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# Bramford to Twinstead Reinforcement

Volume 6: Environmental Information

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Effects Assessment

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# 1. Introduction

## 1.1 Overview

1.1.1 This appendix presents the results of the inter-project cumulative effects assessment (CEA) for the project. The inter-project CEA follows the methodology outlined in Environmental Statement (ES) Chapter 15: CEA (**application document 6.2.15**). The CEA assumes that the good practice measures outlined in the Code of Construction Practice (CoCP) (**application document 7.5.1**) and additional mitigation measures outlined within each of the ES topic chapters are in place before the assessment takes place.

## 1.2 Zone of Influence

1.2.1 As noted in ES Chapter 15: CEA (**application document 6.2.15**) a zone of influence (ZOI) has been established for each environmental aspect. The ZOI is the defined geographic area within which potential environmental receptors are located. The assessment has been based on pathways between receptors and potential impacts and effects, as described in Chapters 2 to 4 of this appendix. In addition to this, a maximum ZOI has been developed for each environmental aspect using professional judgement, a reasonable worst case and knowledge of effects experienced on similar developments. This maximum ZOI has been used to determine the developments which are taken forward to the shortlist for assessment and to help focus the assessment to those other developments that are more likely to result in significant inter-project cumulative effects in combination with the project. These maximum ZOI are listed in Table 1.1.

Table 1.1 – ZOI for Environmental Aspects

Environmental Aspect*	Maximum ZOI for Each Aspect
Landscape/visual and setting of heritage assets; traffic and transport.	10km**
Biodiversity; socio-economics, amenity (including recreation and tourism).	1km
Surface water; hydrogeology; noise and vibration.	0.5km
Contaminated land; air quality.	<0.25km

\*Tree loss is covered as part of the landscape and visual assessment, in terms of the visual screening element and the contribution that trees make to the landscape. Trees are also covered within biodiversity as part of providing a habitat function.

\*\*Note: The 10km ZOI excludes significant urban areas, including the Ipswich Borough Council boundary (2.8km from the Order Limits at its closest point), and south of the A12 within the Colchester Borough Council boundary (7.3km from the Order Limits at its closest point). This was considered reasonable as existing development, including the A12 and the A14, would be likely to obscure views of the overhead line (including pylons) from these locations at this distance.

1.2.2 For the assessment of landscape and visual impacts and the setting of heritage assets, a study area of 10km has currently been assumed for the ZOI. This is based on a 5km study area for landscape and visual, beyond which the project is likely to be barely perceptible and unlikely to give rise to significant effects (see ES Chapter 6: Landscape and Visual (**application document 6.2.6**) for further details). A 10km ZOI allows for the cumulative effects to be considered with other development that potentially includes pylons or other tall structures. Therefore, it is not that the project itself could cause an effect on a development over 5km away, but that other development 5km from the Order Limits could be affected by the project and a large or tall development 5km in the other direction. It is assumed that this reinforcement would operate at least 400kV in a similar way to the majority of the rest of the transmission network. For the purposes of this report, the new overhead line is referenced as 'proposed 400kV overhead line' to differentiate it from the existing 400kV overhead line and the UK Power Networks (UKPN) owned 132kV overhead line.

1.2.3 The ZOI for traffic and transport is based on the proposed construction routes, which are shown on ES Figure 12.1: Traffic and Transport Study area (**application document 6.4**). This shows that construction traffic is likely to be routed on roads to the south and east of the project, as construction traffic seeks to join the A12 and the A14, which form the extent of the traffic and transport study area. The Transport Assessment (**application document 5.7**) uses typical growth factors for development provided by the Department for Transport (DfT) (e.g. TEMPro). This has been used to collate information for traffic growth from most other developments from their operational phase. The assumptions behind the DfT data have been reviewed to identify which major developments are already factored into their growth calculations as a reasonable worse case in addition to the assessment presented in this appendix.

1.2.4 Socio-economics considers the impacts on bedspace between the project and other developments and has been considered at a wider scale for this reason. No other likely significant effects have been identified in relation to socio-economics. Recreation and tourism are considered as part of a wider topic on amenity, which encompasses the enjoyment of the areas by people, whether these are local residents, day visitors or tourists.

1.2.5 The remaining aspects have a maximum ZOI of 1km or less based on the potential for likely significant effects from the project and its interactions with other proposed developments. In the context of this project, it is unlikely that other developments further away than 1km could contribute to significant cumulative effects, due to the area over which effects would be dispersed.

1.2.6 For each of the proposed developments, only those environmental aspects whose ZOI overlaps with the project are listed in the assessments presented in Tables 2.1 to 4.1. Where other developments are located outside of the ZOI of an environmental aspect, it is considered that there is no potential for cumulative effects related to that environmental aspect.

## 2. Inter-Project CEA for Nationally Significant Infrastructure Projects

2.1.1 The CEA for Nationally Significant Infrastructure Projects (NSIP) that were progressed to Stage 3 of the CEA in ES Appendix 15.4: Shortlist of Other Developments (**application document 6.3.15.4**) is presented in Table 2.1. The information used for the CEA is the publicly available data held on the Planning Inspectorate website (accessed February 2023).

Table 2.1 – Inter-Project CEA for NSIP

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
<b>ID DCO-001: East Anglia Three Limited, East Anglia THREE Offshore Windfarm (DCO reference EN010056)</b>			
<b>Description:</b> Onshore development component (construction of an onshore substation at Bramford and construction of a below ground cable route to connect the windfarm to the onshore substation). The project involves the construction and operation of up to 100 wind turbine generators with associated onshore and offshore development. Offshore approx. 69km from Port of Lowestoft.			
<b>Distance from Bramford to Twinstead Reinforcement Order Limits:</b> Within the Order Limits (adjacent to Bramford Substation).			
<b>Temporal overlap:</b> Construction of the onshore converter station at Bramford started in August 2022. The developer's ES (Scottish Power Renewables, 2015) outlines two potential programme scenarios: Single Phase and Two Phased. Under the Single Phase scenario construction of the onshore converter station would take approximately 55 weeks; under the Two Phased scenario construction would take approximately 123 weeks (not continuous). It has been assumed that the Two Phased scenario has been adopted as a worst-case scenario. Following construction of the onshore converter station works would take place to construct the below ground cable route to connect to the new substation at Bramford. Under the Single Phase scenario construction of the onshore below ground cable route would take approximately 29 weeks; under the Two Phased scenario construction would take approximately 31 months (not continuous). Therefore, there would be a temporal overlap with Bramford to Twinstead Reinforcement.			
<b>Information used:</b> The summary of the other development assessment is based on the developer's ES (Scottish Power Renewables, 2015) submitted with the application.			
<b>Landscape and Visual</b>	Construction	<p><b>Bramford to Twinstead Reinforcement:</b> The effects of the project on the landscape of the Ancient Plateau Claylands Landscape Character Area (LCA) and on the visual amenity of Bramford community area are assessed as not significant.</p> <p><b>Other Development:</b> The developer's ES (Scottish Power Renewables, 2015) concludes that during the construction phase, significant effects would occur on the landscape of the Ancient Plateau Claylands LCA within a localised area where the existing mature woodland and the Bramford Substation does not provide any screening of the works to construct the converter station. The presence of the East Anglia ONE converter station prevents the influence extending to the south-west.</p> <p>Significant visual amenity effects would arise in respect of receptors to the east and north within the Bramford community area, which includes users of public rights of way (PRoW) and occupants of residential properties. The effect on the physical elements would not be significant owing to the relatively small proportion of the wider physical elements that would be disturbed or removed, the localised extent of the effects, and the reversibility of effects through the reinstatement of vegetation on completion of the construction works.</p> <p>The impacts on all remaining parts of the LCA and on all other landscape and visual receptors during the construction phase would be not significant. This is because embedded mitigation for the proposed East Anglia THREE project assumes the pulling through of cables into ducts already installed as part of East Anglia ONE, which would minimise the effects on both landscape character and visual amenity.</p> <p><b>Cumulative Effects:</b> The combined effects of both the Bramford to Twinstead Reinforcement and the other development would give rise to significant cumulative landscape and visual effects during construction. This is mainly related to there being two construction projects within the landscape, mainly comprising construction of the East Anglia THREE converter station and the proposed 400kV overhead line for the Bramford to Twinstead Reinforcement. The latter would also result in the temporary loss of an area of mitigation planting installed as part of the East Anglia THREE project. This is under a section of overhead line that is being removed and would be reinstated as part of the Bramford to Twinstead Reinforcement reinstatement proposals, as described in Landscape and Ecological Management Plan (LEMP) (<b>application document 7.8</b>).</p>	<b>Significant temporary short-term adverse</b>
	Operation	<p><b>Bramford to Twinstead Reinforcement:</b> The effects of the project on the landscape of the Ancient Plateau Claylands LCA and on the visual amenity of Bramford community area during operation are assessed as not significant.</p> <p><b>Other Development:</b> During operation of East Anglia THREE, the developer's ES (Scottish Power Renewables, 2015) concludes that significant construction effects would gradually diminish as the mitigation planting matures and the converter station would become largely enclosed by a combination of existing and mitigation planting. By year 20 of the 25 year consent, the screening by the mitigation planting would be sufficient to reduce the landscape and visual effects to not significant.</p> <p>The East Anglia THREE substation would occupy a relatively flat plateau landscape, which benefits from the screening effect of mature blocks of woodland to the west, north-west and north-east. The presence of the adjacent Bramford Substation would partially screen the East Anglia THREE converter station in views from the south and, in association with the pylons, establishes energy infrastructure as part of the baseline character.</p>	<b>Significant adverse during year 1, reducing to not significant by year 20</b>

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
		<p>The potential landscape and visual amenity effects of the underground cables during operation are described in the developer's ES as being not significant, as there would be no visible evidence of the constructed components, other than the intermittent, small scale and relatively discreet kiosks, and no further presence of construction works or machinery. It is noted in the developer's ES that there would be residual impacts on visual amenity relating to the time required for vegetation to re-establish.</p> <p><u>Cumulative Effects:</u> The presence of both developments would give rise to significant cumulative landscape and visual effects at year 1 mainly as the proposed screening vegetation would not have matured for either project. These effects would diminish over time so that by year 15/20 they would be not significant.</p>	
<b>Biodiversity</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects on biodiversity during construction.</p> <p><u>Other Development:</u> The other development is expected to have no significant effects on biodiversity during construction.</p> <p><u>Cumulative Effects:</u> No significant cumulative adverse effects are anticipated from biodiversity, as there is only a small overlap in the footprints and vegetation loss is only short term until reinstatement is undertaken at the end of each construction phase.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects on biodiversity during operation as the project is reinstating vegetation and habitats that are lost.</p> <p><u>Other Development:</u> The other development is expected to have no significant adverse effects on biodiversity during operation as it would reinstate vegetation and habitats lost during construction.</p> <p><u>Cumulative Effects:</u> No significant cumulative adverse effects are anticipated from biodiversity as vegetation and habitats would be reinstated.</p>	Not significant
<b>Historic Environment (Setting of Heritage Assets)</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> During construction of the project, there would be temporary negligible adverse effects to the visual setting of six listed buildings to the north and east of Bramford substation: Tye Farmhouse (NHLE 1263018); Bullenhall Farmhouse (NHLE 1033263); Rutters Farmhouse (NHLE 1251604); Rutter's Farm Outhouses (NHLE 1262551); Sycamore House (NHLE 1250920); and Dairy Farmhouse (NHLE 1263016) from construction activity occurring within the setting. However, as this would be temporary and only a short duration at this location, it is assessed as not significant.</p> <p><u>Other Development:</u> The developer's ES (Scottish Power Renewables, 2015) identified that there would be temporary setting effects during construction. These were identified as minor to negligible significance. This assessment encompassed visual and noise and vibration impacts and were the same for the single and two-phased approaches.</p> <p><u>Cumulative Effects:</u> There would be a presence of both developments within the setting of the listed buildings during construction. However, this would be temporary and short duration at this location and therefore no significant cumulative effects are anticipated on the setting of heritage assets.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> During the operational phase of the project, the project would have a neutral effect on six listed buildings (NHLE reference 1263018, 1033263, 1251604, 1262551, 250920 and 1263016) to the north-east of Bramford substation given the placement of the proposed 400kV overhead line in relation to the properties.</p> <p><u>Other Development:</u> The developer's ES (Scottish Power Renewables, 2015) did not identify any adverse effects from the project on the setting of built heritage with the exception of one property (Figeon's Farmhouse) which would suffer a minor adverse effect from the presence of the extended substation.</p> <p><u>Cumulative Effects:</u> There is no cumulative visual effect anticipated during operation and no likely significant cumulative adverse effects are anticipated on the setting of heritage assets.</p>	Not significant
<b>Surface Water</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is located in the catchment of Belstead Brook. Taking into account good practice measures outlined in the CoCP the project would not have a significant effect on surface water receptors during construction.</p> <p><u>Other Development:</u> The other development is also located in the catchment of Belstead Brook. The developer's ES (Scottish Power Renewables, 2015) identified that there would be no impact to surface water receptors for the onshore cable route and substation after mitigation.</p> <p><u>Cumulative Effects:</u> Both the Bramford to Twinstead Reinforcement and the other development are in the Belstead Brook catchment but effects would be managed through standard good practice measures. Therefore, no likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on water during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Hydrogeology</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Significant effects on hydrogeology are not anticipated during construction of the project.</p> <p><u>Other Development:</u> Significant effects on groundwater during construction were not identified in the developer's ES (Scottish Power Renewables, 2015).</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on hydrogeology during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Contaminated Land</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> Significant effects on sensitive receptors from contaminated land are not anticipated during construction of the project, following the implementation of the good practice measures in the CoCP. <u>Other Development:</u> There is potential that East Anglia THREE could be constructed at a similar time as the project, and a risk that the works could mobilise existing contamination and create preferential pathways for any contamination at the Bramford Substation. However, the developer's ES chapter (Scottish Power Renewables, 2015) does not identify any significant effects in relation to contaminated land. <u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on contaminated land during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Traffic and Transport</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN is considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours. The peak month for the construction phase of the project is August 2025, when construction traffic (including staff workforce numbers) would be the highest. <u>Other Development:</u> Severance, Pedestrian Amenity has been assessed through the application of Trip End Model Presentation Program (TEMPro) growth factors to derive the baseline traffic flows. For the effects of Driver Delay Adastral Park, Garden Suburb, Paper Mill site and Wood Lane housing development. The East Anglia ONE DCO application contained an assessment of the traffic impacts associated with the personnel travelling to a Base Port to be transferred offshore for construction and ongoing operational activities. The assessment of these developments concluded that all impacts would be either minor adverse or negligible. <u>Cumulative Effects:</u> The potential for an overlap in construction traffic is limited. The potential areas of intersection are limited to the north of the B1113 and Bullen Lane, which provide access to Bramford Substation. No likely significant cumulative adverse effects are anticipated.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Air Quality</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project is predicted to produce negligible fugitive dust and plant emissions during construction. The project would not have a significant effect on air quality during construction following the implementation of the good practice measures in the CoCP. <u>Other Development:</u> The developer's ES (Scottish Power Renewables, 2015) concluded that there was a high risk of dust impact from earthworks on dust soiling, however embedded mitigation was expected to reduce this. Emissions from construction vehicles were also assessed and judged to be negligible. <u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the Bramford to Twinstead Reinforcement is predicted to produce negligible fugitive dust and plant emissions, therefore there is no potential for a cumulative effect.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate air quality effects during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Noise and Vibration</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects during construction at receptors at this location. <u>Other Development:</u> The developer's ES (Scottish Power Renewables, 2015) concludes that there would be negligible residual impacts on residential receptors during construction (up to minor adverse impacts from off-site construction traffic noise). <u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated given the distance between works and sensitive receptors.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate noise during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Socio-economics</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project is considered unlikely to have a significant effect on socio-economics receptors during construction. Construction workforce numbers for the project are estimated at around 350 workers at peak construction (Q3 2025), with an average of around 180 workers on site across the whole of the construction schedule. National Grid expects that approximately 10% of workers would be local. Appendix 15.1: Cumulative Effects Baseline ( <b>application document 6.3.15.1</b> ) shows that there is sufficient bedspace available within the local and wider areas (including Ipswich and Colchester) to accommodate construction workers for the project.	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
		<p><u>Other Development:</u> No significant adverse effects on socio-economics receptors were identified in the developer's ES (Scottish Power Renewables, 2015). Under a Single Phase build (worst case) the total number of construction employees required at peak periods of activity in any one section of the onshore cable installation has been predicted at up to 50. The overall maximum number of personnel required along the entire onshore cable route in any one month is calculated as 160 with an average of 94 per month. For construction of the onshore converter station it is stated that the peak number of workers would be up to 75, with an average of 44 construction workers over the construction duration.</p> <p><u>Cumulative Effects:</u> It is considered that as the number of workers required for both projects is relatively small, and given the number of bedspaces available within the region, there would not be a significant cumulative effect on available bedspaces.</p>	
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement does not require any permanent relocation of staff or additional workforce during operation. Therefore, there would be no potential for cumulative effects with the other developments during operation.</p>	Not significant
<b>Amenity (including recreation and tourism)</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project will require short term closures and diversions of PRoW during construction around Bramford Substation. These would be short term (during specific activities within construction). In addition, there would be some temporary loss of amenity value during construction due to the presence of machinery and noise, dust and visual intrusion associated with a construction site. This would be short terms and the effects reduced by the good practice measures in the CoCP and by placing signs around the area when disruption is likely to occur. No significant effects are anticipated.</p> <p><u>Other Development:</u> No significant adverse effects on recreation and tourism receptors were identified in the developer's ES (Scottish Power Renewables, 2015).</p> <p><u>Cumulative Effects:</u> It is considered that any impacts during construction on amenity would be localised, short-term and temporary, and therefore it is unlikely that there would be significant cumulative effects.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is unlikely to have any effects on amenity during operation once vegetation matures (see Landscape and Visual above). Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant



**ID DCO-002: National Highways, A12 Chelmsford to A120 Widening Scheme (DCO reference TR010060)**

**Description:** Widening of the A12 between Junctions 19 and 25 (Essex) to three lanes throughout in both directions and associated junction works.

**Distance from Bramford to Twinstead Reinforcement Order Limits:** 12.0km.

**Temporal overlap:** Subject to Development Consent Order (DCO) grant, construction is anticipated to take place between 2024-2027, with the scheme opening in 2027. There would be a three-year construction overlap with the Bramford to Twinstead Reinforcement.

**Information used:** The summary of the other development assessment is based on the developer's ES submitted with the application (National Highways, 2022).

