Ardleigh Parish Council Response to National Grid Norwich to Tilbury DCO Application

Report on Proposed Route Alignment and EACN Substation Siting in Ardleigh

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Table of Contents

1 INTRODUCTION 4

2 SUMMARY 5

3 OUTLINE OF THE PROPOSALS FOR ARDLEIGH 7

4 IMPACT ON AGRICULTURAL LAND 8

5 IMPACT ON THE HISTORIC ENVIRONMENT 10

6 IMPACT ON NATURE AND NATURAL BEAUTY 18

7 ROUTE ALIGNMENT AND PYLON TYPE 22

8 LOCATION OF THE EACN SUBSTATION 28

9 CUMULATIVE HARM 31

10 SAFETY AND SECURITY RISKS 31

11 CONCLUSIONS 33

APPENDIX A-1: ARDLEIGH VILLAGE CENTRE 35

APPENDIX B-1: AGRICULTURAL LAND CLASSIFICATION – ARDLEIGH 36

APPENDIX B-2: AGRICULTURAL LAND CLASSIFICATION – ENGLAND 37

APPENDIX C-1: DESIGNATED AND NON-DESIGNATED HERITAGE ASSETS – STATUTORY CONSULTATION – ORIGINAL NGET MAP 38

APPENDIX C-2: DESIGNATED AND NON-DESIGNATED HERITAGE ASSETS – STATUTORY CONSULTATION – MODIFIED NGET MAP 39

APPENDIX C-3: DESIGNATED HERITAGE ASSETS – DCO APPLICATION 40

APPENDIX C-4: NON-DESIGNATED HERITAGE ASSETS – DCO APPLICATION 41

APPENDIX C-5: PHOTOGRAPHS OF THE GRADE II* LISTED ST MARY'S CHURCH (1112060) TAKEN FROM THE SURROUNDING LANDSCAPE 42

APPENDIX C-6: PHOTOGRAPHS OF THE SURROUNDING LANDSCAPE TAKEN FROM THE GRADE II* LISTED ST MARY'S CHURCH (1112060) 46

APPENDIX D-1: LOCAL GREEN SPACE 1 – FISHING LAKE NORTH OF COLCHESTER ROAD 48

APPENDIX D-2: LOCAL GREEN SPACE 6 – GLEBE CORNER LAND 49

APPENDIX D-3: LITTLE BROMLEY ROAD 50

APPENDIX D-4: ARDLEIGH RESERVOIR 51

APPENDIX E-1: COST INCREASE DUE TO THE CURRENTLY PROPOSED ROUTE DIVERSION TO ARDLEIGH 53

APPENDIX F-1: PYLON TYPES – "ILLUSTRATIVE LABELLED SUSPENSION LATTICE PYLON" 54

APPENDIX F-2: PYLON TYPES – "ILLUSTRATIVE LABELLED ANGLE LATTICE PYLON" ... 55

APPENDIX G-1: ALIGNMENT OF TOWERS TB-1 TO TB-21 56

APPENDIX H-1: ALTERNATIVE NORTH FALLS AND FIVE ESTUARIES CONNECTION OPTIONS 58

1 Introduction

This report supplements previous submissions relating to the Norwich to Tilbury proposals from Ardleigh Parish Council and Little Bromley Parish Council. It builds on details relating to specific aspects of the proposed design and is presented as an overview, with greater detail provided in the associated Appendices and in the referenced documents.

Previous submissions by the two villages include responses to National Grid at the various consultation stages and representations to the Planning Inspectorate as part of the DCO Examination process. The associated Relevant Representation numbers are:

- Ardleigh Parish Council: RR-0300
- Little Bromley Parish Council: RR-2172

Various submissions from Ardleigh PC are referenced in this document. Documents relating to the various National Grid consultations are all available on the Ardleigh PC website[1]. Direct links to key Ardleigh PC submissions specifically referred to in this document are provided below:

- Ardleigh PC main submission NG statutory consultation July 2024 (pdf)[2]
- Ardleigh PC submission to NG- Historic Environment (pdf)[3]
- Ardleigh PC Response to N2T Targeted Consultation 27 March 2025 (pdf)[4]

This report has not been prepared by an expert on behalf of the Parish Council. It covers a number of areas in which the Parish Council cannot profess to have internal expertise. However, it has been produced through extensive research (without the use of A.I), with references to source material appropriately identified. Other material has been identified and produced as the result of local knowledge and it is the Parish Council's fortune to have identified members of the community who are extremely knowledgeable, if not qualified experts. This should not devalue the points raised in the report, which have been identified as areas of key concern to the local community and so has been produced to assist the Examining Authority to consider those concerns and provide the basis for focused questioning of the applicant.

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[1] https://ardleigh.website/pylons-and-substations

[2] https://img1.wsimg.com/blobby/go/35e229d7-0729-4580-8608-6221bf69b316/downloads/Ardleigh%20PC%20submission%20NG%20stat%20consultation%20Ju.pdf?ver=1767845648545

[3] https://img1.wsimg.com/blobby/go/35e229d7-0729-4580-8608-6221bf69b316/downloads/Ardleigh%20PC%20submission%20to%20NG-%20Historic%20Environ.pdf?ver=1767845648545

[4] https://img1.wsimg.com/blobby/go/35e229d7-0729-4580-8608-6221bf69b316/downloads/64413f24-25b9-4267-b36a-3603b318f801/APC%20Response%20to%20N2T%20Targeted%20Consultation%2027%20M.pdf?ver=1767845648485

2 Summary

National Grid's proposals for the Norwich to Tilbury project include the siting of a new substation in the village of Ardleigh. This substation is referred to by National Grid as the East Anglia Connection Node ("EACN").

As can be seen from the plans submitted by National Grid, providing a connection at this location requires a major diversion from the main Norwich to Tilbury route alignment. This report shows how this would result in very significant and permanent harm both along the proposed cable route and at the proposed substation site. It would also result in a significant increase in the cost of this section of the route.

The harms discussed include:

- the loss of productive farmland, including nationally important Grade 1 BMV land
- very significant harm to high value heritage assets, including many listed buildings and a scheduled monument site
- impact on the adjacent Dedham Vale National Landscape
- loss of local biodiversity, including historic hedgerows
- loss of valued Local Green Spaces

The harms would be compounded by the convoluted route required for the overhead lines, as this requires more pylons than a straight alignment and a high proportion of the pylons would be high visual impact angle pylons. A consequence of this is a significant increase in visual impact in an area with a high amenity value.

In addition to being very harmful, the proposal for this section of the route is costly in monetary terms. Costs estimates using the latest (2025) IET data show that this diversion would result in an additional cost of £154m, effectively doubling the cost of the cable infrastructure in this section of the route. This figure is also likely to be an underestimate due to the particularly high level of complexity in the route alignment.

The issues highlighted demonstrate wholesale non-compliance with the Holford and Horlock Rules and aspects of the National Policy Statements and the Electricity Act 1989. These requirements in combination provide fundamental guidance for good design. The significance of this guidance became very clear when assessing the proposals.

There is no need for the proposed EACN substation to be sited in the Ardleigh area and therefore no need for such a harmful option to be selected for the associated cable route. Alternatives discussed show how even a small amount of offshore coordination would remove substantial constraints in the routing. This would reduce the monetary cost and result in a huge reduction in the harm.

