register with the Planning Inspectorate to become an Interested Party by making a Relevant Representation.

The Planning Inspectorate has up to six months to carry out the examination. During this stage Interested Parties who have registered by making a Relevant Representation are invited to provide more details of their views in writing.

The Planning Inspectorate must prepare a report on the application to the relevant Secretary of State, including a recommendation, within three months of the close of the six month Examination stage.

The relevant Secretary of State then has a further three months to make the decision on whether to grant or refuse development consent.

Once a decision has been issued by the relevant Secretary of State, there is a sixweek period in which the decision may be challenged in the High Court. This process of legal challenge is known as Judicial Review.

Further details on the development consent process can be found on the Planning Inspectorate website at: <https://infrastructure.planninginspectorate.gov.uk/>

# Have your say

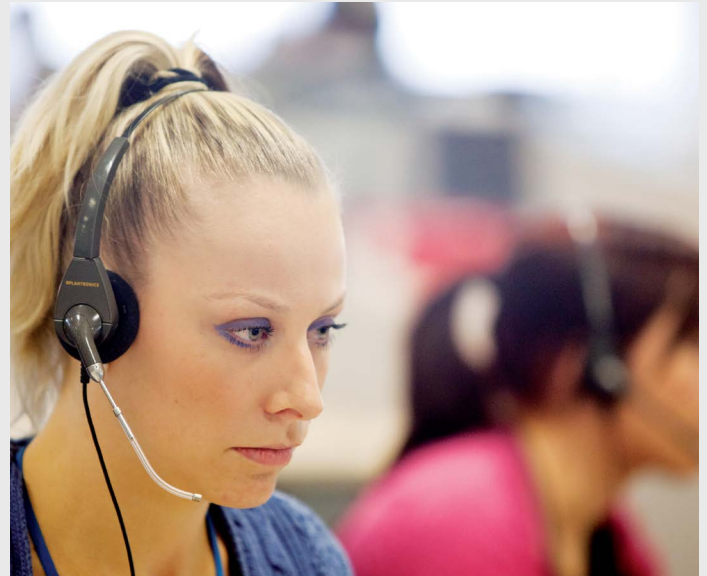
## The aim of our non-statutory consultation is to:

- re-introduce the project and explain our proposals at the time we paused work in 2013
- explain our recent activity and next steps
- hear your views on our current proposals

Our consultation is running until 6 May 2021. 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.

You may access the consultation and provide feedback in a range of ways, including online, over the phone and by sending feedback forms in the post. All the ways you can have your say are listed below:

All information will be readily accessible via the project website [www.nationalgrid.com/bramford-twinstead](http://www.nationalgrid.com/bramford-twinstead) where you can explore the proposals in further detail.



### Team call back

To allow for you to engage in the same detailed discussions that would be permitted at a face-to-face consultation event, we will be hosting team call back surgeries throughout the non-statutory consultation period. You can request a telephone call from a member of the project team if you prefer to ask questions over the phone. Appointments are bookable via the project website, email or freephone information line throughout the week.

Once you have contacted us and booked a slot for your surgery appointment, you will have the opportunity to discuss the proposals and ask any questions directly to our expert team.

### Join our webinars

The project team will be presenting proposals and taking live questions throughout the consultation period through webinars. A total of eight webinars will be held, where our team will present an overview of the proposals and talk through route specific information.

Please visit our website, [www.nationalgrid.com/bramford-twinstead](http://www.nationalgrid.com/bramford-twinstead), to sign-up for a webinar. The dates, times and topics of these sessions are listed right:





Date	Time	Topic
Wednesday 31 March	4pm - 5pm	Overview of the proposals
Tuesday 6 April	7pm - 8pm	Overview of the proposals
Thursday 8 April	11am - 12pm	Overview of the proposals (A British Sign Language interpreter will be in attendance at this session)
Tuesday 13 April	7pm - 8pm	Sections AB and C: Bramford to Hintlesham and Brett Valley
Wednesday 14 April	7pm - 8pm	Sections D and E: Polstead and Dedham Vale AONB
Thursday 15 April	7pm - 8pm	Sections F and G: Leavenheath, Assington and Stour Valley
Thursday 22 April	4pm - 5pm	Overview of the proposals
Wednesday 28 April	4pm - 5pm	Overview of the proposals

A recording of all webinars can then be made available on the project website afterwards for those who require it. This will also allow those who are unable to attend one of the webinars live to still access materials.

### Join our live chats

If you prefer to communicate via text, we are also holding two 'live chat' sessions on the project website during the non-statutory consultation period. These sessions, each two hours in duration, allow members of the public to speak in one-on-one text conversations with the project team through a chat window on the project website.