Aspect	Phase	Assessment	Potential for Significant Cumulative Effect
<b>Traffic and Transport (strategic and local road network)</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours.</p> <p><u>Other Development:</u> The overall level of growth in car trips from 2019 to the three future year scenarios has been taken from the most recent DfT National Trip End Model (NTEM) forecasts, published in March 2017. Adjustments to the location of future car trips were made by including certain planned housing developments, and other developments such as employment, retail and leisure sites. No impact assessment for traffic and transport is available.</p> <p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is expected to have negligible impacts upon the operation of the local road network (LRN) and strategic road network (SRN) during construction (the percentage increases on the sections of the A12 and A120 assessed would be less than 2% for the total daily construction traffic and 4% for daily heavy goods vehicles (HGV), AM and PM peak periods). Therefore, there would be no potential for cumulative effects with the other development during construction.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Socio-economics</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is considered unlikely to have a significant effect on socio-economics receptors during construction. Construction workforce numbers for the project are estimated at around 350 workers at peak construction (Q3 2025), with an average of around 180 workers on site across the whole of the construction schedule. National Grid expects that approximately 10% of workers would be local. Appendix 15.1: Cumulative Effects Baseline (<b>application document 6.3.15.1</b>) shows that there is sufficient bedspace available within the local and wider areas (including Ipswich and Colchester) to accommodate construction workers for the project.</p> <p><u>Other Development:</u> The developer's ES (National Highways, 2022) states that peak construction of the other development would be during summer 2025. At this time, it is estimated there would be approximately 1,500 construction workers, of whom around 20% (approximately 300 staff) would be local, and 80% (approximately 1,200 staff) would not be local. Of those workers who are not local, it is estimated that 70% (approximately 840 staff) would stay locally, for example in hotels or bed and breakfasts, while 30% (approximately 360 staff) would commute. The developer expects that workers would use the sufficient available bedspace in local towns, and cities such as Chelmsford, Witham, Braintree and Colchester, and some construction activities would require workers on site for a short-term duration of up to three months.</p> <p><u>Cumulative Effects:</u> It is assumed that the majority of the workers on the Bramford to Twinstead Reinforcement would make use of available accommodation in Ipswich as this is closest to the project. This would not overlap with the other development, which assumes bedspace in towns and cities further to the south and east. Both projects have identified that Colchester may provide additional bedspace but as this is a city, there are a number of bedspaces available. Therefore, it is considered that there is sufficient bedspace available at a sub-regional level to accommodate the project and the other development and therefore there would not be a significant cumulative effect on available bedspaces.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement does not require any permanent relocation of staff or additional workforce during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant

**ID DCO-019: National Grid Electricity Transmission, East Anglia GREEN (National Grid codes AENC/ATNC)**

**Description:** New 400kV double circuits in north-east Anglia - Norwich to Bramford (AENC) and Bramford to Tilbury (ATNC), comprising the following principal components:

- A 400kV electricity transmission reinforcement between existing substations - Norwich Main, Bramford and Tilbury comprising installation of approximately 180km of 400kV overhead line, installation of approximately 500-550 steel lattice pylons (steel lattice pylons are on average, approximately 50m in height), and installation of approximately 10km of 400kV underground cables, largely located through the Dedham Vale Area of Outstanding Natural Beauty (AONB);
- Cable sealing end compounds (including permanent access roads);
- A new 400kV substation located on the Tendring Peninsula (including permanent access road) and associated works (including new underground cables) to connect with the 400kV overhead line; and
- Works at Norwich Main Substation, Bramford Substation (see below for further details) and Tilbury Substation.

An extension would be needed within the existing Bramford Substation. The extension would comprise:

- Extension of the existing site compound with use of existing site access arrangements;
- Equipment up to 12.5m in height;
- Mix of impermeable concrete surfaces surrounded by permeable stone chippings; and
- Electrified palisade fence 4m high.

**Distance from Bramford to Twinstead Reinforcement Order Limits:** Within Order Limits at Bramford Substation.

**Temporal overlap:** Subject to DCO grant, construction would take place between early 2027 and 2031, with a two-year overlap with the construction phase of the Bramford to Twinstead Reinforcement construction period.

**Information used:** The summary of the other development assessment is based on Rochdale Envelope type parameters set out in the developer's Scoping Report (National Grid, 2022f) and assumptions from similar projects to judge potential scale of effects in the absence of an ES.

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
<b>Landscape and Visual</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Plateau Claylands, Rolling Valley Farmlands, Plateau Farmlands and Ancient Estate Claylands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011) are assessed as not significant.</p> <p><u>Other Development:</u> The developer's Scoping Report (National Grid, 2022f) explains that the East Anglia GREEN development would require the construction of two additional 400kV overhead lines around Bramford Substation. The Scoping Report does not identify any potentially significant effects. In the absence of detailed assessment information, it is assumed that the construction activities would be similar to those of the project and individually would not give rise to significant landscape effects.</p> <p><u>Cumulative Effects:</u> If constructed at the same time, it is unlikely that the cumulative effects of the two developments on the landscape of the Ancient Plateau Claylands LCA around Bramford Substation would be significant due to the short term and temporary nature of the works at each pylon location. Beyond this distance the works would be too far apart to result in significant cumulative effects. The same would apply to the visual amenity experienced by people living and moving around Bramford and Burstall community areas close to Bramford Substation. If construction at multiple pylon locations is present at the same time, then cumulative effects could arise, but it is unlikely that these would be significant. The cumulative effects on physical landscape elements such as woodland and hedgerows are considered unlikely to be significant owing to the relatively small proportion of the wider elements that would be disturbed or removed, the localised extent of the impacts, and the reversibility of impacts through the reinstatement of vegetation on completion of the construction works.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Plateau Claylands (2b near Hintlesham), Rolling Valley Farmlands, Plateau Farmlands and Ancient Estate Claylands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011) are assessed as not significant (both adverse and beneficial). The effects on the Ancient Plateau Claylands (2a near Bramford Substation) are assessed as significant (adverse) within 1km of the Bramford Substation and not significant for the wider LCA.</p> <p><u>Other Development:</u> The developer's Scoping Report National Grid, 2022f) explains that the East Anglia GREEN development would require the construction of two additional 400kV overhead lines converging on Bramford Substation. In the absence of detailed assessment information, it is assumed that the effects of the two lines individually would be similar to the project and would not be significant beyond 1km of Bramford Substation.</p> <p><u>Cumulative Effects:</u> The cumulative effects of the project and East Anglia GREEN on the landscape could be significant due to the presence of three additional 400kV overhead lines in the landscape. The effects would be greatest close to Bramford Substation where multiple lines are already present, and the new lines would add to the overall influence of high voltage electricity infrastructure. The same would apply to visual amenity, with significant cumulative effects more likely to arise with increasing proximity to Bramford Substation as this is where the three overhead lines are most likely to be intervisible. As the distance from Bramford Substation increases, even if there is intervisibility, either one or more of the developments would be sufficiently distant from the visual receptor not to have a notable influence.</p>	Significant long-term adverse

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
Biodiversity	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects on biodiversity during construction.</p> <p><u>Other Development:</u> The developer's Scoping Report (National Grid, 2022f) states that there would be some temporary localised loss of vegetation and habitats but that this would be reinstated following construction as far as practicable (except for permanent habitat loss which would occur within the footprint of permanent infrastructure, excluding underground cabling). In addition, additional areas of planting and biodiversity net gain (BNG) would be implemented. Disturbance to aquatic and terrestrial species would be managed through existing good practice measures to be set out in the outline CoCP. It is assumed that any effects to protected species would be managed through licences. Significant adverse effects on biodiversity would not be expected from the other development.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative adverse effects are anticipated from biodiversity, as there is only a small overlap in the footprints and vegetation loss is only short term until reinstatement is undertaken at the end of each construction phase.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects on biodiversity during operation as the project is reinstating vegetation and habitats that are lost.</p> <p><u>Other Development:</u> The developer's Scoping Report (National Grid, 2022f) states that vegetation and habitats lost during construction would be reinstated following construction as far as practicable (except for permanent habitat loss which would occur within the footprint of permanent infrastructure, excluding underground cabling). In addition, additional areas of planting and BNG would be implemented.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative adverse effects are anticipated from biodiversity as vegetation and habitats would be reinstated.</p>	Not significant
Historic Environment (Setting of Heritage Assets)	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> During construction of the project, there would be temporary minor adverse effects to the visual setting of listed buildings around Bramford substation: Canes Farmhouse (NHLE 1036949), Burstall Hill Cottages (NHLE 1036950), Half Moon (NHLE 1351619) and Mill Farm (NHLE 1036954), given their inter-visibility with the project. As the adverse effects identified would be temporary and short-term at this location, effects are assessed as not significant.</p> <p><u>Other Development:</u> The developer's Scoping Report (National Grid, 2022f) has proposed to scope in effects on the setting of heritage assets during construction. It is concluded that the construction phase has the potential for adverse impacts to the setting of built heritage from noise, dust and vibration, and also for visual intrusion from construction activity. No level of effect has been presented in the scoping study.</p> <p><u>Cumulative Effects:</u> There would be a presence of both developments within the setting of the listed buildings during construction. However, this would be temporary and short duration at this location and therefore no significant cumulative effects are anticipated on the setting of heritage assets around Bramford Substation.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> During the operational phase of the project, there would be a minor adverse effect on the setting of Canes Farmhouse (NHLE 1036949), Burstall Hill Cottages (NHLE 1036950), Half Moon (NHLE 1351619), Mill Farm (NHLE 1036954) and Church of St Mary (NHLE 136948) given the potential additional visual intrusion.</p> <p><u>Other Development:</u> The developer's Scoping Report (National Grid, 2022f) has proposed to scope in effects on the setting of heritage assets during operation, however the developer proposed to scope out assessment of 'Listed buildings and non-designated historic buildings that are separated from the Project by the Bramford, Norwich Main and Tilbury substations as these structures represent a significant visual impact within the setting of assets that the addition of overhead lines beyond would not create appreciable change'. The Planning Inspectorate, on behalf of the Secretary of State, stated in its Scoping Opinion (Planning Inspectorate, 2022b) that 'Based on this statement and the limited information and justification provided in terms of individual heritage assets, the Inspectorate is not in a position to scope these matters out of the ES at this stage without further consideration of the significance of heritage assets and the contributions made by their setting on a case-by-case basis.' No level of effect has been presented in the scoping study.</p> <p><u>Cumulative Effects:</u> Cumulatively, the projects would not result in significant effects on listed buildings around Bramford Substation given that despite the three new overhead lines, the visual intrusion resulting in these would only be a small addition to those already existing from the substation and overhead lines. The additional overhead lines have the capacity to change the visual and historic setting of properties along Church Hill: Canes Farmhouse (NHLE 1036949), Half Moon (NHLE 1351619) and the Church of St Mary (NHLE 136948). This would amount to a minor adverse effect on the setting of these heritage assets, given the extent to which this area is already affected by the substation and assorted overhead lines. This development would only amount to a minimal addition to what is already there.</p>	Not significant
Surface Water	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is located in the catchment of Belstead Brook. Taking into account good practice measures outlined in the CoCP the project would not have a significant effect on surface water receptors during construction.</p> <p><u>Other Development:</u> The developer's Scoping Report (National Grid, 2022f) has proposed to scope in effects on surface water quality and flood risk during construction. In the absence of assessment information and given the nature of the other development (overhead line) it is assumed that significant effects on surface water receptors are unlikely as these are likely to be managed through good practice measures in the outline CoCP.</p>	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
		<u>Cumulative Effects:</u> Both the Bramford to Twinstead Reinforcement and the other development are in the Belstead Brook catchment but effects are assumed to be managed through standard good practice measures. Therefore, it is considered unlikely that there would be a significant cumulative effect on surface water receptors during construction.	
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on water during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Hydrogeology</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> Significant effects on hydrogeology are not anticipated from the project during construction. <u>Other Development:</u> The developer's Scoping Report (National Grid, 2022f) has proposed to scope in some aspects of groundwater for further assessment. In the absence of assessment information, it is assumed that potential significant effects on hydrogeology during construction would be assessed and mitigated as part of the DCO application, and therefore residual significant effects on hydrogeology are considered unlikely. <u>Cumulative Effects:</u> No likely significant cumulative adverse effects are anticipated.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on hydrogeology during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Contaminated Land</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> Significant effects on sensitive receptors from contaminated land are not anticipated during construction of the project, following the implementation of the good practice measures in the CoCP. <u>Other Development:</u> The developer's Scoping Report (National Grid, 2022f) has proposed to scope in some aspects of contaminated land for further assessment. In the absence of assessment information, it is considered that potential significant effects from contaminated land during construction would be assessed and mitigated as part of the DCO application, and therefore residual significant effects are considered unlikely. <u>Cumulative Effects:</u> No likely significant cumulative adverse effects are anticipated.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on contaminated land during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Traffic and Transport</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours. The peak month for the construction phase of the project is August 2025, when construction traffic (including staff workforce numbers) would be the highest. <u>Other Development:</u> The developer's Scoping Report (National Grid, 2022f) does not provide construction traffic volumes, and states that ' <i>construction vehicle traffic routes (and the study area) would be determined as the design of the Project is developed and would be identified in the ES</i> '. Traffic and transport effects for the construction phase are scoped in for assessment in the ES. <u>Cumulative Effects:</u> Unable to determine potential for adverse cumulative effects as there was not enough information in the developer's documentation to undertake an assessment. However the Bramford to Twinstead Reinforcement peak traffic numbers would be in 2025, up to two years prior to the anticipated start date of East Anglia GREEN and therefore cumulative effects in relation to traffic are likely to be limited.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Air Quality</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project is predicted to produce negligible fugitive dust and plant emissions during construction. The project would not have a significant effect on air quality during construction following the implementation of the good practice measures in the CoCP. <u>Other Development:</u> The developer's Scoping Report (National Grid, 2022f) states that it is proposed to scope out effects related to construction dust and construction generators as no likely significant effects are expected with the implementation of standard measures which would be set out in the outline CoCP. The Planning Inspectorate, on behalf of the Secretary of State, agreed in its Scoping Opinion (Planning Inspectorate, 2022b) that significant effects on construction dust are unlikely and that this matter can be scoped out of the ES. However, with regard to effects from construction generators, ' <i>the Inspectorate is unable to exclude a likely significant effect and does not agree that this matter can be scoped out of the ES</i> '. <u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the Bramford to Twinstead Reinforcement is predicted to produce negligible fugitive dust and plant emissions, therefore there is no potential for a cumulative effect.	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate air quality effects during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
Noise and Vibration	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects during construction at receptors at this location. <u>Other Development:</u> The developer's Scoping Report (National Grid, 2022f) states that it is proposed to scope in effects from noise and vibration during construction. In the absence of assessment information, it is assumed that the effects from the other development would be similar to other overhead line projects, and standard good practice measures would be applied. Significant adverse effects would also not be expected due to the distance between works and the receptors, and the nature of the other development. <u>Cumulative Effects:</u> No likely significant cumulative adverse effects are anticipated.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate noise during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
Socio-economics	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project is considered unlikely to have a significant effect on socio-economics receptors during construction. Construction workforce numbers for the project are estimated at around 350 workers at peak construction (Q3 2025), with an average of around 180 workers on site across the whole of the construction schedule. National Grid expects that approximately 10% of workers would be local. Appendix 15.1: Cumulative Effects Baseline ( <b>application document 6.3.15.1</b> ) shows that there is sufficient bedspace available within the local and wider areas (including Ipswich and Colchester) to accommodate construction workers for the project. <u>Other Development:</u> The developer's Scoping Report (National Grid, 2022f) states that it is proposed to scope in effects on the local economy and employment, potential sterilization of new areas for future development, and effects on community facilities during construction. During construction of the other development there could be temporary disruption to some businesses. There could also be pressure on local visitor accommodation due to construction workforce numbers. However, due to the rolling nature of the linear works, construction activities in any particular area are likely to be short-term and localised. The Scoping Report does not contain any details regarding anticipated workforce numbers. <u>Cumulative Effects:</u> It is considered unlikely that there would be a significant cumulative effect during construction on available bedspace as the other development is anticipated to occur after the likely peak working on the Bramford to Twinstead Reinforcement. It is also assumed that workers for the other development would potentially be based in accommodation across a wide area (between Norwich and Tilbury), with only a short duration of working around Bramford Substation. Therefore, it is assumed that there are unlikely to be significant cumulative effects with the other development during construction.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement does not require any permanent relocation of staff or additional workforce during operation. Therefore, there would be no potential for cumulative effects with the other developments during operation.	Not significant
Amenity (including recreation and tourism)	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project will require short term closures and diversions of PRow during construction around Bramford Substation. These would be short term (during specific activities within construction). In addition, there would be some temporary loss of amenity value during construction due to the presence of machinery and noise, dust and visual intrusion associated with a construction site. This would be short terms and the effects reduced by the good practice measures in the CoCP and by placing signs around the area when disruption is likely to occur. No significant effects are anticipated. <u>Other Development:</u> The developer's Scoping Report (National Grid, 2022f) concludes that there is potential for some effects on amenity and these matters are proposed to be scoped in for assessment in the developer's intra-project CEA in the ES. During construction of the other development there could be temporary disruption to some community facilities and tourism and recreational features. However, due to the rolling nature of the linear works, construction activities in any particular area are likely to be short-term and localised. <u>Cumulative Effects:</u> It is considered that there could be cumulative effects to amenity around Bramford Substation during construction due to the presence of two construction projects creating noise, dust and visual intrusion. The effects would be reduced by the CoCP and standard good practice measures employed on each project. It is therefore assumed that it is unlikely that there would be a significant cumulative effect during construction due to the rolling nature of the linear works and short-term and localised construction activities for the two developments.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is unlikely to have any effects on amenity during operation once vegetation matures. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant

### 3. Inter-Project CEA for Planning Applications

3.1.1 The CEA for planning applications that were progressed to Stage 3 of the CEA in ES Appendix 15.4: Shortlist of Other Developments (**application document 6.3.15.4**) is presented in Table 3.1. The information used for the CEA is the publicly available data held for each development on the planning portals of the relevant planning authorities' websites (accessed 2023).