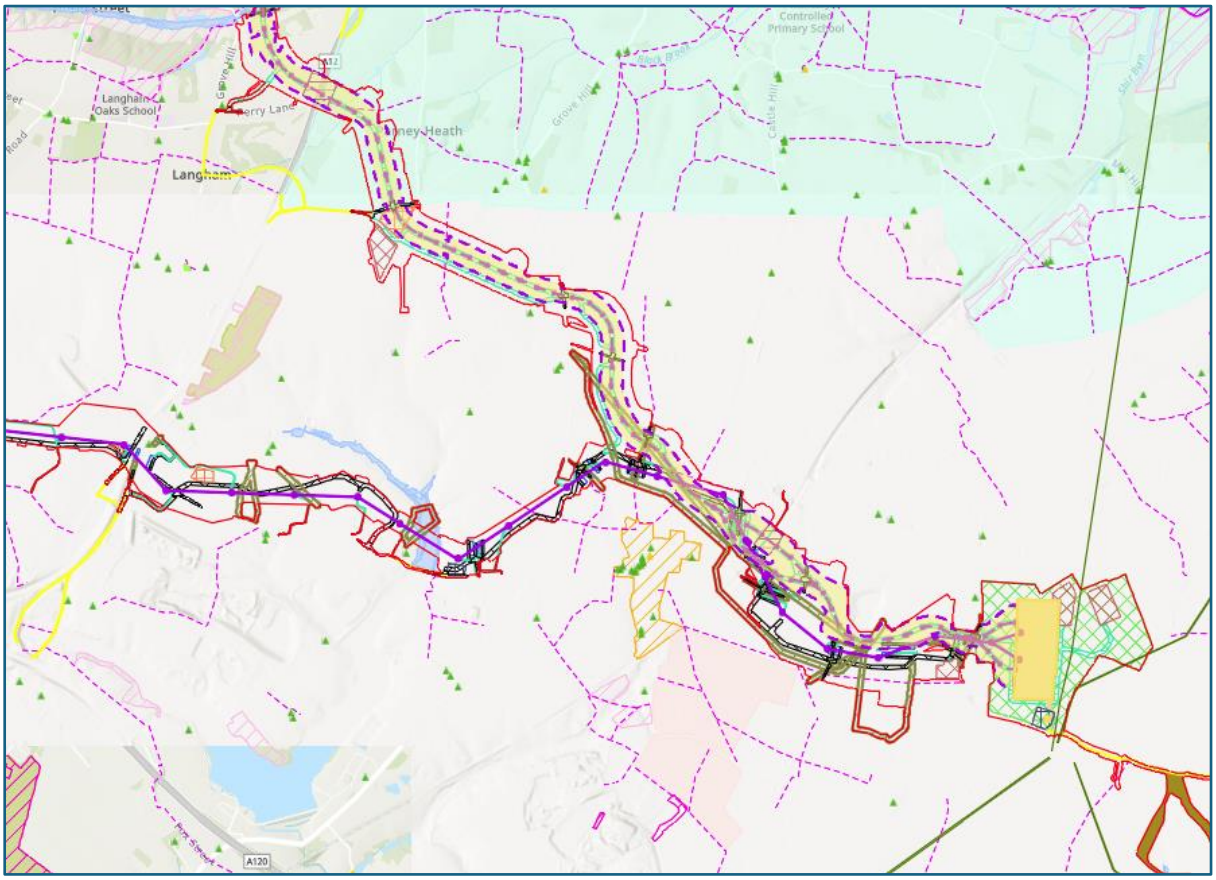
As the EACN substation would serve as an energy hub, the substantial cumulative impact of this and collocated developments must be thoroughly assessed and considered. It is currently proposed that the North Falls and Five Estuaries windfarm substations plus the proposed Tarchon Energy interconnector would connect at EACN. Plans for a BESS nearby have been consented, which adds to the potential developments in an area that is currently prime farmland. The extent of the proposals would lead to the industrialisation of two historic rural villages and the surrounding landscape on a scale that is difficult to comprehend.

The local and national safety/security risks associated with locating so much nationally significant infrastructure in one area are discussed. The severe impact of the proposals on BMV farmland in the area also impacts food security. There is increasing recognition of how important UK agriculture is to food security which is a vital element of national security.

Despite extensive engagement from the local community at the various National Grid consultations, the concerns raised were not addressed. This includes not considering detailed local knowledge in relation to the impact on high value heritage assets, such as a site of high archaeological potential in Ardleigh that would be severely impacted by the proposals.

3 Outline of the Proposals for Ardleigh

3.1 The map below shows the National Grid proposals for Ardleigh, as copied from the NGET 2025 DCO Submission Norwich to Tilbury "Interactive Map"[5].



3.2 The proposals broadly entail HVAC underground cables entering the Parish from the Dedham Vale in the north and leading to the proposed East Anglia Connection Node ("EACN") substation to the east of Ardleigh. A HVAC Overhead Line would then exit the EACN site in a generally westerly direction, encircling Ardleigh village centre, before heading in a south westerly direction towards Tilbury.

3.3 The EACN substation would serve as an energy hub for connection of the proposed North Falls and Five Estuaries windfarm substations plus the proposed Tarchon Energy interconnector converter station.

3.4 The cumulative impact of these developments, should they proceed, is difficult to overstate and it would lead to the industrialisation of a historic rural village and the surrounding landscape.

[5] https://norwichtotilburymap.nationalgrid.com/2025

4 Impact on Agricultural Land

4.1 As stated in the Ardleigh Neighbourhood Plan 2020 – 2033[6], *"The defining character of the Parish is as a working agricultural settlement"*. The Parish also has a *"notable agricultural economy"*. The agricultural heritage is captured in the design of the village sign located in the centre of the village, as shown in Appendix A-1.

4.2 The village name of Ardleigh is derived from two Anglo Saxon words - Ard (High) and Ley (Pasture). The name stems from the fact that the village is located on a plateau and emphasises the agricultural land use, which continues to this day.

4.3 In the Parish there are extensive areas of Grade 1 (*"excellent"*) and Grade 2 (*"very good quality"*) *"best and most versatile"* land, the use of which would be hugely impacted by the proposals.

4.4 Not only would a significant amount of both the underground and the overhead cable routes traverse the land but the proposed site for the EACN substation is centred on an area of Grade 1 BMV land. This is shown in the image in Appendix B-1. The separately proposed North Falls, Five Estuaries windfarm substations and the Tarchon interconnector converter station would also be collocated in the vicinity.

4.5 The Agricultural Land Classification map for the whole of England shown in Appendix B-2 highlights the rarity of Grade 1 land. From Environment Agency and DEFRA data only around 4% of the total area of *"best and most versatile"* (ALC Grade 1, 2 and 3) agricultural land in England is ALC Grade 1[7]. It should be noted though that some areas of Grade 1 land such as the Fens are at risk of flooding due to peat-based soil and rising sea levels. The Environment Agency and DEFRA report states that *"of the total area of ALC Grade 1 land in England (323,000ha), 58% is located within the floodplain"*. This therefore puts a premium on Grade 1 land located in areas such as Ardleigh where there is a much lower risk of flooding.

4.6 Agriculture in the village would be severely affected by the proposals. For example, the land take on one farm from both overhead lines and underground cables would make the business completely unviable. Another farm, which is a highly successful fruit business supplying major UK supermarkets, anticipates that it would have to close with the loss of over 200 jobs due to the scale of disruption incurred during construction. This arises from issues such as access

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6 https://legacy.tendringdc.gov.uk/sites/default/files/documents/planning/Planning_Policy/Ardleigh/Ardleigh%20Neighbourhood%20Plan.pdf

7 https://assets.publishing.service.gov.uk/media/602f9a08d3bf7f72154fabb6/Developing_the_evidence_base_to_describe_the_impact_of_FCERM_on_agricultural_land_use_Summary.pdf

to the packing facility and dust contamination. As soft fruit is sold unwashed even the slightest risk of dust contamination cannot be tolerated. These and other businesses are discussed in detail in the document *"Ardleigh PC submission NG stat consultation July 2024"*.

4.7 Natural England states: *"The Agricultural Land Classification (ALC) provides a method for assessing the quality of farmland to enable informed choices to be made about its future use within the planning system. It helps underpin the principles of sustainable development."*[8]

4.8 This information, which is freely available in the public domain, should have been a key consideration at a very early stage in the design process.