To join a project live chat, just visit our website during one of the times listed below:

Date	Time
Friday 9 April	2pm - 4pm
Monday 19 April	6pm - 8pm

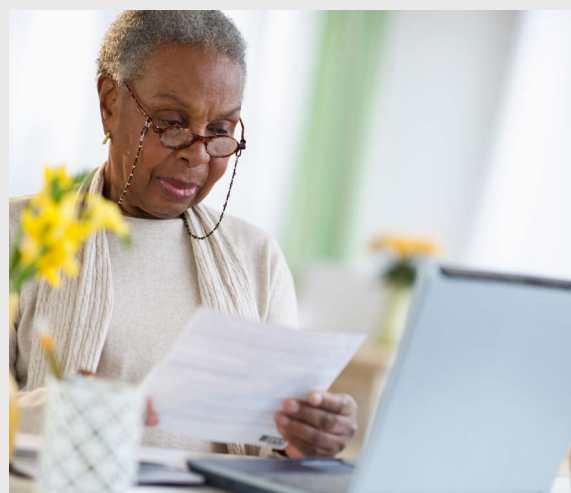
### Online feedback form

We want to make providing feedback on our proposals as easy as possible. The website provides an online feedback form for you to fill in.

### Postal feedback form

We want to ensure the whole community has the opportunity to respond to the consultation, including those who do not have access to the internet.

For anyone who does not have access to our online forms, printed copies of the feedback forms can be requested via our telephone information line. A paper copy of the feedback form and a freepost envelope will then be posted out to you, so you can send your feedback to us free of charge.



# Find out more

**You can also contact us by:**

[contact@bramford-tinstead.nationalgrid.com](mailto:contact@bramford-tinstead.nationalgrid.com)

Freephone: 0808 196 1515

**Who to contact if you are a landowner or person with interest in land:**

If you are a landowner and want to talk to our lands team please call **01452 889000** or email:

[bramford-tinstead@brutonknowles.co.uk](mailto:bramford-tinstead@brutonknowles.co.uk)

Alternatively, you can find out more information about land interests by visiting our [www.nationalgrid.com](http://www.nationalgrid.com).

**Who to contact for a media enquiry:**

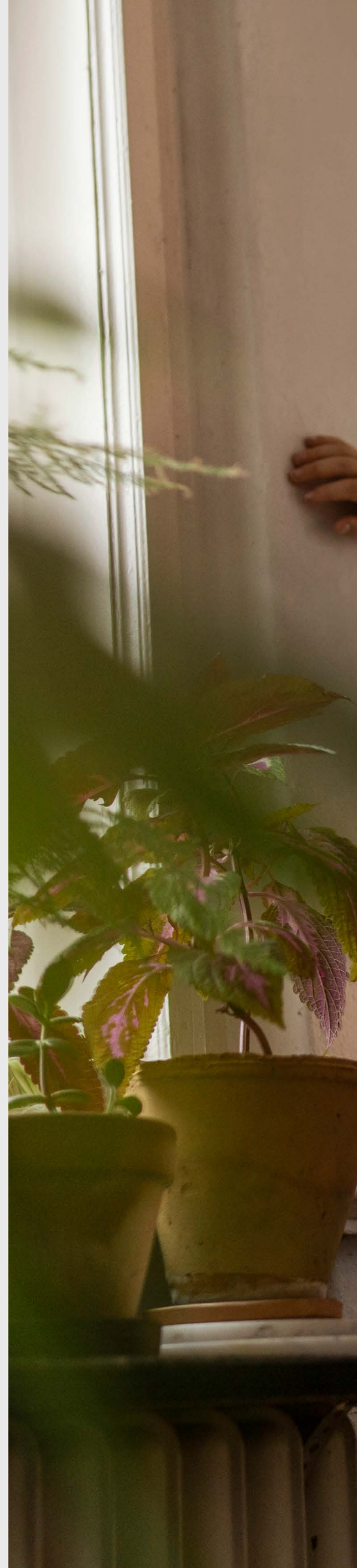
If you are a member of the media and wish to contact the National Grid team, please call **0800 377 7347**

(24 hour) or find our Press Contacts here [www.nationalgrid.com/media-centre/contacts](http://www.nationalgrid.com/media-centre/contacts)

All information will be readily accessible via the project website [www.nationalgrid.com/bramford-tinstead](http://www.nationalgrid.com/bramford-tinstead) where you can explore the proposals in further detail.

**Who to contact if you would like information or documents in an alternative format?**

We are committed to making project information accessible to all users. If you need any information or documents in an alternative format such as large print, Braille or audio tape, get in touch using the above contact details.





National Grid plc  
National Grid House  
Warwick Technology Park  
Gallows Hill  
Warwick CV34 6DA  
United Kingdom

**[nationalgrid.com](https://www.nationalgrid.com)**