Table 3.1 – Inter-Project CEA for Planning Applications

Aspects for CEA Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect	
<b>ID APP-BMSDC-003: Bramford Green Limited, Bramford Solar Farm and Battery Storage Facility (application reference DC/20/05895)</b>			
<b>Description:</b> Installation of renewable led energy generating station comprising ground-mounted photovoltaic solar arrays and battery-based electricity storage containers together with substation, inverter/transformer stations, site accesses, internal access tracks, security measures, access gates, other ancillary infrastructure, landscaping and biodiversity enhancements including Nature Areas. Note that planning application DC/21/00060 is the same as DC/20/05895 and therefore these two planning applications are treated as one development.			
<b>Distance from Bramford to Twinstead Reinforcement Order Limits:</b> Within Order Limits west of Bramford Substation			
<b>Temporal overlap:</b> The developer has not yet obtained planning permission. The developer's website (Enso Energy, 2023) states that construction is expected to start in summer 2024. The developer has not provided indicative programme phasing in the ES (Enso Energy, 2022a), however it is stated that construction would take approximately 40 weeks (9 months). For the purposes of the CEA it has been assumed that planning permission is granted and there is an overlap in construction of up to nine months.			
<b>Information used:</b> The summary of the other development assessment is based on the developer's ES (Enso Energy, 2022a) and other documentation submitted with the application.			
<b>Landscape and Visual</b>	Construction	<p><b>Bramford to Twinstead Reinforcement:</b> There is a slight overlap between the red line boundary of the other development and the Order Limits of the project close to Bramford Substation. The effects of the project on the landscape of the Ancient Plateau Claylands and Rolling Valley Farmlands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), and on the visual amenity of the Bramford, Little Blakenham and Somersham community areas during construction are assessed as not significant.</p> <p><b>Other Development:</b> The developer's ES (Enso Energy, 2022a) does not assess construction effects on the wider landscape or views, concluding that the construction effects would only apply to the site.</p> <p><b>Cumulative Effects:</b> Given that construction of the solar farm does not require high-level activities and has relatively low levels of site traffic, it is unlikely that the combined effects of both developments during construction would result in significant cumulative landscape or visual amenity effects.</p>	Not significant
	Operation	<p><b>Bramford to Twinstead Reinforcement:</b> The effects of the project on the landscape of the Ancient Plateau Claylands and Rolling Valley Farmlands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), and on the Bramford, Little Blakenham and Somersham community areas are assessed as not significant during operation.</p> <p><b>Other Development:</b> The developer's ES (Enso Energy, 2022a) concludes that the effects on the landscape character would be greatest within the site and its immediate context (moderate adverse) where the present land use would change from an agricultural landscape to a solar farm development. Effects would reduce with distance from the site, as the development would be increasingly screened by a combination of vegetation, landform and buildings in the intervening landscape. It concludes that the effects on landscape character would not be significant. The ES also notes that the greatest effects on visual receptors would be from the PRoW network close to the site, concluding that the adverse effects would be of major-moderate significance but noting that these effects would reduce to not significant/neutral over time with the maturing of new planting. With increasing distance from the site, visual effects would rapidly reduce to not significant due to the screening afforded by the intervening landform, vegetation and buildings.</p> <p><b>Cumulative Effects:</b> The combined effects of the project and the solar farm during operation would not result in significant landscape or visual effects because the two projects are very different in character and appearance, and the low-level nature of the solar farm infrastructure combined with the intervening hedgerows precludes intervisibility.</p>	Not significant
<b>Biodiversity</b>	Construction	<p><b>Bramford to Twinstead Reinforcement:</b> The project is expected to have no significant adverse effects on biodiversity during construction.</p> <p><b>Other Development:</b> The developer's ES (Enso Energy, 2022a) concludes that there would be no to negligible adverse effects on habitats and species during construction with enhancement through the Landscape and Ecological Management Plan (LEMP).</p> <p><b>Cumulative Effects:</b> No likely significant cumulative effects are anticipated from biodiversity, as there is only a small overlap in the footprints and vegetation loss is only short term until reinstatement is undertaken at the end of each construction phase.</p>	Not significant
	Operation	<p><b>Bramford to Twinstead Reinforcement:</b> The project is expected to have no significant adverse effects on biodiversity during operation as the project is reinstating vegetation and habitats that are lost.</p>	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
		<p><u>Other Development:</u> The developer's ES (Enso Energy, 2022a) concludes that there would be significant beneficial effects on habitats and species during operation through the implementation of measures in the LEMP.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated from biodiversity as vegetation and habitats would be reinstated.</p>	
<b>Historic Environment (Setting of Heritage Assets)</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project will have a minor adverse effect on the setting of listed buildings.</p> <p><u>Other Development:</u> The developer's ES (Enso Energy, 2022a) states that the 'embedded mitigation as a result of the proposed layout means that there are no impacts on designated heritage assets that require further mitigation'.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated given the nature of the local setting of built heritage assets.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> Burstall Hall Cottages (1036950) and Canes Farmhouse (1036949) will undergo a setting change from the project amounting to a minor adverse effect.</p> <p><u>Other Development:</u> The developer's ES (Enso Energy, 2022a) states that the 'embedded mitigation as a result of the proposed layout means that there are no impacts on designated heritage assets that require further mitigation'.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated given the limited visual intrusion presented by the proposals on the assets in question.</p>	Not significant
<b>Surface Water</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is located in the catchment of Belstead Brook. Taking into account good practice measures outlined in the CoCP the project would not have a significant effect on surface water receptors during construction.</p> <p><u>Other Development:</u> Surface water was scoped out of the developer's ES (Enso Energy, 2022a), indicating that significant effects on surface water receptors were considered unlikely.</p> <p><u>Cumulative Effects:</u> Both the Bramford to Twinstead Reinforcement and the other development are in the Belstead Brook catchment but effects would be managed through standard good practice measures. Therefore, no likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on water during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Hydrogeology</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Significant effects on hydrogeology are not anticipated during construction of the project.</p> <p><u>Other Development:</u> This aspect was scoped out of the developer's ES (Enso Energy, 2022a), indicating that significant effects on hydrogeology receptors are considered unlikely.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on hydrogeology during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Contaminated Land</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Significant effects on sensitive receptors from contaminated land are not anticipated during construction of the project, following the implementation of the good practice measures in the CoCP.</p> <p><u>Other Development:</u> This aspect was scoped out of the developer's ES (Enso Energy, 2022a) indicating significant effects are considered unlikely.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on contaminated land during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Traffic and Transport</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours.</p> <p><u>Other Development:</u> No traffic and transport assessment is provided in the developer's ES (Enso Energy, 2022a).</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The proposed development is included within the TEMPro growth factor, therefore to avoid duplication it is not assessed here.</p>	N/A

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
Air Quality	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is predicted to produce negligible fugitive dust and plant emissions during construction. The project would not have a significant effect on air quality during construction following the implementation of the good practice measures in the CoCP.</p> <p><u>Other Development:</u> This aspect was scoped out of the developer's ES (Enso Energy, 2022a) indicating significant effects are considered unlikely.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the Bramford to Twinstead Reinforcement is predicted to produce negligible fugitive dust and plant emissions, therefore there is no potential for a cumulative effect.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate air quality effects during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Noise and Vibration	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects during construction at receptors at this location.</p> <p><u>Other Development:</u> The developer's Noise Impact Assessment (Enso Energy, 2022b) confirms that 'the development will give rise to noise impacts that would be categorised as No Observed Adverse Effect Level (NOAEL) within the noise planning practice guidance.'</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate noise during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Socio-economics	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is considered unlikely to have a significant effect on socio-economics receptors during construction. Construction workforce numbers for the project are estimated at around 350 workers at peak construction (Q3 2025), with an average of around 180 workers on site across the whole of the construction schedule. National Grid expects that approximately 10% of workers would be local. Appendix 15.1: Cumulative Effects Baseline (<b>application document 6.3.15.1</b>) shows that there is sufficient bedspace available within the local and wider areas (including Ipswich and Colchester) to accommodate construction workers for the project.</p> <p><u>Other Development:</u> The developer has not undertaken an assessment of effects on socio-economics receptors. The developer's Outline Construction Traffic Management Plan (Enso Energy, 2022c) states that maintenance vehicles (likely to be a transit van or similar) would visit the site approximately once or twice a month. Given this low number of operational workers it is assumed that there would be no impact on available bedspace during operation of the other development.</p> <p><u>Cumulative Effects:</u> In the absence of assessment data regarding socio-economic receptors from the other development, it is assumed that impact on bedspace would be very low from the other development and therefore it is considered unlikely that there would be a significant cumulative effect during construction.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement does not require any permanent relocation of staff or additional workforce during operation. Therefore, there would be no potential for cumulative effects with the other developments during operation.</p>	Not significant
Amenity (including recreation and tourism)	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project will require short term closures and diversions of PRoW during construction around Bramford Substation. These would be short term (during specific activities within construction). In addition, there would be some temporary loss of amenity value during construction due to the presence of machinery and noise, dust and visual intrusion associated with a construction site. This would be short term and the effects reduced by the good practice measures in the CoCP and by placing signs around the area when disruption is likely to occur. No significant effects are anticipated.</p> <p><u>Other Development:</u> The developer has not undertaken an assessment of effects on recreation and tourism receptors. However, given the assessment summaries presented in the Landscape and Visual, Noise and Vibration and Air Quality sections for this Other Development it is not expected that there would be a significant effect on amenity (including recreation and tourism).</p> <p><u>Cumulative Effects:</u> In the absence of data from the other development, and that any impacts during construction would be short-term, localised and temporary, it is considered unlikely that there would be a significant cumulative effect during construction.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is unlikely to have any effects on amenity during operation once vegetation matures (see Landscape and Visual above). Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant



**ID APP-BMSDC-010: Assington Autos (application reference DC/21/02579)**

**Description:** Change of use of land to extend an Authorised Treatment Facility (salvage yard); construction of five storage buildings, and other associated operational works.

**Distance from Bramford to Twinstead Reinforcement Order Limits:** Within Order Limits south of Assington.

**Temporal overlap:** The developer has not yet obtained planning permission. For the purposes of the CEA it has been assumed that planning permission is granted and there is an overlap in construction. The construction programme is not known.

**Information used:** The summary of the other development assessment is based on the developer's documentation submitted with the application. No ES was submitted with the application. Other documentation that has been used is referenced below.

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
<b>Landscape and Visual</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the Ancient Rolling Farmlands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011) are assessed as significant locally within approximately 1km reducing to not significant for the LCA as a whole, but this is related primarily to the works associated with the undergrounding which is located at some distance from Assington to the east of the A134. The effects on the visual amenity of the Assington community area are assessed as not significant.</p> <p><u>Other Development:</u> The red line boundary for the other development falls within the Order Limits for the project. A Landscape and Visual Assessment (LVIA) does not appear to have been produced for the other development which suggests no significant effects arising from the other development. The developer's Design and Access Statement (DAS) (Town Planning Services Limited, 2021) states that '<i>when viewed from the surroundings the site is very well screened and protected from view</i>'.</p> <p><u>Cumulative Effects:</u> In the event of an overlap in construction activities, the nature and small scale of the works would be highly unlikely to give rise to significant landscape or visual effects in combination with construction of the project which in this location comprises the dismantling of the existing 132kV overhead line and construction of the proposed 400kV overhead line. The effects of pylon removal and construction would be short term and require very little, if any, vegetation removal. A small working area around each pylon would be required and these would be accessed by temporary access routes. Most of the work is likely to be at ground level with limited at-height working.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the Ancient Rolling Farmlands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011) are assessed as significant locally within approximately 1km reducing to not significant for the LCA as a whole, but this is related primarily to the appearance of the former construction corridor of the 400kV underground cables which is located at some distance from Assington to the east of the A134. By year 15 the effects reduce to not significant. The effects on the visual amenity of the Assington community area are assessed as not significant.</p> <p><u>Other Development:</u> The red line boundary for the other development falls within the Order Limits for the project. An LVIA does not appear to have been produced for the other development which suggests no significant effects. The developer's DAS (Town Planning Services Limited, 2021) states that '<i>when viewed from the surroundings the site is very well screened and protected from view</i>'.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated with the project, which in this location comprises the replacement of the existing 132kV overhead line by the larger pylons on the proposed 400kV overhead line.</p>	Not significant
<b>Biodiversity</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects on biodiversity during construction.</p> <p><u>Other Development:</u> The developer's Preliminary Ecological Assessment (Writtle Forest Consultancy, 2020) concludes that with the implementation of mitigation and good practice measures there would not be any significant effects on habitats and species.</p> <p><u>Cumulative Effects:</u> No significant cumulative adverse effects are anticipated from biodiversity, as there is only a small overlap in the footprints and vegetation loss is only short term until reinstatement is undertaken at the end of each construction phase.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects on biodiversity during operation as the project is reinstating vegetation and habitats that are lost.</p> <p><u>Other Development:</u> The developer's Preliminary Ecological Assessment (Writtle Forest Consultancy, 2020) concludes that with the implementation of mitigation and good practice measures there would not be any significant effects on habitats and species.</p> <p><u>Cumulative Effects:</u> No significant cumulative adverse effects are anticipated from biodiversity as vegetation and habitats would be reinstated.</p>	Not significant
	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Partridge Row (1036691) and Shamrock Farm (1036690) on Barracks Road are 300m north of the Order Limits, and Hill Farm (1096028) and Green's Farmhouse (1181511) are between 80-180m south of the Order Limits. Construction work will be visible from the properties, amounting to a minor adverse effect from the project.</p>	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
<b>Historic Environment (Setting of Heritage Assets)</b>	Operation	<p><u>Other Development:</u> The red line boundary for the other development falls within the Order Limits for the project. The application documents do not contain any assessment of setting on listed buildings from the other development which suggests no significant effects arising from the other development. The developer's DAS (Town Planning Services Limited, 2021) states that 'when viewed from the surroundings the site is very well screened and protected from view'.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> There would be additional visual intrusions from the proposed 400kV overhead line on the named listed buildings. These would amount to a minor adverse effect given the extents of changes to setting.</p> <p><u>Other Development:</u> The red line boundary for the other development falls within the Order Limits for the project. A setting assessment does not appear to have been produced for the other development which suggests no significant effects. The developer's DAS (Town Planning Services Limited, 2021) states that 'when viewed from the surroundings the site is very well screened and protected from view'.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated based on the location of the listed properties relative to the projects.</p>	Not significant
<b>Surface Water</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The other development is located adjacent to an unnamed tributary of the River Stour, which has a narrow zone of floodplain associated with it. The project would not have a significant effect on surface water receptors during construction.</p> <p><u>Other Development:</u> The other development has been subject to a flood risk and drainage assessment (Innervision Design Ltd, 2021). This concluded, that subject to measures to manage flooding (e.g. sign up for Environment Agency flood warnings and carry out actions described in a Flood Plan), the residual risk is low, and not significant.</p> <p><u>Cumulative Effects:</u> The effects of both the project and the other development would be managed through standard good practice measures. Therefore, no significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on water during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Hydrogeology</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Significant effects on hydrogeology are not anticipated from the project during construction.</p> <p><u>Other Development:</u> Potential impacts on hydrogeology from the other development would be assumed to be dealt with through the planning process therefore there are unlikely to be any significant effects.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on hydrogeology during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Contaminated Land</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Significant effects on sensitive receptors from contaminated land are not anticipated during construction of the project, following the implementation of the good practice measures in the CoCP.</p> <p><u>Other Development:</u> The developer's Phase I Preliminary Risk Assessment (Oaktree Environmental Ltd, 2022a) identified low risk from contamination given the nature of the site.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on contaminated land during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Traffic and Transport</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours.</p> <p><u>Other Development:</u> No traffic and transport assessment has been provided in the developer's documentation.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The proposed development is included within the TEMPro growth factor, therefore to avoid duplication it is not assessed here.</p>	N/A
<b>Air Quality</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is predicted to produce negligible fugitive dust and plant emissions during construction. The project would not have a significant effect on air quality during construction following the implementation of the good practice measures in the CoCP.</p>	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
		<p><u>Other Development:</u> The developer's Environmental Risk Assessment (Oaktree Environmental Ltd, 2022b) concludes that the risk of dust and particulates is 'near zero'.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the Bramford to Twinstead Reinforcement is predicted to produce negligible fugitive dust and plant emissions, therefore there is no potential for a cumulative effect.</p>	
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate air quality effects during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Noise and Vibration	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects during construction at receptors at this location.</p> <p><u>Other Development:</u> The developer's Noise Impact Assessment (Oaktree Environmental Ltd, 2022c) does not provide an assessment of significance, however mitigation measures have been proposed which will 'deliver a reduction in the rating level of approximately 20dB'. The risk of noise and vibration arising is assessed as 'low' risk in the developer's Environmental Risk Assessment (Oaktree Environmental Ltd, 2022b).</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate noise during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Socio-economics	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is considered unlikely to have a significant effect on socio-economics receptors during construction. Construction workforce numbers for the project are estimated at around 350 workers at peak construction (Q3 2025), with an average of around 180 workers on site across the whole of the construction schedule. National Grid expects that approximately 10% of workers would be local. Appendix 15.1: Cumulative Effects Baseline (<b>application document 6.3.15.1</b>) shows that there is sufficient bedspace available within the local and wider areas (including Ipswich and Colchester) to accommodate construction workers for the project.</p> <p><u>Other Development:</u> The developer has not undertaken an assessment of effects on socio-economics receptors. In the absence of assessment information and a construction workforce estimate it is assumed that the construction workforce numbers would be low based on the scale and nature of the development.</p> <p><u>Cumulative Effects:</u> In the absence of data from the other development, it is assumed that impact on bedspace would be low from the other development and therefore it is considered unlikely that there would be a significant cumulative effect during construction.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement does not require any permanent relocation of staff or additional workforce during operation. Therefore, there would be no potential for cumulative effects with the other developments during operation.</p>	Not significant
Amenity (including recreation and tourism)	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project will require short term closures and diversions of a small number of PRoW during construction around Assington and the Order Limits include Assington Green Space. These would be short term (during specific activities within construction). In addition, there would be some temporary loss of amenity value during construction due to the presence of machinery and noise, dust and visual intrusion associated with a construction site. This would be short term and the effects reduced by the good practice measures in the CoCP and by placing signs around the area when disruption is likely to occur. No significant effects are anticipated.</p> <p><u>Other Development:</u> The developer's Design and Access Statement (Town Planning Services Limited, 2021) outlines measures to contain noise impacts during construction. It is stated that the retention of the earth bund and boundary landscaping would also help to contain noise and visually screen the site. There are no further details relating to amenity in the developer's application.</p> <p><u>Cumulative Effects:</u> In the absence of data from the other development, it is assumed that the effects from the other development on amenity would be low. It is also assumed that any impacts during construction would be short-term and temporary, therefore it is considered unlikely that there would be a significant cumulative effect during construction.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is unlikely to have any effects on amenity during operation once vegetation matures (see landscape and visual above). Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant

**ID APP-BMSDC-015: Bramford Power Ltd (application reference DC/21/05468)**

**Description:** Construction and operation of a 100MW Battery Energy Storage System, and related infrastructure with associated access, landscaping and drainage.

**Distance from Bramford to Twinstead Reinforcement Order Limits:** Within Order Limits east of Bramford Substation.

**Temporal overlap:** Planning permission expires in July 2025. The development does not appear to be under construction. Construction works would be completed within nine months of commencement according to the developer's DAS (Savills, 2021). Assuming that construction starts at the latest date of July 2025 there is potential for a nine month overlap with the construction of Bramford to Twinstead Reinforcement.

**Information used:** The summary of the other development assessment is based on the developer's DAS (incorporating EIA Screening Assessment) (Savills, 2021) and other documentation submitted with the application. No ES was submitted with the application. Other documentation that has been used is referenced below.