4.9 The proposal would also severely impact several other rural businesses in Ardleigh. Examples include a stud farm that provides care for high value racehorses, a vibrant social venue that has become an important hub for the community and tourism businesses such as a caravan park. These businesses are integral to the rural economy. The social venue mentioned, for example, is located at a vineyard. All these examples are in close proximity to the proposed overhead lines. Further details are provided in the *"Ardleigh PC main submission NG statutory consultation July 2024"*[9].

[8] https://naturalengland-defra.opendata.arcgis.com/datasets/Defra::provisional-agricultural-land-classification-alc-england/about

[9] https://img1.wsimg.com/blobby/go/35e229d7-0729-4580-8608-6221bf69b316/downloads/Ardleigh%20PC%20submission%20NG%20stat%20consultation%20Ju.pdf?ver=1767845648545

5 Impact on the Historic Environment

5.1 Ardleigh has a very rich heritage. The planned cable routes and EACN substation would cause great harm to the many highly valued heritage assets in the area.

5.2 Very significant archaeological discoveries have been made in the village, which is believed to have been continuously settled for more than 3,000 years.

5.3 As part of the Ardleigh Parish Council response to the 2024 Norwich to Tilbury Statutory Consultation, a survey of heritage assets within the Parish was conducted. A total of 88 heritage assets were identified and the impact of the proposal on each of these was assessed. This included a total of 71 Listed Buildings, a Conservation Area, a Scheduled Monument and a vast array of non-designated heritage assets, including the routes of Roman Roads. Further information is provided in the *"Ardleigh PC submission to NG- Historic Environment"* submitted for the Statutory Consultation in July 2024.

5.4 Subsequently, a further 19 heritage assets have been added to the Ardleigh Parish Council survey bringing the total to 107.

5.5 At the optioneering stage of the project, a very cursory assessment of the baseline historic environment would show that there was a risk of significant harm to high value heritage assets. The rich heritage of the area is well known, and readily available data shows a continuous chain of designated and non-designated heritage assets along the proposed cable route. The same applies to the proposed EACN sub-station site, where there is evidence of a junction between two Roman Roads as well as a lot of evidence of previous settlements.

5.6 The issue is clearly demonstrated in *"Figure A11.1: Historic Environment Designated and Non-Designated Heritage Assets: Drawing No. 10059280-ARC-ELS-ZZ-DR-ZZ-00188"*, as presented by NGET at the 2024 Statutory Consultation and copied here as Appendix C-1. Supplementary information is provided in Appendix C-2, which was produced for the report *"Ardleigh PC submission to NG- Historic Environment"* submitted for the Statutory Consultation in July 2024. The additions came from information in reports supplied by NGET for the Statutory Consultation and from information held locally.

5.7 Appendix C-3 and Appendix C-4 are copies of the designated and non-designated heritage assets maps supplied by NGET as part of the DCO application.

5.8 Unfortunately, the DCO submission does not include a single map showing both designated and non-designated heritage assets even though such a map was produced for the Statutory Consultation. This makes it difficult to appreciate the full impact on heritage assets. The issue was raised with NGET in November 2025 and the following response received: *"...We have not produced a singular*

map which shows both designated and non-designated heritage assets and do not have any plans to include this at a later stage of the examination"[10]

5.9 The non-designated heritage assets map shown in Appendix C-4 also does not consider the additional assets highlighted by Ardleigh PC in its Statutory Consultation submission, as shown in the modified map in Appendix C-2. These are the Areas A & B, as identified in EAA Report 90 and additional information on the Roman Roads 3033/3035 and MEX9020 which intersect the proposed EACN site. (MEX9020 is the reference number used in the EACN Substation Geophysical Survey Report obtained by NGET.)

Ardleigh Conservation Area (CA26)

5.10 There is a very high concentration of heritage assets in the Ardleigh Conservation Area (CA26). These include:

- **17 Listed Buildings out of a total of 71 Listed Buildings in the Parish**. One of these is the Grade II* Church of St Mary (1112060). The remaining 16 are Grade II. ***It is important to note that Figure 11.2 in National Grid's DCO application (APP-217) only shows 1 of the 17 listed buildings in the Ardleigh Conservation Area.***
- **19 Local List candidates**. These are additional to the heritage assets identified in the Ardleigh Parish Council survey and are buildings in the Conservation Area that are proposed for Local List assessment in the Tendring District Council *"Ardleigh Conservation Area Character Appraisal and Management Plan"*[11]. The process of approving the Tendring District Local List is still ongoing, but, whatever the outcome, the attributes of these buildings and their contribution to the area has been established through an independent assessment process. The Ardleigh Conservation Area Character Appraisal and Management Plan was highlighted to NGET in Ardleigh PC's submission to the statutory consultation.

5.11 This concentration of heritage assets helps illustrate the high aggregative value of the Ardleigh Conservation Area (CA26). The value is further enhanced by its proximity to Scheduled Monument (1002146).

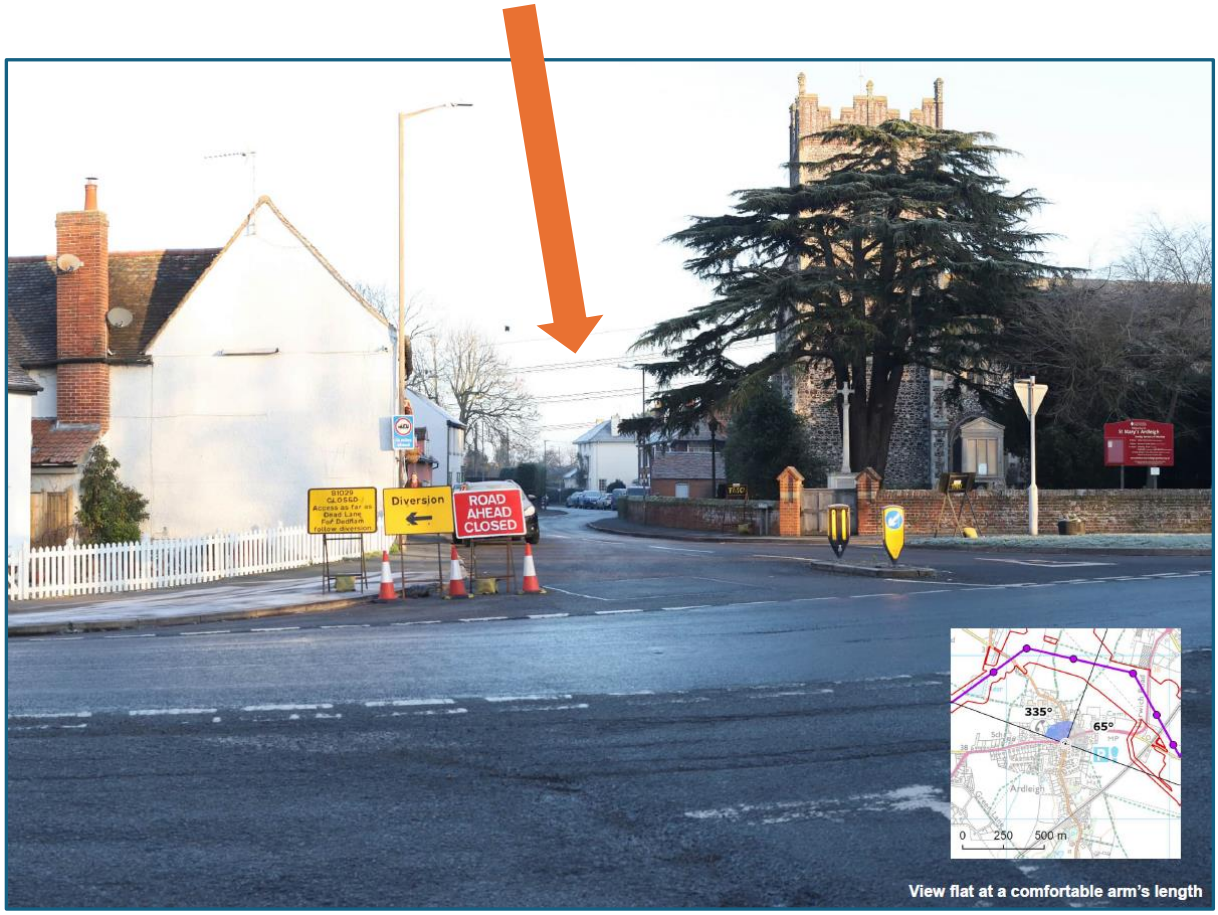
5.12 In addition to impacting the heritage assets directly the Norwich to Tilbury proposals would also impact their curtilage and therefore further increase the harm caused. The Tendring District Council *"Ardleigh Conservation Area Character Appraisal and Management Plan"* for example refers to key views from

[10] Re [EXTERNAL] RE Historic Environment Designated and Non-Designated Heritage Assets Map.pdf

[11] https://legacy.tendringdc.gov.uk/sites/default/files/documents/planning/Appendix%20A%20%20Ardleigh%20Conservation%20Area%20Character%20Appraisal%20and%20Management%20Plan.pdf

the Conservation Area. This impact on these views is discussed in *"Ardleigh PC submission to NG- Historic Environment"* submitted for the Statutory Consultation in July 2024.

5.13 It is DCO application National Grid has only supplied visualisations for one Historic Environment viewpoint in the Parish of Ardleigh, which is "HE25". This however shows that overhead lines would be visible from the centre on the Ardleigh Conservation Area (CA26) and from the Grade II* listed St Mary's Church (1112060). A section from the HE25 image is copied below, with an arrow added here (in orange) to show the overhead lines that would be introduced to the setting.



5.14 The prominence of the Grade II* listed St Mary's Church (1112060) in the landscape would be severely impacted by the overhead line that is proposed to surround it.

5.15 The Tendring District Council *"Ardleigh Conservation Area Character Appraisal and Management Plan"*[12] discusses the importance of the Church as a *"Landmark Building"*.

5.16 St Mary's Church (1112060) is visible from many points around the village. Views both to and from the Church would be severely harmed by the proposed pylons, which would dominate the landscape around the village centre.

5.17 The Church tower is approximately 22 metres tall at the highest point (the corner turrets)[13]. As the proposed pylons vary between approximately 50 and 60 metres in height, the Church would become subordinate to the pylons.

5.18 To illustrate, Appendix C-5 shows current views of the Church from several footpaths around the village and Appendix C-6 shows current views of the landscape from the top of the Church tower. The latter set of images illustrate the flatness of the landscape. By way of example, the Horsley Cross Water Tower is highlighted in the images: a structure much lower than the proposed pylons and significantly further away than the pylons would be.

Scheduled Monument (1002146)

5.19 The Scheduled Monument (1002146) has the title: *"Crop mark site S of Ardleigh"*. It consists of crop circles showing bronze age burial sites, ditches and trackways and has produced a huge number of archaeological finds from the earliest Neolithic finds through the Bronze Age, Roman, Iron Age and Saxon periods. One of the largest Bronze Age urnfields ever discovered in England was found near Vinces Farm. This shows that Ardleigh was a flourishing community in the years 1400BC to 800BC. A Roman pottery kiln was also located on this site.

5.20 The setting is an important consideration in respect to heritage assets and with tall infrastructure proposed to be sited adjacent to the Scheduled Monument in Ardleigh the setting would be substantially and permanently harmed. The site is on a plateau in a landscape which has not changed substantially since these early settlements existed.

5.21 Images such as the paintings by Roger Massey-Ryan, crop marks, field patterns and other recorded evidence of the settlements, help in visualising this important stage in the history of the village within the context of the current landscape.

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12 https://legacy.tendringdc.gov.uk/sites/default/files/documents/planning/Appendix%20A%20%20Ardleigh%20Conservation%20Area%20Character%20Appraisal%20and%20Management%20Plan.pdf

13 Tower height measured at 22 metres (72 feet) from ground level to the top of the corner turrets that extend above the crenellations. Confirmed using a tape measure by Christopher Hamblin and David Wright on 5 January 2026.

Bronze Age Landscape at Ardleigh, c.1200 BC. (Painting by: Roger Massey-Ryan)

5.22 The nearest pylon to the Scheduled Monument would be TB6. This is an angle tower which would be only 162m away. The proposed EACN substation is only around 1km away. The result would be cumulative visual impact from both the overhead lines and the EACN substation across the entire Scheduled Monument site. This is clearly illustrated in the Zone of Theoretical Visibility (ZTV) maps supplied by NGET. The harm to the setting would be compounded by the removal of ancient trees (including oaks) and hedgerows from the nearby lane, Little Bromley Road, as part of the construction activities.

5.23 The repositioning of pylons TB5 and TB6 from the north to the south of Little Bromley Road, as presented as part of the *"Essex 2"* targeted consultation in 2025, increased the harm to the setting of the Scheduled Monument. The change involved TB5 and TB6 being positioned significantly closer to the Scheduled Monument site and TB6 also becoming an angle pylon. The consequence would be that the 7 towers closest to the Scheduled Monument site (TB4 to TB10) would be the most visually intrusive types: 5 angle pylons and 2 extended height, suspension towers (TB8 and TB9). The extended height towers are needed where the OHL is planned to cross the railway. Each of these would be 59.8m high.

Non-Designated Assets near Scheduled Monument site

5.24 The proximity of the proposed infrastructure to land immediately to the north of the Scheduled Monument *"Crop mark site S of Ardleigh"* (1002146) is also of great concern in relation to non-designated heritage assets in the area.

At the closest point the proposed Order Limit aligns with the northern boundary of the Scheduled Monument site.

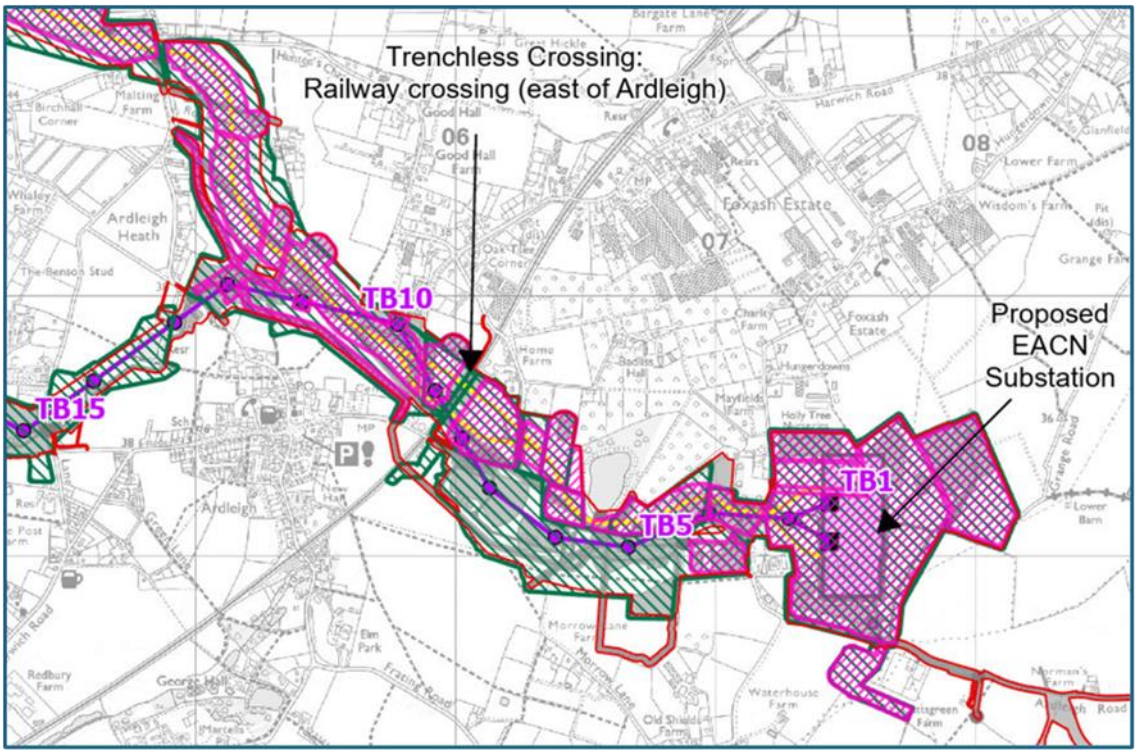
5.25 There is much evidence to suggest that the ancient settlements were not limited to the site of the Scheduled Monument. The current site boundary defines the extent of the excavation undertaken when the site was initially explored and it is understood that the work was limited by financial constraints. In a similar manner a boundary to the west is arbitrary as it is defined by the railway, which was built thousands of years after the Bronze Age settlement. There is known to be unexcavated archaeology in the area surrounding the Scheduled Monument. The whole area has the title *"The Ardleigh cropmark complex"*, of which the Scheduled Monument (1002146) only forms part. Evidence of the archaeology here is for example provided in the report "The Archaeology of Ardleigh, Essex: Excavations 1955-1980[14].