<b>Landscape and Visual</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Plateau Claylands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011) and visual amenity of the Bramford community area during construction are assessed as not significant.</p> <p><u>Other Development:</u> The developer's LVIA (Liz Lake Associates, 2021) does not provide an assessment of construction effects. Based on the type of development it can be assumed that the landscape and visual construction effects of the battery energy storage system are unlikely to be significant.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the high woodland cover around Bramford Substation and the substation infrastructure itself would limit intervisibility.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Plateau Claylands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011) and visual amenity of the Bramford community area during construction are assessed as not significant.</p> <p><u>Other Development:</u> The developer's LVIA (Liz Lake Associates, 2021) concludes that the development of the site would represent a slight adverse effect on a relatively small part of the Ancient Plateau Claylands, in a location where it has a relatively low sensitivity to change. It is recognised that the proposed structures would be much smaller than the more prominent Bramford Substation and radio mast. The effects would reduce to negligible after 15 with the maturing of mitigation planting. The LVIA also concludes that visual effects would be very localised and would range from moderate to slight adverse at year 1 (without stating whether or not they should be considered significant), with an overall change over time as the landscaping scheme establishes resulting in some slight beneficial effects in views.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated due to the screening effects of Bullen Wood and other woodlands in the locality which would reduce the intervisibility between the two developments.</p>	Not significant
<b>Biodiversity</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects on biodiversity during construction.</p> <p><u>Other Development:</u> The developer's Ecological Assessment (Hopkins Ecology Ltd, 2021) concludes that ecological impacts would be very minor or negligible, via the loss of arable habitat and a short section of hedgerow.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated, as vegetation loss is only short term until reinstatement is undertaken at the end of each construction phase.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects on biodiversity during operation as the project is reinstating vegetation and habitats that are lost.</p> <p><u>Other Development:</u> The developer's Ecological Assessment (Hopkins Ecology Ltd, 2021) concludes that ecological impacts would be very minor or negligible, and the proposals are considered to 'provide high quality enhancements, providing new habitat, resources relevant to species otherwise present in the woodland, and increasing connectivity around the Site boundary'.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative adverse effects are anticipated as vegetation and habitats would be reinstated.</p>	Not significant
<b>Historic Environment (Setting of Heritage Assets)</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Two listed buildings are identified as at risk of setting changes from the other development (Savills, 2021): these are Bullenhall Fm (1033263) 400m to the north and Fidgeon's Fm (1293253) 1km to the east. The project would have a negligible adverse effect on these assets, based on distance and local topography.</p> <p><u>Other Development:</u> The developer's DAS (Savills, 2021) states that the other development will not have any adverse impact either directly on the identified heritage assets or their settings. In addition, the developer's LVIA (Liz Lake Associates, 2021) does not provide an assessment of construction effects. Based on the type of development it can be assumed that the landscape and visual construction effects of the battery energy storage system are unlikely to be significant.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> Two listed buildings are identified as at risk of setting changes from the other development (Savills, 2021): these are Bullenhall Fm (1033263) 400m to the north and Fidgeon's Fm (1293253) 1km to the east. Setting changes from the operational project likely to be no change to these assets.</p> <p><u>Other Development:</u> The developer's DAS (Savills, 2021) states that the other development will not have any adverse impact either directly on the identified heritage assets or their settings. In addition, the developer's LVIA (Liz Lake Associates, 2021) does not provide an assessment of construction effects. Based on the type of development it can be assumed that the landscape and visual construction effects of the battery energy storage system are unlikely to be significant.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the other development would not have any adverse impact on heritage assets and their setting, therefore there is no potential for a cumulative effect.</p>	Not significant
<b>Surface Water</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is located in the catchment of Belstead Brook. The project would not have a significant effect on surface water receptors during construction.</p> <p><u>Other Development:</u> The other development is located remote from, but within the catchment of, the River Gipping which is a separate hydrological catchment to the project, which drains to the adjacent Belstead Brook catchment. The other development has been subject to a Flood Risk Assessment and drainage strategy (Rossi Long Consulting, 2021) that concluded that subject to suitable SuDS measures for management of surface water runoff. The developer's application concludes that there would be no significant effects.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the project and other development are located in separate hydrological catchments and there is therefore no potential for a cumulative effect.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on water environment receptors during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Hydrogeology</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Significant effects on hydrogeology are not anticipated from the project during construction.</p> <p><u>Other Development:</u> The other development is unlikely to interact with groundwater therefore significant effects are considered unlikely. The developer's Phase 1 Desk Study (Geosphere Environmental Ltd, 2021) concluded that there was no potential source of contamination from the other development.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the other development is unlikely to interact with groundwater, therefore there is no potential for cumulative effects on groundwater receptors.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on hydrogeology during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Contaminated Land</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Significant effects on sensitive receptors from contaminated land are not anticipated during construction of the project, following the implementation of the good practice measures in the CoCP.</p> <p><u>Other Development:</u> The developer's Phase 1 Desk Study (Geosphere Environmental Ltd, 2021) concluded that there was no potential source of contamination from the other development.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as no potential sources of contamination have been identified for the other development, therefore there is no potential for cumulative effects.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on contaminated land during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Traffic and Transport</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours.</p> <p><u>Other Development:</u> The developer's DAS (Savills, 2021) notes that during the construction phase the scheme is unlikely to generate more than 5 - 15 arrivals/departures to/from the Site over the course of an average working day, and concludes that the other development would not result in any significant impact upon both capacity or safety of the local highway network. The DAS also states that an existing public footpath which runs north/south along the eastern boundary of the site would be maintained as part of the proposals and this would ensure that no public rights of way are affected.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Air Quality</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project is predicted to produce negligible fugitive dust and plant emissions during construction. The project would not have a significant effect on air quality during construction following the implementation of the good practice measures in the CoCP. <u>Other Development:</u> No assessment of effects on air quality during construction has been undertaken for the other development. In the absence of assessment information for the other development, it is considered that a development of this type would not be expected to produce significant fugitive emissions during construction, and the effect is therefore judged to be negligible. <u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the Bramford to Twinstead Reinforcement is predicted to produce negligible fugitive dust and plant emissions, therefore there is no potential for a cumulative effect.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate air quality effects during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Noise and Vibration</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects during construction at receptors at this location. <u>Other Development:</u> The developer's DAS (Savills, 2021) states that predicted noise levels will be sufficiently low that they will comply with the 'No Observed Effect Level' set out in the Planning Practice Guidance. <u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the predicted noise levels from the other development would be at the No Observed Effect Level, therefore there is no potential for a cumulative effect.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate noise during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Socio-economics</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project is considered unlikely to have a significant effect on socio-economics receptors during construction. Construction workforce numbers for the project are estimated at around 350 workers at peak construction (Q3 2025), with an average of around 180 workers on site across the whole of the construction schedule. National Grid expects that approximately 10% of workers would be local. Appendix 15.1: Cumulative Effects Baseline ( <b>application document 6.3.15.1</b> ) shows that there is sufficient bedspace available within the local and wider areas (including Ipswich and Colchester) to accommodate construction workers for the project. <u>Other Development:</u> No construction workers numbers are provided in the developer's application, however the developer's DAS (2021) states that, as a guide, the other development is unlikely to generate more than 5 - 15 arrivals/departures to/from the Site over the course of an average working day. These numbers are considered to be very low and are therefore likely to have a negligible impact on available bedspace. <u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as it is considered that that there is sufficient bedspace available within the local and wider areas (including Ipswich and Colchester) to accommodate construction workers for Bramford to Twinstead Reinforcement, and the other development is considered likely to have a negligible impact on available bedspace.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement does not require any permanent relocation of staff or additional workforce during operation. Therefore, there would be no potential for cumulative effects with the other developments during operation.	Not significant
<b>Amenity (including recreation and tourism)</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project will require short term closures and diversions of PRow during construction around Bramford Substation. These would be short term (during specific activities within construction). In addition, there would be some temporary loss of amenity value during construction due to the presence of machinery and noise, dust and visual intrusion associated with a construction site. This would be short terms and the effects reduced by the good practice measures in the CoCP and by placing signs around the area when disruption is likely to occur. No significant effects are anticipated. <u>Other Development:</u> The developer has not undertaken an assessment of effects on amenity and the nature of the other development means that there are unlikely to be significant effects. <u>Cumulative Effects:</u> It is considered that there could be cumulative effects to amenity around Bramford Substation during construction due to the presence of two construction projects creating noise, dust and visual intrusion. The effects would be reduced by the CoCP and standard good practice measures employed on each project. It is therefore assumed that it is unlikely that there would be a significant cumulative effect during construction due to the rolling nature of the linear works and short-term and localised construction activities for the two developments.	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is unlikely to have any effects on amenity during operation once vegetation matures (see landscape and visual above). Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant

**ID APP-BMSDC-016: Statkraft, Greybarn Solar Energy Farm (application reference DC/22/01243)**

**Description:** Solar Energy Farm with a 29.6 MVA solar array together with supporting infrastructure which includes a Battery Energy Storage System with an import and export capacity of up to 104 MW and grid infrastructure. Construction of vehicular accesses and roadways.

**Distance from Bramford to Twinstead Reinforcement Order Limits:** Within Order Limits around Bramford Substation.

**Temporal overlap:** The developer has not yet obtained planning permission. The developer has provided an outline construction programme to National Grid, which assumes that construction starts in Q2 2024 (though it is noted that the start of construction is heavily dependent on the timing of planning permission) and construction takes approximately 20 weeks (five months). For the purposes of the CEA it has been assumed that planning permission is granted and there is a small overlap in construction.

**Information used:** The summary of the other development assessment is based on the developer's ES (TNEI Services Ltd, 2022) and other documentation submitted with the application.

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
<b>Landscape and Visual</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> There is an overlap between the red line boundary of the other development and the Order Limits for the project close to Bramford Substation. The effects of the project on the landscape of the Ancient Plateau Claylands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011) and visual amenity of the Bramford community area are assessed as not significant.</p> <p><u>Other Development:</u> The developer's ES (TNEI Services Ltd, 2022) concludes that during the construction phase, there would be no significant effects on landscape fabric (notably trees and hedgerows) or on landscape character. It does however conclude that there would be large-scale effects on some views which would be significant although it is unclear whether this assessment just relates to construction activities or also takes account of the presence of the solar panels (which is potentially double counting the effects).</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the construction of the solar farm does not require high-level activities and the other development has relatively low levels of site traffic.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Plateau Claylands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011) and visual amenity of the Bramford community area are assessed as not significant.</p> <p><u>Other Development:</u> The developer's ES (TNEI Services Ltd, 2022) concludes that during the operational phase, there would be no significant effects on the landscape fabric or on landscape character (despite identifying large scale effects up to 200m from the site) and emphasises that the extensive programme of mitigation planting would, over 5-10 years, soften the appearance of the other development and deliver a long-term legacy of landscape enhancement and compensation. The ES concludes that there would be significant visual effects on users of a local footpath (Bramford 3) and Tye Lane but once the mitigation planting has established after 10 years these effects would reduce to not significant. The combined presence of the project and the solar farm would result in significant cumulative landscape and visual effects due mainly to the presence of the solar farm which would change the character of a relatively large area of rural farmland. By year 15, with the maturing of the mitigation planting the significant visual effects would reduce to not significant.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated because the two projects are very different in character and appearance, and the low-level nature of the solar farm infrastructure combined with the intervening hedgerows and woodland reduces intervisibility whilst pylons are a defining element of the baseline landscape.</p>	Not significant
<b>Biodiversity</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects on biodiversity during construction.</p> <p><u>Other Development:</u> The developer's ES (TNEI Services Ltd, 2022) concludes that the other development will not result in any significant adverse effects on any habitats or species, or on statutory and non-statutory designated sites, and new habitat areas would be created post-construction.</p> <p><u>Cumulative Effects:</u> No significant cumulative adverse effects are anticipated from biodiversity, as vegetation loss is only short term until reinstatement is undertaken at the end of each construction phase.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects on biodiversity during operation as the project is reinstating vegetation and habitats that are lost.</p> <p><u>Other Development:</u> The other development is expected to have no significant adverse effects on biodiversity during operation as it would reinstate vegetation and habitats lost during construction.</p> <p><u>Cumulative Effects:</u> No significant cumulative adverse effects are anticipated from biodiversity as vegetation and habitats would be reinstated.</p>	Not significant



Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
<b>Historic Environment (Setting of Heritage Assets)</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Five listed buildings (1263018, 1033263, 1293253, 1250929 and 1251233) lie far enough from the Order Limits of the project to see minimal change to their setting from construction-related activity generating noise, dust and visual intrusions. Construction would lead to a negligible adverse effect on these assets.</p> <p><u>Other Development:</u> The developer's ES (TNEI Services Ltd, 2022) identifies three listed buildings as being at risk of setting change from the proposed development: Church of St Mary (Flowton), Tye Farmhouse and Bullenhall Farmhouse. The ES did not identify any significant effects during construction.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the Bramford to Twinstead Reinforcement would have a negligible effect on the setting of the identified heritage assets, therefore there is no potential for cumulative effects.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> Operational changes to the setting of five listed buildings (1033263, 1293253, 1263018, 1250929 and 1251233) would be minimal, resulting in a negligible adverse effect, given the distance of these assets from the project Order Limits.</p> <p><u>Other Development:</u> The developer's ES (TNEI Services Ltd, 2022) identifies three listed buildings as being at risk of setting change from the proposed development: Church of St Mary (Flowton) Tye Farmhouse and Bullenhall Farmhouse. The ES did not identify any significant effects during operation given the lack of inter-visibility and the mitigation screening proposals.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the Bramford to Twinstead Reinforcement would have a negligible effect on the setting of the identified heritage assets, therefore there is no potential for cumulative effects. The proximity of the solar array to the listed buildings would be the source of impact and not in combination with the project.</p>	Not significant
<b>Surface Water</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is located in the catchment of Belstead Brook. Taking into account good practice measures outlined in the CoCP the project would not have a significant effect on surface water receptors during construction.</p> <p><u>Other Development:</u> The other development has been subject to a Flood Risk drainage assessment (S M Foster Associates Ltd, 2021) that concludes that subject to suitable SuDS measures for management of surface water runoff there would be no significant effects.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on water environment receptors during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Hydrogeology</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Significant effects on hydrogeology are not anticipated from the project during construction.</p> <p><u>Other Development:</u> Impacts on groundwater from the other development are assumed to be dealt with through the planning process and therefore there are not expected to be any significant effects.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on hydrogeology during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Contaminated Land</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Significant effects on sensitive receptors from contaminated land are not anticipated from the project during construction.</p> <p><u>Other Development:</u> Impacts from contaminated land are assumed to be dealt with through the planning process and therefore there are not anticipated to be any significant effects.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on contaminated land during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Traffic and Transport</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours.</p> <p><u>Other Development:</u> The developer's ES (TNEI Services Ltd, 2022) concludes that impacts on traffic flows will be negligible on both the B1113 and Bullen Lane with mitigation proposed that will be secured through the agreement of a Construction Traffic Management Plan.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
Air Quality	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project is predicted to produce negligible fugitive dust and plant emissions during construction. The project would not have a significant effect on air quality during construction following the implementation of the good practice measures in the CoCP. <u>Other Development:</u> The developer's ES (TNEI Services Ltd, 2022) does not provide an assessment of air quality, indicating that it has been scoped out of the assessment due to no likely significant effects. <u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the Bramford to Twinstead Reinforcement is predicted to produce negligible fugitive dust and plant emissions, therefore there is no potential for a cumulative effect.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate air quality effects during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
Noise and Vibration	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects during construction at receptors at this location. <u>Other Development:</u> The developer's ES (TNEI Services Ltd, 2022) states that construction noise effects have been scoped out of the assessment in accordance with the council's scoping response. <u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate noise during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
Socio-economics	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project is considered unlikely to have a significant effect on socio-economics receptors during construction. Construction workforce numbers for the project are estimated at around 350 workers at peak construction (Q3 2025), with an average of around 180 workers on site across the whole of the construction schedule. National Grid expects that approximately 10% of workers would be local. Appendix 15.1: Cumulative Effects Baseline ( <b>application document 6.3.15.1</b> ) shows that there is sufficient bedspace available within the local and wider areas (including Ipswich and Colchester) to accommodate construction workers for the project. <u>Other Development:</u> The developer's ES (TNEI Services Ltd, 2022) states that no significant adverse effects on socio-economic receptors are predicted, and there would be beneficial effects during construction of the other development as a result of job creation. <u>Cumulative Effects:</u> In the absence of data from the other development, it assumed that impact on bedspace would be low from the other development and therefore it is considered unlikely that there would be a significant cumulative effect during construction.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement does not require any permanent relocation of staff or additional workforce during operation. Therefore, there would be no potential for cumulative effects with the other developments during operation.	Not significant
Amenity (including recreation and tourism)	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project will require short term closures and diversions of PRow during construction around Bramford Substation. These would be short term (during specific activities within construction). In addition, there would be some temporary loss of amenity value during construction due to the presence of machinery and noise, dust and visual intrusion associated with a construction site. This would be short terms and the effects reduced by the good practice measures in the CoCP and by placing signs around the area when disruption is likely to occur. No significant effects are anticipated. <u>Other Development:</u> The developer's ES (TNEI Services Ltd, 2022) states that no significant adverse effects on socio-economic receptors (including tourism and recreation) are predicted. <u>Cumulative Effects:</u> It is considered that there could be cumulative effects to amenity around Bramford Substation during construction due to the presence of two construction projects creating noise, dust and visual intrusion. The effects would be reduced by the CoCP and standard good practice measures employed on each project. It is therefore assumed that it is unlikely that there would be a significant cumulative effect during construction due to the rolling nature of the linear works and short-term and localised construction activities for the two developments.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is unlikely to have any effects on amenity during operation once vegetation matures (see landscape and visual above). Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant

**ID APP-BMSDC-331: Anglian Water Services Ltd, Bury St Edmunds to Colchester water pipeline (application reference DC/22/06309)**

**Description:** Bury St Edmunds to Colchester 69km Pipeline Scheme and associated above ground infrastructure at Raydon Water and Rushbrooke Water Treatment Works, Raydon Tee Chemical Dosing Site and Wherstead Water Reservoir. Outline Application for above ground infrastructure at Little Saxham Water Reservoir, Little Whelnetham, Nedging Tye Water Reservoir, Hadleigh Water Reservoir and Great Horkesley.

**Distance from Bramford to Twinstead Reinforcement Order Limits:** Crosses the Order Limits south-east of Hadleigh.

**Temporal overlap:** The developer has not yet obtained planning permission. The developer's ES (Anglian Water Services Ltd, 2022) provides an indicative construction programme. Enabling works are expected to commence in March 2023. Main construction works are expected to start in July 2023. The Whelnetham to Wherstead pipeline section, which includes the works around Hadleigh, is expected to be constructed between July 2023 and February 2024. The whole pipeline route is expected to be reinstated, tested and commissioned by September 2024. As the planning application has not yet been determined there is some potential for construction programmes to overlap around the Hadleigh area if delays occur in the programme.