5.26 The high archaeological potential of this area was highlighted to NGET in Norwich to Tilbury consultation submissions from Ardleigh PC and from concerned residents.

5.27 In the Ardleigh PC Historic Environment submission for the 2024 statutory consultation the inadequacy of geophysical survey techniques on the soils in this area was highlighted, as established in NGET's 2024 *"EACN Substation Geophysical Survey Report"*. The issue was highlighted again in the Ardleigh PC response to the 2025 *"Essex 2"* targeted consultation where NGET documentation showed that geophysical survey results were still being extensively relied upon for locating infrastructure in this archaeologically sensitive area.

5.28 Despite this feedback, it is noted that the area of concern was still treated as a *"priority geophysical survey"* area, as denoted by the green cross hatching around pylons TB5 to TB8 in the following figure, as opposed to a *"priority archaeological trial trenching"* area. The image was obtained from page 13 of *"Figure 11.4 – Historic Environment – Geophysical Survey and Archaeological Trial Trenching Priority Areas"*, submitted by NGET as part of the DCO application.

[14] The Archaeology of Ardleigh, Essex: Excavations 1955-1980 by N.R. Brown East Anglian Archaeology Report No. 90, 1999 ISBN 1 85281 164 1



5.29 Extensive construction works are proposed for this area and without very thorough archaeological investigation at this stage, the appropriate decisions cannot be made in relation to the project.

5.30 Overarching National Policy Statement for energy (EN-1)[15] makes provision for heritage assets that are not currently designated, as follows:

> *"5.9.5 There are heritage assets that are not currently designated, but which have been demonstrated to be of equivalent significance to designated heritage assets of the highest significance. These are: ...those that have yet to be formally assessed by the Secretary of State, but which have potential to demonstrate equivalent significance to Scheduled Monuments..."*
>
> **and**
>
> *"5.9.6 Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to Scheduled Monuments or Protected Wreck Sites should be considered subject to the policies for designated heritage assets [234].*
>
> *[234] There will be archaeological interest in a heritage asset if it holds, or may potentially hold, evidence of past human activity worthy of expert investigation at some point."*

5.31 As there are heritage assets in this area *"which have potential to demonstrate equivalent significance to Scheduled Monuments"* or *"may*

[15] https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1

potentially hold, evidence of past human activity worthy of expert investigation at some point" these *"should be considered subject to the policies for designated heritage assets"*. It can therefore be concluded that any development of the site would be in breach of the Overarching National Policy Statement for energy (EN-1). The NPPF has similar provisions.

5.32 It is also noted that while archaeological discoveries can be made both prior to and during construction, the NPPF is very clear is stating in paragraph 211 *"...the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted"*.

6 Impact on Nature and Natural Beauty

6.1 The current proposals would have a very significant impact on the rich biodiversity of the Ardleigh area and the places that people visit to enjoy nature, with the accompanying health benefits that this brings. ESNP report *"Norwich to Tilbury Project Green Book Analysis"*[16] illustrates the importance in considering the potential loss of health and recreation benefits.

6.2 This section briefly discusses the impact of the proposals on a few examples of the green spaces in Ardleigh.

6.3 The withdrawn and new NPS EN-5 state, *"2.9.3. Electricity networks infrastructure pose a particular potential risk to birdlife including large birds, such as swans and geese, and perching birds. These may collide with overhead lines and risk being electrocuted. Large birds may also be electrocuted when landing or taking off by completing an electric circuit between live and ground wires. Even perching birds can be killed as soon as their wings touch energised parts of the infrastructure"*.

6.4 The impact on bird life in Ardleigh would be very pronounced. For example, where the overhead lines are planned significant populations of swans and geese are regularly seen, and skylarks nest in fields impacted by the proposals.

6.5 Various local nature observations have been recorded in iNaturalistUK by residents. This includes observations of swans, geese and skylarks.

Local Green Spaces

6.6 Several Local Green Spaces are listed in the Ardleigh Neighbourhood Plan.

6.7 Tendring District Council decided by resolution at Cabinet on 21 October 2024 to 'make' the Ardleigh Neighbourhood Development Plan under Section 38A(4) of the Planning and Compulsory Purchase Act 2004 (as amended). These spaces are therefore now afforded protection as part of the Development Plan for Tendring.

6.8 The *"Ardleigh PC submission to NG- Historic Environment"* report submitted for the Statutory Consultation in July 2024, discusses in detail the impact of the proposals on the Local Green Spaces which have historical connections. Two of the Local Green Spaces are highlighted here:

6.9 **Local Green Space 1: Fishing lake north of Colchester Road**. The description for Local Green Space 1 from the Ardleigh Neighbourhood Plan 2020 - 2033 states: "*Parts of the site support beautiful, far-reaching public views to be had both across the arable landscape and back towards the settlement edge. These*

[16] https://drive.google.com/file/d/1wzDN4s12PT2Alk3K5H7w23qqoWri4T6j/view

views are genuinely representative of the Landscape Character Area and largely unchanged since historic times. The space is emblematic of the historic (and, in other places, eroded) abrupt spatial relationship between the medieval nuclear village of Ardleigh and the surrounding working countryside. It has been used for recreational walking by villagers for hundreds of years…"

6.10 In the current Norwich to Tilbury proposals, an overhead line would cross the fishing lake in Local Green Space 1 between pylons TB13 and TB14. The height of the pylons sited on either side of the lake would be 50.8m and 56.8m respectively.

6.11 The presence of this tall infrastructure would effectively negate all the positive attributes of this valued Local Green Space outlined in the Ardleigh Neighbourhood Plan.

6.12 The overhead lines would also severely impact nature in this part of the village. For example, swans regularly use the fishing lake and both swans and geese use the surrounding fields. Other birds on the lake include many species of ducks as well as grebes, great crested grebes, coots and moorhen. Skylarks nest on land that would be underneath the proposed overhead lines.

6.13 Further details of the site, including images of the proposed pylons, are provided in the *"Ardleigh PC submission to NG- Historic Environment"* report submitted for the Statutory Consultation in July 2024.

6.14 **Local Green Space 6: Glebe Corner land.** The description for Local Green Space GS6 from the Ardleigh Neighbourhood Plan 2020 – 2033 states: "*This space comprises former glebe land (historically attached to the village church) that now appears as rough grassland, bordered by dense and mature hedgerows of some quality. The space is considered to provide a very important landscape function, marking the unofficial "entrance" to Ardleigh from the east. Its partial treed enclosure clearly distinguishes it from the wider open landscape and serves to signpost the transition from large-scale arable countryside to small-scale rural settlement. In its current state, the site has clear biodiversity value and appears to support an abundance of butterflies and bees. It also assists to preserve the tranquillity and landscape qualities of the adjacent allotments and cemetery. Although it is no longer glebe land, it retains many of the undeveloped qualities that is would historically have held as glebe land and it continues to form part of the church's heritage setting. Its retention provides an evocative reminder of the ecclesiastical origins of this part of the Parish.*"

6.15 The proximity of this area to the proposed infrastructure would be extremely harmful to all the qualities described in the last paragraph. The nearest pylon, TB9 is planned to have an extended height of 59.8m, to enable the cables to span the railway. As it would be located only 82m away it would dominate this Local Green Space. Also, as this Local Green Space "*continues to form part of the church's heritage setting*" this will further impact the setting

of the Grade II* listed St. Mary's Church, Ardleigh (1112060), which is discussed in this document as part of the Ardleigh Conservation Area (CA26).

6.16 The *"clear biodiversity value"* of the site is highlighted in the Ardleigh Neighbourhood Plan. It has also been noted for example that a kestrel regularly hovers over this plot of land. Buzzards and red kites are now regularly seen in this part of the village.

6.17 This area in combination with the adjacent allotments and cemetery completes the tract of formerly glebe land. Further details, including images of the proposed pylons, are provided in the *"Ardleigh PC submission to NG-Historic Environment"* report submitted for the Statutory Consultation in July 2024.

6.18 It should also be noted that this area of land is actively being pursued for an extension to the neighbouring cemetery, which is nearing capacity. Such an environment would be severely compromised by the proximity of towering pylons.

Other Valued Green Spaces

6.19 Two examples are provided here of other valued green spaces in the Parish that would be hugely impacted by the proposals

6.20 **The Little Bromley Road area.** As is the case with much of the geography in Ardleigh, the local lanes have historic origins. A section from the 1777 "Map of the County of Essex"[17] featuring Ardleigh is shown in Appendix D-3. Annotations have been added to show some of the lanes that would be very badly impacted by the scheme, including Home Farm Lane and Little Bromley Road. Please note that on this map, the name *"Ardleigh"* in the village centre is spelt as *"Ardley"*.

6.21 Pylons TB4 to TB8 would be located very close to Little Bromley Road. The widespread loss of trees and hedgerows during construction of the infrastructure would result in significant loss of local biodiversity and natural beauty. The 1777 map demonstrates that the lanes date back at least two centuries, and this is reflected in some of the species such as ancient oak trees.

6.22 **Ardleigh Reservoir.** The reservoir and the surrounding land have become an area of great natural beauty. It is also recognised as a sensitive habitat for birds and many other species.

6.23 The proposals entail an overhead crossing the reservoir between pylons TB15 and TB16.

[17] Map of the County of Essex 1777 by John Chapman & Peter André based on the original 18th-century atlas https://map-of-essex.uk/

6.24 A photograph of Ardleigh Reservoir, showing the section where the overhead would cross, is provided in Appendix D-4. This was taken from Wick Lane looking north (as denoted by black star added to the inset map).

6.25 A further photograph has been included to show the large number of swans that can sometimes be seen in this section of the reservoir.

6.26 Swans regularly nest in this section of the reservoir. Swans and geese also graze in nearby fields in significant numbers.

6.27 According to the Cornell Lab of Ornithology's eBird web portal 119 species of birds have been recorded at Ardleigh Reservoir[18], making it a very significant bird 'hotspot'. Many of these species are either on the UK red or amber list. Data from Essex Birdwatching Society indicates that 60 different species were observed at Ardleigh Reservoir during 2023 alone by members of this society[19]. Clearly pylons and overhead lines are incompatible with this abundance of birdlife.

[18] 'Bird species recorded at eBird Hotspots along proposed Great Grid Upgrade, Norwich to Tilbury.' A report for Essex, Suffolk, Norfolk Pylons Action Group July 2023

[19] https://www.ebws.org.uk/

7 Route Alignment and Pylon Type

7.1 The previous sections of this report highlight some of the key constraints that should have been major considerations when assessing the possibility of routing transmission cables around Ardleigh. This assessment should have taken place at the high-level planning stage and other strategic options consequently pursued.

7.2 As the plans currently stand, unnecessary and permanent harm would occur on an extensive scale due, for example, to proximity to residential properties, heritage assets, businesses and agricultural land.

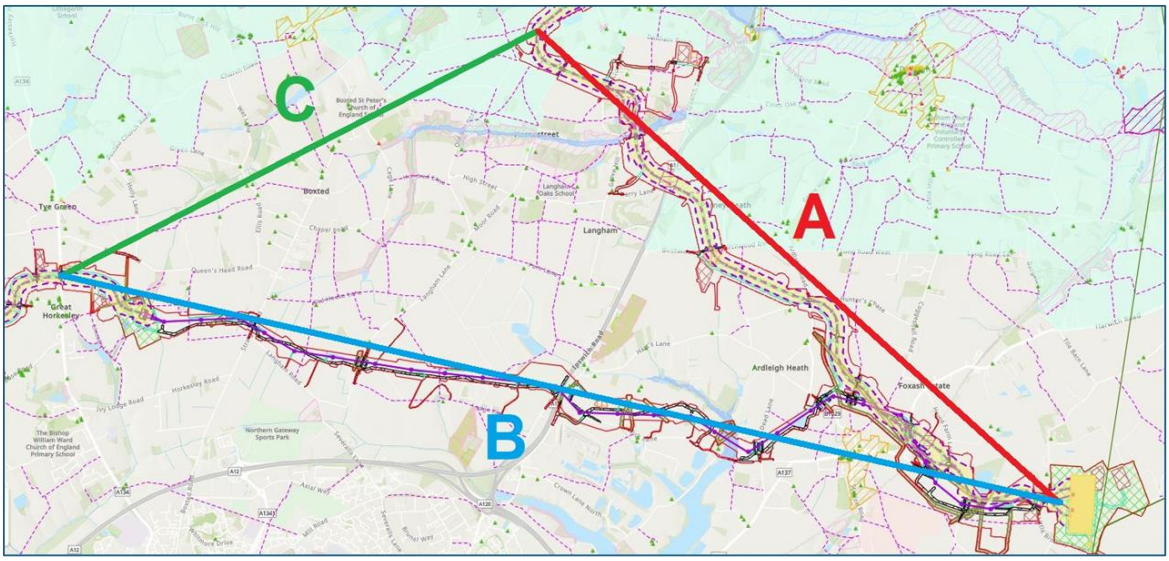
7.3 The harm would be significantly compounded by the very contorted route proposed for the cables around the village. This is simply poor design.

Deviation from the main route alignment

7.4 To connect to the proposed EACN substation in Ardleigh, the scheme requires a major deviation from the main Norwich to Tilbury route alignment. This adds substantially to the route length and to the cost of this section.

7.5 As the crow flies the length of the diversion is approximately 6.75km on the northern section plus 10.48km on the southern section. In comparison the length of a direct route is only 5km, resulting in the deviation adding approximately 12.23 km to the overall route length.

7.6 This is illustrated in the following diagram. The current diversion is represented by “Segment A” and “Segment B” combined. The direct route is represented by “Segment C”.