**Information used:** The summary of the other development assessment is based on the developer's ES (Anglian Water Services Ltd, 2022) and EIA Scoping Report (Anglian Water Services Ltd, 2021).

<b>Landscape and Visual</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> There is an overlap between the red line boundary of the water pipeline and the Order Limits for the project in the Hadleigh area between Raydon Great Wood and Hintlesham Woods. The construction effects of the project on the landscape of the Ancient Plateau Claylands LCA and Ancient Estate Claylands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011) are assessed as not significant (minor adverse). The visual amenity effects of the project on the Hadleigh, Wenham, Chattisham, Copdock and Washbrook and Raydon community areas are assessed as not significant (minor adverse) during construction. The effects of pylon removal and construction would be short term and require very little, if any, vegetation removal. A small working area around each pylon would be required and these would be accessed by temporary access routes. Most of the work is likely to be at ground level with limited at-height working.</p> <p><u>Other Development:</u> The developer's ES (Anglian Water Services Ltd, 2022) concludes that during the construction phase, there would be no significant effects on landscape character or landscape elements except for two group landscape receptors (hedgerows) which would experience temporary adverse effects of moderate significance. It also concludes that there would be large-scale effects on the views experienced by 12 visual receptors, of which five are group receptors and four are linear receptors. Moderate adverse effects are predicted for 44 visual receptors of which 18 are group receptors and seven are linear receptors. The construction activities associated with the pipeline would involve a working corridor approximately 30m wide with construction compounds in several locations.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated despite the overlapping red line boundary and Order Limits. is very small compared to the footprint required to construct the pipeline. The predicted effects for the Bramford to Twinstead Reinforcement would not increase the assessment of effects for the other project. No likely significant cumulative effects are therefore anticipated despite the overlapping red line boundary and Order Limits.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Plateau Claylands LCA and Ancient Estate Claylands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011) during operation are assessed as not significant. The visual amenity effects of the project on the Hadleigh and Raydon community areas are assessed as not significant (minor adverse), not significant (minor beneficial) for Copdock and Washbrook and Wenham community areas, and significant (moderate beneficial) for Chattisham community area during operation.</p> <p><u>Other Development:</u> The developer's ES (Anglian Water Services Ltd, 2022) concludes that during the operational phase, there would be no significant effects on landscape character or on landscape elements or features either at year 1 or year 15. It does however conclude that at year 1, there would be moderate adverse effects on the views experienced by 16 visual receptors, of which five are group receptors and three are linear receptors. At year 15 the assessment concludes that there would be large-scale adverse effects on the views experienced by three visual receptors, of which two are group receptors and one is a linear receptor. It also concludes that there would be moderate adverse effects on the views experienced by eight visual receptors, of which four are group receptors.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated because the two developments are very different in character and appearance, and the low-level nature of the small amounts of pipeline infrastructure combined with the intervening landform and vegetation precludes intervisibility.</p>	Not significant
<b>Biodiversity</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects during construction.</p> <p><u>Other Development:</u> The developer's ES (Anglian Water Services Ltd, 2022) states that there would be no significant residual effects during construction.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative adverse effects are anticipated, as there is only a small overlap in the footprints and vegetation loss is only short term until reinstatement is undertaken at the end of each construction phase.</p>	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects during operation.</p> <p><u>Other Development:</u> The developer's ES (Anglian Water Services Ltd, 2022) states that there would be no significant residual effects during operation.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative adverse effects are anticipated as vegetation and habitats would be reinstated. It is assumed that any effects to protected species would be managed through licences.</p>	Not significant
Historic Environment (Setting of Heritage Assets)	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> No significant effects are anticipated on heritage assets during construction.</p> <p><u>Other Development:</u> The developer's ES (Anglian Water Services Ltd, 2022) identified a temporary slight adverse significant effect on Ponds Hall Farmhouse (NHLE 1193243).</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated even taking into account the overlapping Order Limits and any embedded measures.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> No significant effects are identified on heritage assets.</p> <p><u>Other Development:</u> The developer's ES (Anglian Water Services Ltd, 2022) identified that the pipeline would be a buried feature and would have no operational changes to the setting of heritage assets.</p> <p><u>Cumulative Effects:</u> There would be no operational effect on the setting of heritage assets from the other development, therefore no significant cumulative adverse effects are anticipated on the setting of heritage assets.</p>	Not significant
Surface Water	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is located in the catchment of River Brett. Taking into account good practice measures outlined in the CoCP the project would not have a significant effect on surface water receptors during construction.</p> <p><u>Other Development:</u> The other development is also located in the catchment of the River Brett. The developer's ES (Anglian Water Services Ltd, 2022) confirms that no additional mitigation is required for surface water quality and hydromorphology as construction impacts would be mitigated through embedded mitigation and good practice measures. Additional mitigation has been identified for the flood risk aspect. The developer's ES (Anglian Water Services Ltd, 2022) concludes that no significant residual impacts are anticipated for the water environment (including surface water quality).</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as, though both the Bramford to Twinstead Reinforcement and the other development are in the Brett catchment, effects would be managed through standard good practice measures, which would reduce the potential for cumulative effects.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on water environment receptors during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Hydrogeology	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Significant effects on hydrogeology are not anticipated from the project during construction.</p> <p><u>Other Development:</u> The developer's ES (Anglian Water Services Ltd, 2022) confirms that no additional mitigation is required for groundwater as construction impacts would be mitigated through embedded mitigation and good practice measures, and there would be no significant residual impacts are anticipated for the water environment (including groundwater).</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on hydrogeology during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Contaminated Land	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Significant effects on sensitive receptors from contaminated land are not anticipated from the project during construction.</p> <p><u>Other Development:</u> The developer's ES (Anglian Water Services Ltd, 2022) does not identify any potential sources of contamination where the development crosses the project. In addition, any contamination identified are assumed to be dealt with through the planning process therefore there are unlikely to be any significant effects.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the developer of the pipeline did not identify any potential sources of contamination where the development crosses the Bramford to Twinstead Reinforcement, therefore there is no potential for a cumulative effect.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on contaminated land during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
Traffic and Transport	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours.</p> <p><u>Other Development:</u> The developer's ES (Anglian Water Services Ltd, 2022) does not contain a traffic and transport assessment. The developer's Scoping Report (Anglian Water Services Ltd, 2021) stated that, with specified construction traffic mitigation measures in place, it is proposed to scope out traffic and transport as there are unlikely to be significant impacts.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Air Quality	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is predicted to produce negligible fugitive dust and plant emissions during construction. The project would not have a significant effect on air quality during construction following the implementation of the good practice measures in the CoCP.</p> <p><u>Other Development:</u> The developer's ES (Anglian Water Services Ltd, 2022) does not contain an air quality assessment. The developer's Scoping Report (Anglian Water Services Ltd, 2021) stated that, with specified construction mitigation measures in place, it is proposed to scope out air quality (construction and operation) as there are unlikely to be significant impacts.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the Bramford to Twinstead Reinforcement is predicted to produce negligible fugitive dust and plant emissions, therefore there is no potential for a cumulative effect.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate air quality effects during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Noise and Vibration	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects during construction at this location.</p> <p><u>Other Development:</u> The developer's ES (Anglian Water Services Ltd, 2022) confirms that no significant adverse effects have been identified within the overlap of ZOIs for construction noise.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as noise impacts would be localised and temporary, and it is considered unlikely that maximum noise levels would occur from both developments at the same time.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate noise during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Socio-economics	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is considered unlikely to have a significant effect on socio-economics receptors during construction. Construction workforce numbers for the project are estimated at around 350 workers at peak construction (Q3 2025), with an average of around 180 workers on site across the whole of the construction schedule. National Grid expects that approximately 10% of workers would be local. Appendix 15.1: Cumulative Effects Baseline (<b>application document 6.3.15.1</b>) shows that there is sufficient bedspace available within the local and wider areas (including Ipswich and Colchester) to accommodate construction workers for the project.</p> <p><u>Other Development:</u> The developer's ES (Anglian Water Services Ltd, 2022) does not contain a socio-economic assessment. The developer's ES (Anglian Water Services Ltd, 2022) states that for 'each main phase of pipeline construction there may be two or more work fronts operating simultaneously' and each work front would have a crew generally comprising up to 10 construction workers.</p> <p><u>Cumulative Effects:</u> It is considered that the other development would have a low impact on available bedspace impact and therefore it is considered unlikely that there would be a significant cumulative effect during construction.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement does not require any permanent relocation of staff or additional workforce during operation. Therefore, there would be no potential for cumulative effects with the other developments during operation.</p>	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
Amenity (including recreation and tourism)	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> There are no PRow near this location. There would be some temporary loss of amenity value during construction due to the presence of machinery and noise, dust and visual intrusion associated with a construction site. This would be short terms and the effects reduced by the good practice measures in the CoCP. No significant effects are anticipated.</p> <p><u>Other Development:</u> The developer's ES (Anglian Water Services Ltd, 2022) does not contain an assessment of amenity (including recreation and tourism). The developer's Scoping Report (Anglian Water Services, 2021) stated that construction impacts on population, human health and recreational receptors would be short-term and unlikely to be significant, and it was proposed to scope out the population, human health and recreation assessment topic.</p> <p><u>Cumulative Effects:</u> It is considered that there could be cumulative effects to amenity to the south-east of Hadleigh and along parts of Hadleigh Railway Walk during construction due to the presence of two construction projects creating noise, dust and visual intrusion. The effects would be reduced by the CoCP and standard good practice measures employed on each project. It is considered unlikely that there would be a significant cumulative effect during construction due to the rolling nature of the linear works and short-term and localised construction activities for the two developments at this location.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is unlikely to have any effects on amenity during operation once vegetation matures (see landscape and visual above). Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant

**ID APP-BMSDC-025: Stoke by Nayland Club Ltd (application reference B/16/00928)**

**Description:** Construction of 18-hole golf course, together with a new nine-hole par 3 course, short game area; Relocation of one halfway hut and construction of one new halfway hut, new car park; three new tennis courts and a children's golf activity area.

**Distance from Bramford to Twinstead Reinforcement Order Limits:** A small part (approximately 190m<sup>2</sup>) of the proposed golf course extension is located within the Order Limits south-east of Leavenheath. Works within the Order Limits at this location comprise a proposed UKPN connection.

**Temporal overlap:** Planning permission expires in August 2024. The development does not appear to be under construction. Assuming that construction starts at the latest date of August 2024, there is potential for a temporal overlap with the Bramford to Twinstead Reinforcement. The total duration of the construction programme is not known.

**Information used:** The summary of the other development assessment is based on the developer's documentation submitted with the application. No ES was submitted with the application. Other documentation that has been used is referenced below.

Aspect	Phase	Assessment	Potential for Significant Cumulative Effect
<b>Landscape and Visual</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the Ancient Rolling Farmland and Rolling Valley Farmlands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011) would be significant within 1km reducing to not significant for the LCA as a whole. This is due to the scale of the works associated with the 400kV underground cables. The effects on the visual amenity of the Leavenheath community area would be significant and Stoke-by-Nayland community area would be not significant.</p> <p><u>Other Development:</u> The red line boundary for the other development and one of the two proposed site access points are just outside of the Order Limits for the other development. The Landscape and Visual Appraisal (LVA) for the other development is provided within the DAS (Weller Designs, 2016) and is not a full assessment. No large or significant landscape or visual effects were identified during construction. The northern part of the other development requires vegetation clearance and soil stripping/grading before the formation of the new par three course and short game area to the B1068 and new golf course holes immediately north of the Carrs. Construction of 160 car parking spaces and new tennis courts to the west of the existing hotel complex is within 350m of the construction wayleave corridor for the 400kV underground cables.</p> <p><u>Cumulative Effects:</u> Should the construction periods of the two developments overlap there could be significant cumulative landscape and visual effects, which would be mainly associated with the 400kV underground cables.</p>	<b>Significant temporary short-term adverse</b>
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> During the operational phase of the project, the significant impacts associated with construction of the 400kV underground cables reported above would gradually diminish as the embedded planting matures and the landscape along the construction wayleave would be returning to its existing character. By year 15 there would be minor beneficial effects from the replacement of the existing 132kV overhead line by underground cables.</p> <p><u>Other Development:</u> The LVA for the other development provided within the DAS (Weller Designs, 2016) does not identify any significant adverse effects landscape effects during operation. This is based on the premise that because the area is already a golf course or is under intensive crop production (mainly apple) with polytunnels etc there would be a minimal effect on the landscape. The LVA notes that the site occupies a shallow valley and is well screened from the surrounding area, resulting in minimal effect on views.</p> <p><u>Cumulative Effects:</u> The cumulative landscape and visual effects of both developments during operation would not be significant.</p>	Not significant
<b>Biodiversity</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects on biodiversity during construction.</p> <p><u>Other Development:</u> The developer's DAS (Weller Designs, 2016) states that there would be '<i>little ecological impact as a consequence of the proposals given what was identified and subject to the mitigation measures put forward that need to be adhered to</i>'.</p> <p><u>Cumulative Effects:</u> No significant cumulative adverse effects are anticipated from biodiversity, as there is only a small overlap in the footprints and vegetation loss is only short term until reinstatement is undertaken at the end of each construction phase.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects on biodiversity during operation as the project is reinstating vegetation and habitats that are lost.</p> <p><u>Other Development:</u> The developer's DAS (Weller Designs, 2016) states that there would be '<i>little ecological impact as a consequence of the proposals given what was identified and subject to the mitigation measures put forward that need to be adhered to</i>'.</p> <p><u>Cumulative Effects:</u> No significant cumulative adverse effects are anticipated from biodiversity as vegetation and habitats would be reinstated.</p>	Not significant
	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Hynards Cottage (1033461), Harrow Street Farmhouse (1036599), Thomson's Farmhouse Heathcote (1119683), Acre Piece (1181518) and Heathcote (1351808) are Grade II listed buildings in Stoke-by-Nayland which lie between 100m and 1.8km from the project Order Limits; construction work would likely have a neutral effect on their setting given the distance between the properties and construction activity.</p>	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
<b>Historic Environment (Setting of Heritage Assets)</b>	Operation	<p><u>Other Development:</u> The developer's Archaeological Desk Based Assessment (Britannia Archaeology Ltd, 2016) states that there is a low impact on the setting of existing listed buildings. The LVA for the other development is provided within the DAS (Weller Designs, 2016) and is not a full assessment. No significant landscape or visual effects were identified during construction.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the Bramford to Twinstead Reinforcement is expected to have a neutral effect on the setting of heritage assets which have been identified as shared receptors with the other development, therefore there is no potential for a cumulative effect.</p>	Not significant
	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> This is near a section of proposed underground cables therefore the operational project would not result in any visual intrusion on the conservation area, historic park and garden and listed building designations. There would therefore be a neutral effect from operation.</p> <p><u>Other Development:</u> The developer's Archaeological Desk Based Assessment (Britannia Archaeology Ltd, 2016) states that there is a low impact on the setting of existing listed buildings.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated on the setting of the heritage assets based on the fact that it is a non-urbanising form of development.</p>	Not significant
<b>Surface Water</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The other development is located in the upper catchment of the River Stour, in the low-risk flood zone. Given the lack of direct source-pathway linkages and taking into account good practice measures outlined in the CoCP, the project would not have a significant effect on surface water receptors during construction.</p> <p><u>Other Development:</u> The other development has been subject to a flood risk and drainage assessment (Evans Rivers and Coastal Ltd, 2016) that concluded no significant effects on the hydrological regime or surface water receptors.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on water during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Hydrogeology</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Significant effects on hydrogeology are not anticipated from the project during construction.</p> <p><u>Other Development:</u> The other development has been subject to a flood risk and drainage assessment (Evans Rivers and Coastal Ltd, 2016) that concluded no significant effects on the hydrological regime.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on hydrogeology during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Contaminated Land</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Significant effects on sensitive receptors from contaminated land are not anticipated from the project during construction.</p> <p><u>Other Development:</u> Planning permission has been granted for the other development, therefore there are unlikely to be any significant residual effects in relation to contaminated land as these would have been dealt with through the planning process.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on contaminated land during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
<b>Traffic and Transport</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours.</p> <p><u>Other Development:</u> The developer's DAS (Weller Designs, 2016) states that any vehicle movement impact of the other development would be negligible, and the impact of the other development upon the highway network infrastructure is considered to be minimal.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant



Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
Air Quality	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is predicted to produce negligible fugitive dust and plant emissions during construction. The project would not have a significant effect on air quality during construction following the implementation of the good practice measures in the CoCP.</p> <p><u>Other Development:</u> The developer's DAS (Weller Designs, 2016) states that '<i>the contractor shall be required to take all reasonable steps to minimise the nuisance of airborne dust arising out of earth moving operations</i>'. In the absence of assessment information, it is assumed that with these measures in place the risk of fugitive dust and plant emissions is low.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the Bramford to Twinstead Reinforcement is predicted to produce negligible fugitive dust and plant emissions, therefore there is no potential for a cumulative effect.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate air quality effects during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Noise and Vibration	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects during construction at this location.</p> <p><u>Other Development:</u> The developer's DAS (Weller Designs, 2016) states that '<i>55dB is considered by the World Health Organisation to be the daytime noise level above which 'community annoyance' sets in. There are no noise-sensitive properties near enough to the site for this threshold to be exceeded.</i>' Significant adverse effects would not be expected at receptors close to the other development due to the distance between works and the receptors.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate noise during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Socio-economics	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is considered unlikely to have a significant effect on socio-economics receptors during construction. Construction workforce numbers for the project are estimated at around 350 workers at peak construction (Q3 2025), with an average of around 180 workers on site across the whole of the construction schedule. National Grid expects that approximately 10% of workers would be local. Appendix 15.1: Cumulative Effects Baseline (<b>application document 6.3.15.1</b>) shows that there is sufficient bedspace available within the local and wider areas (including Ipswich and Colchester) to accommodate construction workers for the project.</p> <p><u>Other Development:</u> The developer's DAS (Weller Designs, 2016) states that there would be approximately five construction workers required on site at any one time. In the absence of assessment information on bedspaces, it is considered that the number of construction workers required for the project is very small and there would be a negligible impact on available bedspaces. Construction would be phased, therefore it is considered that any impacts during construction would be short-term and temporary.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as it is considered that there is sufficient bedspace available to accommodate construction workers for the Bramford to Twinstead Reinforcement and the other development.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement does not require any permanent relocation of staff or additional workforce during operation. Therefore, there would be no potential for cumulative effects with the other developments during operation.</p>	Not significant
Amenity (including recreation and tourism)	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is not anticipated to require closures and diversions to PRoW during construction around Leavenheath. There would be some temporary loss of amenity value during construction due to the presence of machinery and noise, dust and visual intrusion associated with a construction site. This would be short term and the effects reduced by the good practice measures in the CoCP and by placing signs around the area when disruption is likely to occur. No significant effects are anticipated.</p> <p><u>Other Development:</u> No assessment of effects on amenity has been undertaken by the developer. Construction would be phased, therefore it is considered that any impacts during construction would be short-term and temporary.</p> <p><u>Cumulative Effects:</u> In the absence of data from the other development, it is assumed that the effects from the other development on amenity would be low. It is also assumed that any impacts during construction would be short-term and temporary, therefore it is considered unlikely that there would be a significant cumulative effect during construction.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is unlikely to have any effects on amenity during operation once vegetation matures (see landscape and visual above). Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant

**ID APP-BMSDC-035: EDF Renewables, Tye Lane Solar Farm (application reference DC/21/04711)**

**Description:** Change of use from agricultural land to solar farm and construction and operation of a solar photovoltaic development with a capacity of up to 49.9MW with associated grid connection cable route, infrastructure and planting.