7.7 Costs for this deviation have been calculated using data obtained from 2025 IET report *"A Comparison of Electricity Transmission Technologies: Costs and Characteristics (April 2025)"*[20]

7.8 The calculations, which are presented in Appendix E-1, show that a route diversion into Ardleigh results in an additional Lifetime Power Transfer cost of approximately £154 million, almost doubling the cost of this section of the Norwich to Tilbury route.

7.9 The calculations used the IET 2025 standardised costs. The differential is likely to be even greater due to the complexity of this part of the route. For example:

- The very complex underground section around Dedham
- Complex underground and overhead sections around Ardleigh (including many angle towers)
- The need for cables to go under and over the A12
- The need for cables to under and over a railway line
- The need for a cable sealing end compound in Boxted in order connect the OHL section into the planned underground section.

7.10 The comparison also assumes that the alternative direct route is completely underground and therefore the most expensive option was used for comparison purposes.

7.11 The direct route would connect sections that are already proposed to be undergrounded. This would therefore result in the entire section between Wenham Grove Cable Sealing End Compound (JC34 & JC35) and Great Horkesley (Tilbury side) Cable Sealing End Compound (TB35 & TB36) being underground, completely removing pylons from the area. The recognised visual impact on the Dedham Vale National Landscape that would result from the currently proposed pylons would therefore be removed.

7.12 Straight routes were assumed for this comparison with an additional 0.77 km added to *"Segment B"* in the calculations to account for the length increase resulting from the exceptional serpentine OHL route proposed around Ardleigh village centre between TB3 and TB21. This increase in length alone results in an additional cost of £5.5 million, as established from the calculations in Appendix E-1 (using the 2025 IET figures). The additional cost is likely to be substantially higher than this due to the excessive number of angle towers required. The previous version of the IET report[21] discusses how the cost increases significantly in such situations.

7.13 To be clear, the intention of this report is not to propose this direct route as a solution but to highlight that not only will severe harm be caused by the

[20] https://www.theiet.org/media/axwkktkb/100110238_001-rev-j-electricity-transmission-costs-and-characteristics_final-full.pdf

[21] https://www.theiet.org/media/9376/electricity-transmission-costing-study.pdf

current proposal, but that it is also a very costly solution. It is noted that a requirement that is repeatedly stated in the Electricity Act 1989 and the National Policy Statements is for designs to be *"economic and efficient"*.

7.14 ESNP report *"Norwich to Tilbury Project Green Book Analysis"*[22] illustrates the importance of considering the full cost of options, including the externalities.

Proposed alignment in Ardleigh

7.15 The proposed overhead line alignment within the Parish of Ardleigh involves 10 changes in direction. This all takes place within a linear distance of only 5km between the start at TB1 and the end at TB21.

7.16 The implications of this are not only that deviations from linearity lead to greater visibility of the infrastructure, but that it entails the use of 10 angle pylons. Angle pylons are widely acknowledged to be much more visually intrusive and therefore the harm is compounded.

7.17 Out of the 21 pylons proposed for Ardleigh only 8 are the suspension type.

7.18 6 of the suspension towers would be approximately 50m tall and therefore very prominent in the flat landscape. 2 of the suspension towers would be extended height, approximately 60m high versions, required to cross the railway increasing the visual impact even further. These would be located approximately 1 mile from Dedham Vale National Landscape.

7.19 The remaining towers, which would be situated at the proposed EACN substation site, would be a terminal pylon and 2 gantries[23].

7.20 Therefore, 15 of the 21 pylons, i.e. 71% of the tall infrastructure proposed for the Parish, would require tower designs that have the highest visual impact.

7.21 The greater visual impact from angle pylons relative to standard suspension pylons is due to:

- the bulkier lattice structure required to withstand the substantial transverse forces exerted by the conductors as the line changes direction, and
- the possibility of longer cross arms and/or an asymetric arrangement.

7.22 There are various references in the Holford Rules to the care that needs to be taken to minimise the use of angle towers including a warning in *"Rule 2"* about *"...using too many angle towers, ie the more massive structures which are used when lines change direction"*[24].

7.23 Appendices F-1 and F-2 respectively provide illustrative images of suspension lattice and angle pylons, as issued by NGET as part of the DCO application. These are illustrative images and in relation to angle pylons the

[22] https://drive.google.com/file/d/1wzDN4s12PT2Alk3K5H7w23qqoWri4T6j/view
[23] Email from NGET "RE: Pylon type question" 06 November 2025
[24] https://www.nationalgrid.com/sites/default/files/documents/13795-The%20Holford%20Rules.pdf

amount of deviation required can have a significant effect on how much the visual impact is increased, due to the resulting length of the cross arms and/or the asymmetry of the tower.

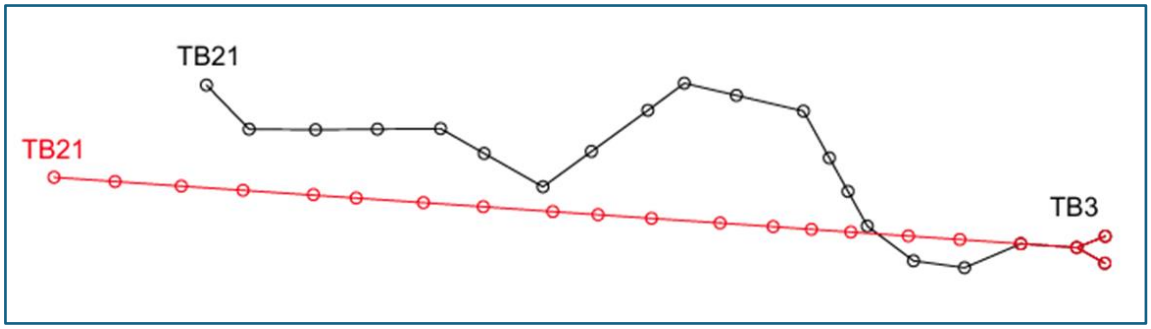
7.24 A detailed assessment was made of the changes in direction in the current plans, starting from TB1 and TB2 on the proposed EACN site and ending at TB21. TB21 is located outside the Parish boundary, but as it is only approximately 75m from the boundary it would therefore be very visible from within the Parish.

7.25 The calculations show that between TB1 and TB21 the average difference in alignment from one cable span to another is approximately 21°. Four of the spans are at an angle greater than 45° and one of these is at an angle of 65°. The greater the misalignment of each span, the more visually intrusive the angle pylons become due to increase in the length of the cross arms and the greater asymmetry.

7.26 The total cumulative misalignment in this section is approximately 400°. This therefore represents an overall change in alignment equivalent to more than a full circular rotation, and this occurs within a linear distance of only 5km between the start and end points. The calculations and the charts presenting the results are provided in Appendix G-1.

7.27 A further implication of the contorted route alignment around Ardleigh village centre is that it adds length to the route and therefore increases the amount of infrastructure required.

7.28 The following image shows in black the current route alignment around Ardleigh village centre between TB3 and TB21and in red the corresponding "unfurled" length. Cable spans from the current proposals were used in both representations, as denoted by the circles.



7.29 The increase in route length that results from wrapping the overhead line around the village centre is approximately 0.8 km (0.5 miles) and therefore a significant increase in proportion to the length of this section.

7.30 The number of pylons required for this section is further increased by the short spans required to achieve this alignment. Between TB3 and TB21 the pylon spans vary between approximately 210m and 383m.

7.31 With a straight route, even if all the pylons were only spaced at 340m intervals, i.e. significantly less than the currently planned maximum span in this section, the number of pylons required between TB3 and TB21 would be reduced from the current total of 18 to less than 15. This therefore indicates that to achieve this route around the village uses at least 3 more pylons than would normally be required. It demonstrates how severely overconstrained route alignment is compounding the harm in a very sensitive area.

7.32 The issues raised here relate to fundamental flaws in the proposed scheme.

7.33 The deviation from the main route alignment required to locate an intermediate substation (EACN) where currently proposed means that the large-scale misalignment discussed here is a geometric certainty.