**Distance from Bramford to Twinstead Reinforcement Order Limits:** The solar farm is located approximately 0.93km from the Order Limits, however there is a proposed cable connection to Bramford Substation, adjacent to the Order Limits.

**Temporal overlap:** The developer has not yet obtained planning permission. For the purposes of the CEA it has been assumed that planning permission is granted and there is an overlap in construction. Construction would take approximately six months (Engena, 2021).

**Information used:** The summary of the other development assessment is based on the developer's ES (Engena, 2021) submitted with the application.

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
<b>Landscape and Visual</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Plateau Claylands and Rolling Valley Farmlands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011) and on the visual amenity of Bramford and Little Blakenham community areas during construction are assessed as not significant.</p> <p><u>Other Development:</u> The developer's ES (Engena, 2021) concludes that there would be no significant landscape or visual amenity effects as a result of the construction phase.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated due to the screening effects of the woodlands to the north and north-east of Bramford Substation. In addition, construction of the solar farm does not require high level activities and has relatively low levels of site traffic, which would also lessen the influence of any intervisibility.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Plateau Claylands and Rolling Valley Farmlands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011) and on the Bramford and Little Blakenham community areas are assessed as not significant during operation.</p> <p><u>Other Development:</u> The developer's ES (Engena, 2021) concludes that there would be significant landscape effects up to 0.4km from the site and significant visual effects on residential and recreational receptors close to the site, without specifying a distance.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated because the two projects are very different in character and appearance, and the low-level nature of the solar farm infrastructure combined with the high woodland cover precludes intervisibility.</p>	Not significant
<b>Biodiversity</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects on biodiversity during construction.</p> <p><u>Other Development:</u> The developer's ES (Engena, 2021) identified negligible adverse to moderate beneficial effects on biodiversity receptors.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the other development would have negligible adverse effects, therefore there is no potential for a cumulative effect.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects on biodiversity during operation as the project is reinstating vegetation and habitats that are lost.</p> <p><u>Other Development:</u> The developer's ES (Engena, 2021) identified negligible adverse to moderate beneficial effects on biodiversity receptors.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the other development would have negligible adverse effects, therefore there is no potential for a cumulative effect.</p>	Not significant
<b>Historic Environment (Setting of Heritage Assets)</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> No significant effects have been identified on the setting of heritage assets.</p> <p><u>Other Development:</u> A heritage technical note (Orion Heritage, 2022) identified no significant effects from the other development on the setting of heritage assets. Furthermore, the developer's ES (Engena, 2021) concludes that there would be no significant landscape or visual amenity effects as a result of the construction phase.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated given the surrounding properties would not undergo large degrees of setting change from construction activity.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The operational effects of the project would have a neutral effect on the six listed properties owing to distance from the Order Limits and no additional visual intrusion over the status quo.</p> <p><u>Other Development:</u> A heritage technical note (Orion Heritage, 2022) identified no significant effects from the project on the setting of heritage assets. The developer's ES (Engena, 2021) concludes that there would be significant landscape effects up to 0.4km from the site and significant visual effects on residential and recreational receptors close to the site, without specifying a distance.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the low-level nature of the solar farm infrastructure combined with the Bramford to Twinstead Reinforcement will not change the setting of heritage assets sufficiently to warrant a significant effect.</p>	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
Surface Water	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Taking into account good practice measures outlined in the CoCP the project would not have a significant effect on surface water receptors during construction.</p> <p><u>Other Development:</u> The developer's ES (Engena, 2021) concludes that the 'proposed development is not shown to be at risk from fluvial flood risk sources', though 'there is an area of surface water flood risk along the southern boundary of the site at Tye Lane, adjacent to an existing ditch/flow route into the River Gipping'. It is also stated that 'the solar farm is not anticipated to lead to a significant increase in surface water run-off rates' and it has been 'demonstrated that surface water at the site can be managed appropriately by adopting a sustainable and conservative approach'.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on water environment receptors during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Hydrogeology	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Significant effects on hydrogeology are not anticipated from the project during construction.</p> <p><u>Other Development:</u> Impacts on groundwater from the other development are assumed to be dealt with through the planning process and therefore there are not expected to be any significant effects.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on hydrogeology during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Contaminated Land	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> Significant effects on sensitive receptors from contaminated land are not anticipated from the project during construction.</p> <p><u>Other Development:</u> Impacts from contaminated land are assumed to be dealt with through the planning process and therefore there are not anticipated to be any significant effects.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on contaminated land during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Traffic and Transport	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours.</p> <p><u>Other Development:</u> The developer's ES (Engena, 2021) states that as 'predicted peak HGV movements are anticipated to exceed 220% of existing HGV movements along the stretch of Tye Lane between the B1113 junction and the site entrance, there could be significant disruption to local traffic at limited times during construction'. It is also stated that 'The predicted peak HGV movements is less than 30% of the existing HGV movements elsewhere on the road network and so is not significant on the B1113 and beyond.' The developer has proposed mitigation measures to reduce disruption to local traffic as far as possible.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Air Quality	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is predicted to produce negligible fugitive dust and plant emissions during construction. The project would not have a significant effect on air quality during construction following the implementation of the good practice measures in the CoCP.</p> <p><u>Other Development:</u> The developer's ES (Engena, 2021) does not provide an assessment of air quality, indicating that it has been scoped out of the assessment due to no likely significant effects.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated as the Bramford to Twinstead Reinforcement is predicted to produce negligible fugitive dust and plant emissions, therefore there is no potential for a cumulative effect.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate air quality effects during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
Noise and Vibration	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is expected to have no significant adverse effects during construction at receptors at this location.</p> <p><u>Other Development:</u> The developer's ES (Engena, 2021) states that <i>'The short-term effects of the construction phase would be controlled through the CEMP and may include some of the mitigation measures suggested within this chapter. This will ensure the noise impacts during the construction phase are suitably controlled and there are no residual effects due to the short-term nature of the construction phase.'</i> Neutral significance.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate noise during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant
Socio-economics	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project is considered unlikely to have a significant effect on socio-economics receptors during construction. Construction workforce numbers for the project are estimated at around 350 workers at peak construction (Q3 2025), with an average of around 180 workers on site across the whole of the construction schedule. National Grid expects that approximately 10% of workers would be local. Appendix 15.1: Cumulative Effects Baseline (<b>application document 6.3.15.1</b>) shows that there is sufficient bedspace available within the local and wider areas (including Ipswich and Colchester) to accommodate construction workers for the project.</p> <p><u>Other Development:</u> The developer's ES (Engena, 2021) states that construction of the other development would have the potential to benefit the local economy through the award of construction contracts and sub-contracts.</p> <p><u>Cumulative Effects:</u> In the absence of data from the other development, it assumed that impact on bedspace would be low from the other development and therefore it is considered unlikely that there would be a significant cumulative effect during construction.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement does not require any permanent relocation of staff or additional workforce during operation. Therefore, there would be no potential for cumulative effects with the other developments during operation.</p>	Not significant
Amenity (including recreation and tourism)	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The project will require short term closures and diversions of PRow during construction around Bramford Substation. These would be short term (during specific activities within construction). In addition, there would be some temporary loss of amenity value during construction due to the presence of machinery and noise, dust and visual intrusion associated with a construction site. This would be short term and the effects reduced by the good practice measures in the CoCP and by placing signs around the area when disruption is likely to occur. No significant effects are anticipated.</p> <p><u>Other Development:</u> The developer's ES (Engena, 2021) does not contain an assessment of effects on amenity, however it is stated that impacts on local tourism are not considered to be significant. The developer's ES also states that minimal non-significant impacts are predicted for users of PRow surrounding the other development.</p> <p><u>Cumulative Effects:</u> It is considered that there could be cumulative effects to amenity around Bramford Substation during construction due to the presence of two construction projects creating noise, dust and visual intrusion. The effects would be reduced by the CoCP and standard good practice measures employed on each project. It is therefore assumed that it is unlikely that there would be a significant cumulative effect during construction due to the rolling nature of the linear works for the Bramford to Twinstead Reinforcement and short-term and localised construction activities for the two developments.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is unlikely to have any effects on amenity during operation once vegetation matures (see landscape and visual above). Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant

**ID APP-BMSDC-036: Persimmon Homes Anglia, Phase 2 of Hadleigh East urban extension area (part of Core Strategy Policy CS6: Hadleigh) (application reference DC/19/05419)**

**Description:** Residential development of 273 dwellings and the development of approximately 5.5 hectares of B1, B2 and B8 employment uses, a 928sqm (60 place) pre-school site (class D1) and associated infrastructure and landscaping.

**Distance from Bramford to Twinstead Reinforcement Order Limits:** 1.5km.

**Temporal overlap:** Planning permission expires in May 2024. The development does not appear to be under construction. Assuming that construction starts at the latest date of May 2024 and dwellings are constructed at a rate of 50 dwellings per year, the residential element of the application would be expected to be completed in around 2029, therefore there would be a temporal overlap with the total duration of the Bramford to Twinstead Reinforcement construction phase.

**Information used:** The summary of the other development assessment is based on the developer's documentation submitted with the application. No ES was submitted with the application. Other documentation that has been used is referenced below.

<b>Landscape and Visual</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Plateau Claylands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), and on the Hadleigh community area are assessed as not significant during construction.</p> <p><u>Other Development:</u> The developer's DAS (John Long Planning, 2019) does not identify any significant adverse effects during construction.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated due to the distance between the project and the new residential development, and screening afforded by the intervening landform and vegetation.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Plateau Claylands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), is assessed as significant locally within approximately 1km reducing to not significant for the LCA as a whole. The effect on the Hadleigh community area is assessed as not significant during operation.</p> <p><u>Other Development:</u> The developer's DAS (John Long Planning, 2019) does not identify any significant adverse effects during operation.</p> <p><u>Cumulative Effects:</u> The residential nature of the other development and its location on the south-east side of Hadleigh means that it would appear as an extension to the town. No likely significant cumulative effects are anticipated with the project, which in this location comprises the replacement of the existing 132kV overhead line by the larger pylons on the proposed 400kV overhead line. In the event of any intervisibility one or both of the developments would be sufficiently distant from the visual receptor not to have a notable influence.</p>	Not significant
<b>Historic Environment (Setting of Heritage Assets)</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> No significant effects have been identified from detailed assessment.</p> <p><u>Other Development:</u> The DAS (John Long Planning, 2019) confirmed that the proposals would not have an impact on any designated above ground heritage features.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> No significant effects have been identified from detailed assessment.</p> <p><u>Other Development:</u> The DAS (John Long Planning, 2019) confirmed that the proposals would not have an impact on any designated above ground heritage features.</p> <p><u>Cumulative Effects:</u> Given the limited inter-visibility between the project and the designations within Hadleigh, it is unlikely that operational effects would be more than negligible adverse in scale. As there are no effects anticipated from the other development on the setting of listed buildings in this location, there would be no cumulative effects with the project during operation.</p>	Not significant
<b>Traffic and Transport</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours.</p> <p><u>Other Development:</u> The developer's Transport Assessment (MLM Consulting Engineers Limited, 2019) states that it is considered that the other development would have an immaterial impact on the local highway network.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The proposed development is included within the TEMPro growth factor, therefore to avoid duplication it is not assessed here.</p>	N/A

**ID APP-BMSDC-125: CEMEX Operations UK Ltd (application reference DC/18/00233)**

**Description:** Residential development of up to 190 homes including affordable homes, pre-school facility, with areas of landscaping and public open space, new access from Loraine Way and pedestrian and cycle links.

**Distance from Bramford to Twinstead Reinforcement Order Limits:** 1.9km.

**Temporal overlap:** Building control initial notice BC/21/04291/IN submitted in May 2021. Construction appears to be underway at time of this assessment. The construction programme is not known, however assuming that construction started in May 2021 and dwellings are constructed at a rate of 50 dwellings per year, construction would be expected to be completed in mid-to-late 2024, with up to a six month overlap in construction with the Bramford to Twinstead Reinforcement.

**Information used:** The summary of the other development assessment is based on the developer's documentation submitted with the application. No ES was submitted with the application. Other documentation that has been used is referenced below.

Aspect	Phase	Assessment	Potential for Significant Cumulative Effect
<b>Landscape and Visual</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Rolling Valley Farmlands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), and on the Bramford community area are assessed as not significant during construction.</p> <p><u>Other Development:</u> The Landscape Character and Visual Impact Assessment (Allen Pyke, 2018) does not assess construction effects.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated due to the distance between the project and the new residential development, and screening afforded by the intervening landform and vegetation.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Rolling Valley Farmlands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), and on the Bramford community area are assessed as not significant during construction.</p> <p><u>Other Development:</u> The Landscape Character and Visual Impact Assessment (Allen Pyke, 2018) concludes that the development would not result in any significant adverse effects on landscape character and would only result in significant adverse impacts on the visual amenity of walkers on footpaths adjacent to the site.</p> <p><u>Cumulative Effects:</u> The residential nature of the proposed residential development and its location on the north side of Bramford means that it would appear as an extension to the village. No likely significant cumulative effects are anticipated due to the distance between the two developments and the intervening landform and vegetation.</p>	Not significant
<b>Historic Environment (Setting of Heritage Assets)</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> No significant effects have been identified from the project on the setting of heritage assets.</p> <p><u>Other Development:</u> The Heritage Statement (Heritage Collective, 2018) identified only a limited impact to the setting of a listed building, which was not significant.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> No significant effects have been identified from the project on the setting of heritage assets.</p> <p><u>Other Development:</u> The Heritage Statement (Heritage Collective, 2018) identified only a limited impact to the setting of a listed building, which was not significant.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
<b>Traffic and Transport</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours.</p> <p><u>Other Development:</u> The developer's Transport Assessment (Vectos, 2018) states that the other development does not have a severe impact on junction performance within the developer's study network.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The proposed development would be above the TEMPro growth levels on some routes, however not on routes which are construction routes for the Bramford to Twinstead Reinforcement. The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant

**ID APP-BMSDC-209: Mr G Spanner, Valley Ridge (application reference 4494/16)**

**Description:** Valley Ridge (formerly known as SnOasis) – a ski centre, holiday resort, centre of winter sports excellence, leisure and associated uses and related on and off-site infrastructure.

**Distance from Bramford to Twinstead Reinforcement Order Limits:** 4.1km.

**Temporal overlap:** The developer's ES (BuroHappold Engineering, 2017) states that 'construction is expected to start in 2017 and complete in 2021', however construction did not start within this timeframe. The developer submitted a non-material amendment (DC/22/02002) requesting an extension to the development timing. This was granted and planning permission expired in December 2022. It is not known if construction has now started and the construction programme is not known – the developer's ES (BuroHappold Engineering, 2017) states that the other development would be constructed in eight phases and the developer expects the development to be operational in 2023/2024 (Valley Ridge website, 2022) though this could be out of date considering the extension to the development timing. For the purposes of the CEA it has been assumed that there would be a temporal overlap with the Bramford to Twinstead Reinforcement.

**Information used:** The summary of the other development assessment is based on the developer's ES (BuroHappold Engineering, 2017) submitted with the application.

<b>Landscape and Visual</b>	Construction	<p><b>Bramford to Twinstead Reinforcement:</b> The effects of the project on the landscape of the Ancient Plateau Claylands and Rolling Valley Farmlands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), and on the Great Blakenham, Little Blakenham and Baylham community areas are assessed as not significant during construction.</p> <p><b>Other Development:</b> The developer's ES (BuroHappold Engineering, 2017) concludes that at year 0 there would be adverse effects of moderate and major significance on some local residents and PRow users during construction and insignificant effects on landscape character.</p> <p><b>Cumulative Effects:</b> In the event of any overlap in construction activities, due to the distance between the project and the other development, and screening afforded by the intervening landform and vegetation, it is considered highly unlikely that there would be significant cumulative effects.</p>	Not significant
	Operation	<p><b>Bramford to Twinstead Reinforcement:</b> The effects of the project on the landscape of the Ancient Plateau Claylands and Rolling Valley Farmlands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), and on the Great Blakenham, Little Blakenham and Baylham community areas are assessed as not significant during construction.</p> <p><b>Other Development:</b> The developer's ES (BuroHappold Engineering, 2017) concludes that at year 0 there would be adverse effects of moderate and major significance on some local residents and PRow users but that by year 15, with the establishment of the proposed green infrastructure, the only significant adverse effects would be on uses of a single PRow. No significant effects are anticipated on landscape character.</p> <p><b>Cumulative Effects:</b> It is considered unlikely that there would be significant cumulative effects due to the distance between the two developments and the intervening buildings, landform and vegetation. The other development is located in a former quarry which when combined with the high woodland cover to the south of the site around Blackacre Hill would limit effects on the wider landscape and on views. In the event of any intervisibility one or both of the developments would be sufficiently distant from the visual receptor not to have a notable influence.</p>	Not significant
<b>Historic Environment (Setting of Heritage Assets)</b>	Construction	<p><b>Cumulative Effects:</b> Listed buildings at Little Blakenham lie between 2km and 2.8km north of the project Order Limits and comprise Elm Farmhouse (1251403), The Old Rectory (1263027) and adjacent Church of St Mary (1251408), Rose Cottage (1250943), Sycamore House (1250920) and Dairy Farmhouse (1263016). The construction work for the project would result in no change to the setting of these buildings resulting in a neutral effect. As there are no effects anticipated from the project on the setting of listed buildings in this location, there would be no cumulative effects with the other development during construction.</p>	Not significant
	Operation	<p><b>Cumulative Effects:</b> There would be a neutral effect from the project on the setting of listed buildings 4km to the north-east of the Order Limits, given distance and topography would eliminate any visual and historic relationship. As there are no effects anticipated from the project on the setting of listed buildings in this location, there would be no cumulative effects with the other development during operation.</p>	Not significant
<b>Traffic and Transport</b>	Construction	<p><b>Bramford to Twinstead Reinforcement:</b> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours.</p> <p><b>Other Development:</b> The developer's ES (BuroHappold Engineering, 2017) identified negligible effects on the A12 and A14 from construction traffic, and minor adverse effects on Bramford Road west and north from construction traffic.</p> <p><b>Cumulative Effects:</b> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><b>Cumulative Effects:</b> The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant

**ID APP-BMSDC-210: Taylor Wimpey (East London) Ltd, Chilton Woods Mixed Development (application reference B/15/01718)**

**Description:** Erection of up to 1,150 dwellings; 15ha of employment development; village centre; new vehicular access points and associated works; sustainable transport links; community woodland; open space; sustainable drainage (SuDS); sports pavilion and playing fields; allotments; and associated ancillary works.

**Distance from Bramford to Twinstead Reinforcement Order Limits:** 6.1km.

**Temporal overlap:** The development will be constructed in phases (Phase 1: 500 homes; Phase 2: 400 homes; Phase 3: 250 homes). The developer has obtained planning permission for reserved matters of Phase 1 (Infrastructure) in April 2021 (DC/20/05183), Phase 1 (residential) in September 2021 (DC/21/02764) and Phase 2 (DC/22/02336) in December 2022. A reserved matters application for Phase 3 (DC/22/05231) was submitted in October 2022 and is awaiting decision. The developer's ES (Amec Foster Wheeler, 2015) provides an indicative construction phasing programme, with work starting in 2019 and completion by 2035. Building control initial notice BC/21/01560/IN submitted in February 2021 states that building work has started. Therefore a temporal overlap with the total duration of the Bramford to Twinstead Reinforcement construction programme has been assumed.

**Information used:** The summary of the other development assessment is based on the developer's ES (Amec Foster Wheeler, 2015) and ES addendum (Amec Foster Wheeler, 2017) documentation submitted with the application.

<b>Landscape and Visual</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Rolling Farmlands defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011) is assessed as significant locally within approximately 1km reducing to not significant for the LCA as a whole. The effects on the Sudbury, Acton, Long Melford and Chilton community areas are assessed as not significant during construction.</p> <p><u>Other Development:</u> The developer's ES (Amec Foster Wheeler, 2015) concludes that there would be some moderate levels of landscape effect including on the Ancient Rolling Farmlands LCT but concludes that these effects are not significant. It scopes out visual effects during construction.</p> <p><u>Cumulative Effects:</u> Due to the distance between the project and the proposed residential development, and screening afforded by the intervening landform and vegetation, no likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Rolling Farmlands defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), and on the Sudbury, Acton, Long Melford and Chilton community areas are assessed as not significant during operation.</p> <p><u>Other Development:</u> The developer's ES (Amec Foster Wheeler, 2015) concludes that there would be no significant landscape effects and that by year 10 any significant adverse visual effects on users of the local PRow and road network would reduce to not significant.</p> <p><u>Cumulative Effects:</u> The residential nature of the other development and its location on the north side of Sudbury means that it would appear as an extension to the town. No likely significant cumulative effects are anticipated due to the distance between the two developments and the screening afforded by the intervening buildings, landform and vegetation.</p>	Not significant
<b>Historic Environment (Setting of Heritage Assets)</b>	Construction	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is located 6.1km away from the other development and there are no listed buildings within the Zone of Theoretical Visibility that would overlap with the other development. As there are no effects anticipated from the project on the setting of listed buildings in this location, there would be no cumulative effects with the other development during construction.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The operational project would have a neutral effect on listed buildings, Sudbury conservation area, listed buildings in Sudbury and Chilton Hall historic park and garden. As there are no effects anticipated from the project on the setting of listed buildings in this location, there would be no cumulative effects with the other development during operation.</p>	Not significant
<b>Traffic and Transport</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours.</p> <p><u>Other Development:</u> The developer's ES (Amec Foster Wheeler, 2015) identified that there would not be significant effects on traffic and transport. The other development does not use the same construction route access junctions as Bramford to Twinstead Reinforcement.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant



**ID APP-BMSDC-226: Pigeon Investment Management Ltd and Mr J Cutting (application reference 1856/17)**

**Description:** Phased development for the erection of up to 269 dwellings and affordable housing, together with associated infrastructure.

**Distance from Bramford to Twinstead Reinforcement Order Limits:** 5.2km.

**Temporal overlap:** An Initial Notice application (application reference BC/22/05259/IN) was approved in April 2022. Assuming that construction started in 2022 and dwellings are constructed at a rate of 50 dwellings per year, the development is likely to have been constructed by around 2027. Therefore, there is a potential temporal overlap of approximately three years with Bramford to Twinstead Reinforcement.

**Information used:** The summary of the other development assessment is based on the developer's documentation submitted with the application. No ES was submitted with the application. Other documentation that has been used is referenced below.

<b>Landscape and Visual</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Estate Claylands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), and on the Barham community area are assessed as not significant during construction.</p> <p><u>Other Development:</u> The developer's LVA (BMD, 2017) does not appear to come to any assessment conclusions about the potential for significant landscape or visual effects. Mid Suffolk District Council's EIA Screening Opinion (2022) stated that it was considered that there would not be significant effects on landscape and visual amenity.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated due to the distance between the project and the proposed residential development, and screening afforded by the intervening landform and vegetation.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Estate Claylands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), and on the Barham community area are assessed as not significant during operation.</p> <p><u>Other Development:</u> The developer's LVA (BMD, 2017) does not appear to come to any assessment conclusions about the potential for significant landscape or visual effects. Mid Suffolk District Council's EIA Screening Opinion (2022) stated that it was considered that there would not be significant effects on landscape and visual amenity.</p> <p><u>Cumulative Effects:</u> The residential nature of the proposed residential development and its location to the east of the A14 and Norwich Road means that it would appear as an extension to Claydon village. No likely significant cumulative effects are anticipated due to the distance between the two developments and the intervening A14 road corridor and Gipping Valley with its commercial and industrial developments.</p>	Not significant
<b>Historic Environment (Setting of Heritage Assets)</b>	Construction	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is located 5.2km away from the other development and there are no listed buildings within the Zone of Theoretical Visibility that would overlap with the other development. As there are no effects anticipated from the project on the setting of listed buildings in this location, there would be no cumulative effects with the other development during construction.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> There will be a neutral effect from the project on the listed buildings at Claydon given the distance in between them and the project. As there are no effects anticipated from the project on the setting of listed buildings in this location, there would be no cumulative effects with the other development during operation.</p>	Not significant
<b>Traffic and Transport</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours.</p> <p><u>Other Development:</u> Mid Suffolk District Council's EIA Screening Opinion (2022) states that traffic movements are 'unlikely to have the potential to result in significant environmental effects and are capable of mitigation without the need for an EIA.'</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The proposed development would be above the TEMPro growth levels on some routes, however not on routes which are construction routes for the Bramford to Twinstead Reinforcement. The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant

**ID APP-SCC-049: Brockley Wood Ventures Ltd (application reference SCC/0105/22B)**

**Description:** Extraction, processing, sale and distribution of sand and gravel, associated processing of inert waste materials and concrete batching with associated plant and related sales and distribution, access works and phased restoration, using inert recovered and imported materials, and aftercare plan. Restoration will involve the phased infilling using suitable inert fill and replacing retained soils to return the site to agricultural use.

**Distance from Bramford to Twinstead Reinforcement Order Limits:** 3.5km.

**Temporal overlap:** The developer has not yet obtained planning permission. For the purposes of the CEA it has been assumed that planning permission is granted and there is an overlap in construction. The developer's ES (NWA Planning, 2022) states that the development will take place in four broadly sequential phases and is estimated to take place over a period of approximately 15 years.

**Information used:** The summary of the other development assessment is based on the developer's ES (NWA Planning, 2022) and other documentation submitted with the application.

<b>Landscape and Visual</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Estate Farmlands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), and on the Belstead community area are assessed as not significant during construction.</p> <p><u>Other Development:</u> The developer's LVIA (Wynne-Williams Associates, 2022) concludes that during the 15-year extraction phase, the effects on the landscape of the site and visual effects on users of PRoW crossing the site would be substantial. No assessment appears to have been made of the effects on the landscape surrounding the site. Some moderate adverse visual effects are also identified for users of the local PRoW network and residents of a nearby farm outside of the site.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated due to the distance between the project and the proposed sand and gravel site development, and screening afforded by the intervening landform and vegetation.</p>	Not significant
	Operation	<p><u>Bramford to Twinstead Reinforcement:</u> The effects of the project on the landscape of the Ancient Estate Farmlands LCA defined in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), and on the Belstead community area are assessed as not significant during operation.</p> <p><u>Other Development:</u> The developer's LVIA (Wynne-Williams Associates, 2022) concludes that by year 15 following infilling of the quarry, there would be no significant landscape or visual effects, with the exception of a moderate/substantial benefit predicted for users of a local PRoW due to screening of the A12 road corridor by the quarry proposals.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated due to the nature of the other development and its location at some distance from the project on the south-west side of Ipswich between the A12 and existing woodlands.</p>	Not significant
<b>Historic Environment (Setting of Heritage Assets)</b>	Construction	<p><u>Cumulative Effects:</u> The three listed buildings (1036891, 1285790 and 1351634) in between the A12 and the historic London Road lie 3km south-east of the Order Limits and construction activity related to the dismantling of the 132kV overhead line for the project would have a neutral effect on these heritage assets. As there are no effects anticipated from the project on the setting of listed buildings in this location, there would be no cumulative effects with the other development during construction.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Order Limits are at such distance from the three listed properties that the operational phase of the project would have a neutral effect. As there are no effects anticipated from the project on the setting of listed buildings in this location, there would be no cumulative effects with the other development during operation.</p>	Not significant
<b>Traffic and Transport</b>	Construction	<p><u>Bramford to Twinstead Reinforcement:</u> The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours.</p> <p><u>Other Development:</u> The developer's ES (NWA Planning, 2022) states that 'the proposed development scheme at Brockley Wood, Belstead, Suffolk would not give rise to any significant road safety or capacity issues either in terms of direct access and impact on the local network'.</p> <p><u>Cumulative Effects:</u> No likely significant cumulative effects are anticipated.</p>	Not significant
	Operation	<p><u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.</p>	Not significant

## 4. Inter-Project CEA for Other Known Developments

4.1.1 The CEA for other known developments (National Grid projects that do not require further consents) that were progressed to Stage 3 of the CEA in ES Appendix 15.4: Shortlist of Other Developments (**application document 6.3.15.4**) is presented in Table 4.1. The information used for the CEA is a combination of the project descriptions provided by the National Grid project teams (and presented within the heading for each other known development in Table 4.1) and assumptions made about the projects based on previous project experience.

Table 4.1 – Inter-Project CEA for Other Known Developments

Aspects for CEA Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect	
<b>ID OKD-NGET-001: National Grid Electricity Transmission (National Grid Network Options Assessment (NOA) code BRRE)</b>			
<b>Description:</b> Uprating the circuits on the remainder of Bramford to Braintree to Rayleigh route between Twinstead/Braintree/Rayleigh. Note the Bramford – Twinstead stretch has already been completed in 2011. Refurbishment of the remainder of the circuit, works would include fittings, insulators and conductor replacement. Approximately 100 workers would be required for the installation works and there would be approximately 10 abnormal loads.			
<b>Distance from Bramford to Twinstead Reinforcement Order Limits:</b> Within the Order Limits at Twinstead and westwards from the Tee.			
<b>Temporal overlap:</b> Works are likely to be undertaken between 2023 and 2024 over approximately 160 days (not continuous). There is potential for a small overlap in construction with Bramford to Twinstead Reinforcement.			
<b>Information used:</b> The description has been provided by National Grid. In the absence of assessment information assumptions have been made about the other development based on knowledge of similar projects.			
<b>Landscape and Visual</b>	Construction	<u>Cumulative Effects:</u> Due to the small scale and nature of the works for the reconductoring works, which would be present at each pylon location for a short period of time, even if undertaken in close proximity and during the same timeframe as construction of the project, it is considered unlikely that there would be significant cumulative landscape or visual effects.	Not significant
	Operation	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore considered unlikely that there would be significant cumulative landscape or visual effects.	Not significant
<b>Biodiversity</b>	Construction	<u>Cumulative Effects:</u> Due to the small scale and nature of the works for the reconductoring works, which would be present at each pylon location for a short period of time, even if undertaken in close proximity and during the same timeframe as construction of the project, it is considered unlikely that there would be significant cumulative effects on biodiversity.	Not significant
	Operation	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore considered unlikely that there would be significant cumulative effects on biodiversity.	Not significant
<b>Historic Environment (Setting of Heritage Assets)</b>	Construction	<u>Cumulative Effects:</u> Due to the small scale and nature of the works, which would be present at each pylon location for a short period of time, even if undertaken in close proximity and during the same timeframe as construction of the project, it is considered unlikely that there would be significant cumulative effects on the setting of listed buildings.	Not significant
	Operation	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore there would be no significant cumulative effects on the setting of listed buildings.	Not significant
<b>Surface Water</b>	Construction	<u>Cumulative Effects:</u> Works for the other development within the study area are already completed and the remainder of the circuit would be located outside of the project study catchments and would be expected to be very minor given the nature of the works (refurbishment of circuits) and activities involved. Given the lack of common hydrological receptors there would be no cumulative effects.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on water during operation. Therefore, there would be no potential for cumulative effects during operation.	Not significant
<b>Hydrogeology</b>	Construction	<u>Cumulative Effects:</u> The refurbishment works would have no interaction with groundwater therefore there are unlikely to be any significant cumulative effects in combination with the other development.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on hydrogeology during operation. Therefore, there would be no potential for cumulative effects during operation.	Not significant
<b>Contaminated Land</b>	Construction	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore there are unlikely to be any significant cumulative effects on contaminated land during construction.	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on contaminated land during operation. Therefore, there would be no potential for cumulative effects during operation.	Not significant
<b>Traffic and Transport</b>	Construction	<u>Cumulative Effects:</u> As the worker numbers would be low and spread over a large geographical area it is considered unlikely that there would be a significant cumulative effect on traffic and transport during construction.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects during operation.	Not significant
<b>Air Quality</b>	Construction	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore considered unlikely that there would be significant cumulative effects on air quality.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate air quality effects during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Noise and Vibration</b>	Construction	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore considered unlikely that there would be significant cumulative effects on noise and vibration.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate noise during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Socio-economics</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project is considered unlikely to have a significant effect on socio-economics receptors during construction. Construction workforce numbers for the project are estimated at around 350 workers at peak construction (Q3 2025), with an average of around 180 workers on site across the whole of the construction schedule. National Grid expects that approximately 10% of workers would be local. Appendix 15.1: Cumulative Effects Baseline ( <b>application document 6.3.15.1</b> ) shows that there is sufficient bedspace available within the local and wider areas (including Ipswich and Colchester) to accommodate construction workers for the project. <u>Other Development:</u> The works are small in scale and nature (anticipating 100 workers over the whole line). The limited reconductoring works would be spread over a long length of overhead line, so would not be in any locations for a long duration. It is considered that any impacts during construction would be short-term and temporary. <u>Cumulative Effects:</u> As the worker numbers would be low and spread over a large geographical area it considered unlikely that there would be a significant cumulative effect during construction.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement does not require any permanent relocation of staff or additional workforce during operation. Therefore, there would be no potential for cumulative effects during operation.	Not significant
<b>Amenity (including recreation and tourism)</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project will require short term closures and diversions of PRow during construction along its length. These would be short term (during specific activities within construction). In addition, there would be some temporary loss of amenity value during construction due to the presence of machinery and noise, dust and visual intrusion associated with a construction site. This would be short term and the effects reduced by the good practice measures in the CoCP and by placing signs around the area when disruption is likely to occur. No significant cumulative effects are anticipated. <u>Other Development:</u> The works are small in scale and nature, and works would not be continuous. It is considered that any impacts during construction would be short-term and temporary. <u>Cumulative Effects:</u> It is considered unlikely that there would be cumulative effects on amenity during construction due to the very limited and localised nature of the reconductoring works.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is unlikely to have any effects on amenity during operation once vegetation matures (see landscape and visual above). Therefore, there would be no potential for cumulative effects during operation.	Not significant

**ID OKD-NGET-002: National Grid Electricity Transmission (National Grid NOA code NBRE)**

**Description:** Uprating of the Bramford to Norwich Main circuit. Note one circuit has already been refurbished. Refurbishment of the other circuit, works would include fittings, insulators and conductor replacement. Approximately 100 workers would be required for the installation works and there would be approximately 20 abnormal loads.

**Distance from Bramford to Twinstead Reinforcement Order Limits:** Within the Order Limits at Bramford and heading north from this point.

**Temporal overlap:** Works are being undertaken between 2022 and 2024 over approximately 320 days (not continuous). There is potential for a small overlap in construction with Bramford to Twinstead Reinforcement.

**Information used:** The description has been provided by National Grid. In the absence of assessment information assumptions have been made about the other development based on knowledge of similar projects.

<b>Landscape and Visual</b>	Construction	<u>Cumulative Effects:</u> Due to the small scale and nature of the works, which would be present at each pylon location for a short period of time, even if undertaken in close proximity and during the same timeframe as construction of the project, it is considered unlikely that there would be significant cumulative landscape or visual effects.	Not significant
	Operation	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore considered unlikely that there would be significant cumulative landscape or visual effects.	Not significant
<b>Biodiversity</b>	Construction	<u>Cumulative Effects:</u> Due to the small scale and nature of the works, which would be present at each pylon location for a short period of time, even if undertaken in close proximity and during the same timeframe as construction of the project, it is considered unlikely that there would be significant cumulative effects on biodiversity.	Not significant
	Operation	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore considered unlikely that there would be significant cumulative effects on biodiversity.	Not significant
<b>Historic Environment (Setting of Heritage Assets)</b>	Construction	<u>Cumulative Effects:</u> Due to the small scale and nature of the works for the reconductoring works, which would be present at each pylon location for a short period of time, even if undertaken in close proximity and during the same timeframe as construction of the project, it is considered unlikely that there would be significant cumulative effects on the setting of listed buildings.	Not significant
	Operation	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore there would be no significant cumulative effects on the setting of listed buildings.	Not significant
<b>Surface Water</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> Part of the project would be located in the Belstead Brook catchment. Taking into account good practice measures outlined in the CoCP the project would not have a significant effect on surface water receptors during construction. <u>Other Development:</u> Given the nature of the works (uprating of circuits) significant effects on surface water receptors are considered unlikely. <u>Cumulative Effects:</u> Both the Bramford to Twinstead Reinforcement and the proposed works are in the Belstead Brook catchment but effects would be managed through standard good practice measures. Therefore, no significant cumulative effect are anticipated on surface water receptors.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on water during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Hydrogeology</b>	Construction	<u>Cumulative Effects:</u> The refurbishment works would have no interaction with groundwater therefore there are unlikely to be any significant cumulative effects.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on hydrogeology during operation. Therefore, there would be no potential for cumulative effects during operation.	Not significant
<b>Contaminated Land</b>	Construction	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore considered unlikely that there would be any significant cumulative effects on contaminated land during construction.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on contaminated land during operation. Therefore, there would be no potential for cumulative effects during operation.	Not significant
<b>Traffic and Transport</b>	Construction	<u>Cumulative Effects:</u> As the worker numbers would be low and spread over a large geographical area it is considered unlikely that there would be a significant cumulative effect on traffic and transport during construction.	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Air Quality</b>	Construction	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore considered unlikely that there would be significant cumulative effects on air quality.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate air quality effects during operation. Therefore, there would be no potential for cumulative effects during operation.	Not significant
<b>Noise and Vibration</b>	Construction	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore considered unlikely that there would be significant cumulative effects on noise and vibration.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate noise during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Socio-economics</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project is considered unlikely to have a significant effect on socio-economics receptors during construction. Construction workforce numbers for the project are estimated at around 350 workers at peak construction (Q3 2025), with an average of around 180 workers on site across the whole of the construction schedule. National Grid expects that approximately 10% of workers would be local. Appendix 15.1: Cumulative Effects Baseline ( <b>application document 6.3.15.1</b> ) shows that there is sufficient bedspace available within the local and wider areas (including Ipswich and Colchester) to accommodate construction workers for the project. <u>Other Development:</u> The works are small in scale and nature (anticipating 100 workers over the whole line). The limited reconductoring works would be spread over a long length of overhead line, so would not be in any locations for a long duration. It is considered that any impacts during construction would be short-term and temporary. <u>Cumulative Effects:</u> As the worker numbers would be low and the works have a very small overlap with the Bramford to Twinstead Reinforcement Order Limits, it is considered unlikely that there would be a significant cumulative effect during construction.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement does not require any permanent relocation of staff or additional workforce during operation. Therefore, there would be no potential for cumulative effects with the other developments during operation.	Not significant
<b>Amenity (including recreation and tourism)</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project will require short term closures and diversions of PRow during construction along its length. These would be short term (during specific activities within construction). In addition, there would be some temporary loss of amenity value during construction due to the presence of machinery and noise, dust and visual intrusion associated with a construction site. This would be short term and the effects reduced by the good practice measures in the CoCP and by placing signs around the area when disruption is likely to occur. No significant cumulative effects are anticipated. <u>Other Development:</u> The works are small in scale and nature, and works would not be continuous. It is considered that any impacts during construction would be short-term and temporary. <u>Cumulative Effects:</u> It is considered unlikely that there would be cumulative effects on amenity during construction due to the very limited and localised nature of the reconductoring works.	Not significant
	Operation	<u>Cumulative Effects:</u> The works are uprating and refurbishment of the existing circuits. Maintenance requirements (including worker numbers) would be small in scale and nature. It is considered that there would be no adverse effects during operation, and therefore there is no potential for cumulative effects during operation.	Not significant

ID OKD-NGET-003: National Grid Electricity Transmission (National Grid NOA code BPRE)			
<p><b>Description:</b> Uprating of the Pelham/Braintree/Rayleigh circuit (from Twinstead Tee to the west). One circuit has been completed already. Refurbishment of the other circuit, works would include fittings, insulators and conductor replacement. Approximately 100 workers would be required for the installation works and there would be approximately 10 abnormal loads.</p> <p><b>Distance from Bramford to Twinstead Reinforcement Order Limits:</b> Within the Order Limits at Twinstead and westwards.</p> <p><b>Temporal overlap:</b> Works are likely to be undertaken between 2026 and 2027 over approximately 160 days (not continuous). There is potential for a two year overlap in construction with Bramford to Twinstead Reinforcement.</p> <p><b>Information used:</b> The description has been provided by National Grid. In the absence of assessment information assumptions have been made about the other development based on knowledge of similar projects.</p>			
<b>Landscape and Visual</b>	Construction	<u>Cumulative Effects:</u> Due to the small scale and nature of the works which would be present at each pylon location for a short period of time, even if works are undertaken in close proximity and during the same timeframe as construction of the project, it is considered unlikely that there would be significant cumulative landscape or visual effects.	Not significant
	Operation	<u>Cumulative Effects:</u> Although the other development is located in close proximity to the project, due to the scale of the other development, which is small, it is considered unlikely that there would be significant cumulative landscape or visual effects.	Not significant
<b>Biodiversity</b>	Construction	<u>Cumulative Effects:</u> Due to the small scale and nature of the works, which would be present at each pylon location for a short period of time, even if undertaken in close proximity and during the same timeframe as construction of the project, it is considered unlikely that there would be significant cumulative effects on biodiversity.	Not significant
	Operation	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore considered unlikely that there would be significant cumulative effects on biodiversity.	Not significant
<b>Historic Environment (Setting of Heritage Assets)</b>	Construction	<u>Cumulative Effects:</u> Due to the small scale and nature of the works which would be present at each pylon location for a short period of time, even if works are undertaken in close proximity and during the same timeframe as construction of the project, it is considered unlikely that there would be significant cumulative effects on the setting of listed buildings.	Not significant
	Operation	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore considered unlikely that there would be significant cumulative effects on the setting of listed buildings.	Not significant
<b>Surface Water</b>	Construction	<u>Cumulative Effects:</u> The majority of the works would be located outside of the project study catchments and effects would be expected to be very minor given the nature of the activities involved. It is therefore considered unlikely there would be a significant cumulative effect on surface water receptors during construction.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on water during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Hydrogeology</b>	Construction	<u>Cumulative Effects:</u> The refurbishment works would have no interaction with groundwater therefore there are unlikely to be any significant cumulative effects.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on hydrogeology during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Contaminated Land</b>	Construction	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore considered unlikely that there would be significant cumulative effects on contaminated land during construction.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on contaminated land during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Traffic and Transport</b>	Construction	<u>Cumulative Effects:</u> As the worker numbers would be low and the nature of the works is small it is considered unlikely that there would be a significant cumulative effect on traffic and transport during construction.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate any effects on traffic and transport during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Air Quality</b>	Construction	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore considered unlikely that there would be significant cumulative effects on air quality.	Not significant

Aspects for CEA	Construction / Operation	Assessment of Cumulative Effect Between the Bramford to Twinstead Reinforcement and the Other Development	Potential for Significant Cumulative Effect
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate air quality effects during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Noise and Vibration</b>	Construction	<u>Cumulative Effects:</u> Although the works are located in close proximity to the project, the scale and nature of the works is small and it is therefore considered unlikely that there would be significant cumulative effects on noise and vibration.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement is not expected to generate noise during operation. Therefore, there would be no potential for cumulative effects with the other development during operation.	Not significant
<b>Socio-economics</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project is considered unlikely to have a significant effect on socio-economics receptors during construction. Construction workforce numbers for the project are estimated at around 350 workers at peak construction (Q3 2025), with an average of around 180 workers on site across the whole of the construction schedule. National Grid expects that approximately 10% of workers would be local. Appendix 15.1: Cumulative Effects Baseline ( <b>application document 6.3.15.1</b> ) shows that there is sufficient bedspace available within the local and wider areas (including Ipswich and Colchester) to accommodate construction workers for the project. <u>Other Development:</u> The works are small in scale and nature (anticipating 100 workers over the whole line). The limited reconductoring works would be spread over a long length of overhead line, so would not be in any locations for a long duration. It is considered that any impacts during construction would be short-term and temporary. <u>Cumulative Effects:</u> As the worker numbers would be low and the works have a very small overlap with the Bramford to Twinstead Reinforcement Order Limits, it considered unlikely that there would be a significant cumulative effect during construction.	Not significant
	Operation	<u>Cumulative Effects:</u> The Bramford to Twinstead Reinforcement does not require any permanent relocation of staff or additional workforce during operation. Therefore, there would be no potential for cumulative effects with the other developments during operation.	Not significant
<b>Amenity (including recreation and tourism)</b>	Construction	<u>Bramford to Twinstead Reinforcement:</u> The project will require short term closures and diversions of PRoW during construction along its length. These would be short term (during specific activities within construction). In addition, there would be some temporary loss of amenity value during construction due to the presence of machinery and noise, dust and visual intrusion associated with a construction site. This would be short term and the effects reduced by the good practice measures in the CoCP and by placing signs around the area when disruption is likely to occur. No significant cumulative effects are anticipated. <u>Other Development:</u> The works are small in scale and nature, and works would not be continuous. It is considered that any impacts during construction would be short-term and temporary. <u>Cumulative Effects:</u> It is considered unlikely that there would be cumulative effects on amenity during construction due to the very limited and localised nature of the reconductoring works.	Not significant
	Operation	<u>Cumulative Effects:</u> The works are uprating and refurbishment of the existing circuits. Maintenance requirements (including worker numbers) would be small in scale and nature. It is considered that there would be no adverse effects during operation, and therefore there is no potential for cumulative effects during operation.	Not significant



## 5. Summary of Inter-Project Cumulative Effects

### 5.1 Introduction

5.1.1 This section summarises the potential significant inter-project cumulative effects presented in the tables in Chapters 2, 3 and 4 of this appendix.

### 5.2 Landscape and Visual

#### Landscape and Visual During Construction

5.2.1 The inter-project CEA has identified the potential for significant cumulative effects on landscape during construction assuming that the Bramford to Twinstead Reinforcement is undertaken at the same time (and in the same locality) as the following other developments:

- East Anglia THREE (ID DCO-001) (specifically construction of the converter station). The main contributor to these effects would be construction of East Anglia THREE, which would have significant effects on landscape character and visual amenity in some locations; and
- Stoke-by-Nayland Golf Course development (ID APP-BMSDC-025). The main contributor to these significant effects would be construction of the underground cable component of the project, which would be within 350m of the works to construct the other development.

5.2.2 If these other developments were to be constructed at the same time as the Bramford to Twinstead Reinforcement, the combined visual intrusion of two adjacent construction sites on the landscape could result in significant effects. There is no mitigation proposed as it is not possible to screen the constructions sites, as the screening itself could create a visual intrusion. The likely temporal overlap of both projects is likely to be limited and therefore the likely significant effect is anticipated to be short term.

#### Landscape and Visual During Operation

5.2.3 The combined presence of multiple Other Developments around Bramford Substation have the potential to result in **significant landscape and visual effects** during operation. The other developments with the potential for significant cumulative effects with the Bramford to Twinstead Reinforcement are:

- East Anglia THREE (ID DCO-001) proposed converter station; During operation, significant cumulative landscape and visual effects could arise in relation to East Anglia THREE (ID DCO-001). The main contributor would be the converter station component of East Anglia THREE rather than the project. There is considered to be the potential for significant landscape effects in Year 1 due to the combined presence of the proposed 400kV overhead line and converter station. This is anticipated to become not significant once the mitigation planting matures (identified as year 20 in the proposed applicant's ES); and
- East Anglia GREEN (ID DCO-019) two new 400kV overhead lines. During operation, significant cumulative landscape and visual effects could arise from the combined presence of the proposed 400kV overhead line component of the project and the two new 400kV overhead lines associated with East Anglia GREEN (ID DCO-019). The effects would be greatest close to Bramford Substation where multiple lines are already present and the new lines associated with East Anglia GREEN would be most intervisible and would add to the overall influence of high voltage electricity infrastructure. The presence of these projects would have an indirect effect on the landscape and would adversely affect visual amenity, particularly to the north and east of Bramford Substation.

5.2.4 There is the potential for significant cumulative effects around Bramford Substation due to the presence of a number of large infrastructure projects. This is anticipated to result in a significant cumulative effect to landscape and views immediately around Bramford Substation.

### 5.3 Biodiversity

5.3.1 No significant cumulative effects are anticipated for biodiversity during construction or operation. If habitat loss during construction was to occur for all the other developments at the same time this is not considered to result in significant cumulative effects as this loss is short term and reinstatement will take place at the end of the construction period where practicable. In addition, it is reasonable to assume that the other developments would be undertaken in accordance with all relevant legislation, species licences and planning permissions and discussions would have been undertaken through that process with relevant stakeholders, such as Natural England. Therefore, any cumulative risks would be managed through the regulatory process. Given the above, significant cumulative effects are considered to be unlikely.

### 5.4 Historic Environment (Setting of Heritage Assets)

5.4.1 No significant cumulative effects on the setting of heritage assets are anticipated.

5.4.2 During construction, the project would have minor adverse effects on the setting of some heritage assets, however it is considered that these effects would be temporary and short term, therefore it is considered that there is limited potential for significant cumulative effects on the setting of heritage assets during construction.

5.4.3 During operation, the project would have minor adverse effects on the setting of some heritage assets, given the potential additional visual intrusion associated with the new overhead line. In combination with East Anglia GREEN (ID DCO-019), there is potential for additional visual intrusion for some heritage assets around Bramford substation resulting from the new overhead lines, however it is considered that there would not be significant cumulative effects on the setting of heritage assets due to the extent to which the area is already affected by the substation and assorted overhead lines.

## 5.5 Surface Water

5.5.1 No inter-project cumulative effects on flood risk (from rivers, surface water or groundwater sources) or water quality are anticipated. This is due to the relatively limited floodplain extents within the ZOI and the requirements of national planning policy regarding development and flood risk, whereby applicants are required to demonstrate (as a condition of securing planning consent) that development is designed to be safe from flooding and have no detriment on flood risk elsewhere. Other developments within the ZOI would also be required to demonstrate the sustainable management of surface water runoff and drainage and to adopt good practice measures in relation to pollution prevention. Given the above, significant cumulative effects are considered to be unlikely.

## 5.6 Contaminated Land and Hydrogeology

5.6.1 No significant cumulative effects are anticipated for contaminated land and hydrogeology during construction or operation. If all the other developments identified were to be undertaken at the same time, significant cumulative effects could be possible if large scale dewatering was being undertaken at the same time as the project and within areas of significant contamination. However, only one area of dewatering has been identified on the project, which is within an area where other developments are not currently anticipated and no significant potential sources of contamination have been identified within the project's Order Limits. In addition, it is reasonable to assume that the other developments would be undertaken in accordance with all relevant legislation, consents, permits and planning permissions and discussions would have been undertaken through that process with relevant stakeholders, such as the Environment Agency. Therefore, any cumulative risks would be managed through the regulatory process. Given the above, significant cumulative effects are considered to be unlikely.

## 5.7 Traffic and Transport

5.7.1 No significant cumulative effects for traffic and transport during construction or operation are anticipated. The roads that would experience the largest percentage increase in traffic from construction vehicles are generally on minor roads off the A131, A134, and B1113. The increases in traffic on the LRN are considered to be negligible and would not impact upon the operation and performance of the LRN during peak hours, therefore there is no potential for significant cumulative effects on the LRN and SRN during construction. The operational impact of some of the other developments (where 'near certain' or 'more than likely') has already been captured within the future baseline assessment through the use of TEMPro growth factors, therefore CEA has not been carried out in order to avoid duplication, although further detailed assessment was undertaken on specific routes to exclude some of the larger developments. Given the above, significant cumulative effects are considered to be unlikely.

## 5.8 Air Quality

5.8.1 No significant cumulative effects are anticipated for air quality during construction or operation. There are a number of other developments which overlap or are within 500m of the Order Limits. Many of these are of a similar type of development to the project and thus the effects of the construction of these on local air quality is also judged to be negligible. Where assessment has been undertaken for these developments the effects on local air quality have been concluded to be negligible. Cumulative impacts with other developments from the construction phase are therefore judged to be not significant. No operational effects are anticipated from the Bramford to Twinstead Project in relation to air quality. Given the above, significant cumulative effects are considered to be unlikely.

## 5.9 Noise and Vibration

5.9.1 No significant cumulative effects for noise and vibration during construction or operation are anticipated. It is expected that other developments brought forward would be subject to National and Local Policy as well as legislative requirements and application of best practicable means to reduce noise and vibration, and would be required to ensure that mitigation and control measures are adopted during construction and operation of the other developments. Given the above, significant cumulative effects are considered to be unlikely.

## 5.10 Socio-economics

5.10.1 No significant cumulative effects on socio-economic receptors are anticipated during construction or operation.

5.10.2 During construction, it is considered that due to the nature and scale of the other developments, including those around Bramford, construction impacts on local businesses would be short-term, temporary and localised. Therefore, it is considered unlikely that there would be a significant cumulative effect on local businesses during construction.

5.10.3 Construction workforce numbers for the project are estimated at around 350 workers at peak construction (Q3 2025), with an average of around 180 workers on site across the whole of the construction schedule. National Grid expects that approximately 10% of workers would be local. Approximately 50% of workers would be expected to stay in caravan or camping accommodation, and 20% of workers

each would stay in short-term let properties or serviced accommodation (bed and breakfasts or hotels). Appendix 15.1: Cumulative Effects Baseline (**application document 6.3.15.1**) shows that there is sufficient bedspace available within the local and wider areas (including Ipswich and Colchester) to accommodate construction workers for the project. Assumed construction workforce numbers associated with the other developments are not considered to be of a volume sufficient to have a significant effect on available bedspace. Therefore, it is considered that there is sufficient bedspace available at a sub-regional level to accommodate the project and the other development and therefore there would not be a significant cumulative effect on available bedspaces in the region during construction.

- 5.10.4 Due to the nature of the project, there would not be a permanent operational workforce. Workers would be occasionally required for operational maintenance, however this would be the same staff that are used to maintain the existing overhead line and other National Grid assets within the region. Therefore, there would be no change to the use of tourist accommodation over the existing baseline and there is no potential for adverse effects, and in turn, no potential for cumulative effects on available bedspace in the region during operation.
- 5.10.5 In combination with other developments, for example the A12 Chelmsford to A120 Widening Scheme (DCO-002), East Anglia GREEN (DCO-019), and the solar farm proposals around Bramford, there could be a beneficial effect on employment in the East of England through job creation during construction. It is anticipated that this beneficial effect would not significantly contribute to the local or regional economy. Given the above, significant cumulative effects are considered to be unlikely.

## **5.11 Amenity (including Recreation and Tourism)**

- 5.11.1 No significant cumulative effects on amenity (including recreation and tourism) receptors are anticipated during construction or operation.
- 5.11.2 During construction, it is considered that due to the nature and scale of the other development, including those around Bramford, construction impacts on local amenity (such as disruption to access) would be short-term, temporary and localised. Therefore, it is considered unlikely that there would be a significant cumulative effect during construction.
- 5.11.3 During operation, the project could result in a cumulative change in the character and nature of the rural local area, with a subsequent impact on the amenity of the local area and visitor desirability, when combined with the potential impacts from other developments around Bramford (including East Anglia GREEN (DCO-019) and the solar farm proposals). However, it is considered that the cumulative effects from the project and the other developments is unlikely to contribute to a cumulative effect in this regard, due to the nature of the works and permanent features in this area. Given the above, significant cumulative effects are considered to be unlikely.

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