7.34 It should also be noted that the original scheme, as presented at the 2022 non-statutory consultation proposed an overhead line entering EACN from the north in addition to this. This would therefore have resulted in an even greater degree of pylon misalignment and should have resulted in a red flag being raised very early in the routing process.

7.35 The over constraint of the proposed cable routes through and around Ardleigh means for example that underground cable and overhead lines converge in a very narrow corridor and in fact overlap in places.

7.36 The many constraints combined with the convoluted route make it impossible to achieve consistency with the Holford Rules to any significant degree. This is illustrated by the fact that changes made in the Targeted Consultation to avoid a potential minerals extraction site reduced the level of consistency with the Holford Rules even further, by, for instance, adding even greater curvature to the route, which also results in a further angle pylon, and the setting of the scheduled monument site harmed even further.

7.37 National Grid's *"A Sense of Place Design Guidelines"*[25] state the following: *"Where an overhead power line changes direction, this results in the need for bulkier deviation towers and a potential view of more pylons and more lines. By running in straight lines the overall visual impact of the transmission route is reduced"...."in promoting a sense of place, the first priority should be on promoting the environmental quality and diminishing the impact of pylons on the public realm"*.

7.38 National Grid's duties in this respect are outlined in paragraph 1 of the Schedule 9 to the Electricity Act 1989[26]:

[25] https://www.nationalgrid.com/sites/default/files/documents/Sense%20of%20Place%20-%20National%20Grid%20Guidance.pdf

[26] https://www.legislation.gov.uk/ukpga/1989/29/contents

"Preservation of amenity: England and Wales

1 (1) In formulating any relevant proposals, a licence holder or a person authorised by exemption to generate, distribute, supply or participate in the transmission of electricity (a) shall have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archeological interest; and (b) shall do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects".
Electricity Act 1989[27]

[27] https://www.legislation.gov.uk/ukpga/1989/29/contents

8 Location of the EACN Substation

8.1 The proposal to create the East Anglia Connection Node ("EACN") substation in Ardleigh amounts to far more than the huge EACN substation that the NGET Norwich to Tilbury proposals outline.

8.2 As the North Falls and Five Estuaries windfarm substations plus the Tarchon interconnector converter station substation would connect to the EACN substation, NGET's Norwich to Tilbury proposals effectively entail the creation of a very significant energy hub. As the separately proposed windfarm substations and interconnector converter station would be collocated in the vicinity, this would amount to four very large-scale structures being located in Ardleigh and the adjacent parishes.

8.3 The site selection shows very little regard to the guidelines in National Grid's own document on the Horlock Rules.

8.4 The Horlock Rules[28] state: *"In the development of system options including new substations, consideration must be given to environmental issues from the earliest stage to balance the technical benefits and capital cost requirements for new developments against the consequential environmental effects in order to keep adverse effects to a reasonably practicable minimum"*.

8.5 The document goes on to state: *"The siting of new NGC substations, sealing end compounds and line entries should as far as reasonably practicable seek to avoid altogether internationally and nationally designated areas of the highest amenity, cultural or scientific value by the overall planning of the system connections"*.

8.6 It then specifically refers to *"Areas of Outstanding Natural Beauty"*, *"Ancient Monuments"* and *"Listed Buildings"*. In the context of protecting *"areas of local amenity value"*, an example quoted is *"historic hedgerows"*. In relation to *"the land use effects of the proposal that should be considered when planning the siting of substations…"*, it states that *"issues for consideration include potential sterilisation of nationally important land, eg Grade 1 agricultural land and sites of nationally scarce minerals"*.

8.7 The currently proposed siting of EACN breaches the Horlock Rules in all the areas referenced in these examples.

8.8 As the siting of the substation is inextricably linked to the cable routeing the two need to be considered together. The introduction in National Grid's document on the Horlock Rules states that it *"complements the Company's Holford Rules guidelines on the routeing of high voltage transmission lines and when appropriate should be used in conjunction with them"*.

[28] https://www.nationalgrid.com/sites/default/files/documents/13796-The%20Horlock%20Rules.pdf

8.9 When assessing locations for EACN it should have been clear that for the cables to reach a site in Ardleigh it would, for example, result in harm to the Dedham Vale National Landscape, harm to a very large number of designated and non-designated heritage assets (including Scheduled Monument 1002146), harm to Grade 1 BMV farmland and other areas of high amenity value.

8.10 *"Rule 1"* from National Grid's document on the Holford Rules states: *"Avoid altogether, if possible, the major areas of highest amenity value, by so planning the general route of the first line in the first place, even if the total mileage is somewhat increased in consequence"* [29]. As discussed in the previous section, the reverse is true. The *"mileage"* has instead been significantly increased in order to locate the proposed EACN substation in an area of the *"highest amenity value"*.

8.11 The infringement of the Holford and Horlock Rules is discussed further in the representations from Ardleigh Parish Council, as submitted under PINS registration identification number FE7D5AD75 and in the Council's consultation submissions to National Grid.

8.12 There are no fundamental technical reasons why the North Falls and Five Estuaries windfarm substations plus the Tarchon interconnector converter station must connect to the grid at Ardleigh.

8.13 The ESO East Anglia Network Study[30] conducted in 2024 demonstrated viable options for Norwich to Tilbury that do not require EACN. It also demonstrated the potential of HVDC technology to hugely reduce the overall harm in providing the necessary network reinforcement between Norwich and Tilbury.

8.14 A fundamental reservation with the East Anglia Network Study was that the exercise was too limited in both scope and duration meaning that other viable options were not explored. Formal requests made via the local MP for additional modelling were not granted.

8.15 The use of HVDC technology to bring the power ashore from the North Falls and Five Estuaries windfarms would also provide much greater flexibility in where the grid connections could take place and hence the substations located.

8.16 As the losses from HVDC export cables are significantly lower that they for the HVAC versions currently proposed the North Falls and Five Estuaries windfarms this overcomes location restrictions due to cable length limitations.

[29] https://www.nationalgrid.com/sites/default/files/documents/13795-The%20Holford%20Rules.pdf
[30] https://www.neso.energy/document/304496/download

8.17 Ardleigh Parish Council & ESNP report *"OCSS Review"*[31] and ESNP report *"Modelling Requests"*[32] demonstrate how this could be achieved using proven technology that is currently being deployed elsewhere.

8.18 The reports also demonstrate how this small change would hugely reduce the amount of infrastructure required.

8.19 Instead of requiring a total of 12 separate HVAC onshore power cables for the North Falls and Five Estuaries windfarms only 2 HVDC cables would be required thereby hugely reducing the swathe through the countryside and the overall harm caused. This is demonstrated in the images provided in Appendix H-1.

8.20 As the proposed Tarchon Energy interconnector uses HVDC technology, there is already a large degree of in-built flexibility in terms of connection location.

8.21 Connections can be moved, as illustrated by National Grid in 2025 for the Nautilus interconnector project[33]:

8.22 Various studies, including the 2020 National Grid ESO (now NESO) report *"Cost-Benefit Analysis of Offshore Transmission Network Designs"*[34] have shown the huge benefits that arise from offshore coordination. Offshore coordination is now a fundamental requirement in the energy National Policy Statements.

8.23 The ESO East Anglia Network Study assessed the EACN site location, using its Holistic Network Design (HND) methodology.

8.24 It states that the *"overall aim of the methodology, is to robustly implement the established mitigation strategy of Avoid, Reduce, Mitigate. A strong focus on Avoid and Reduce is applied during the early stages of the overall methodology, with mitigation considered where required in the final options appraisal…"*. If such an approach had been applied to the location of EACN it is considered highly likely that the currently proposed location for EACN would have been rejected at a very early stage.

8.25 For all the options that required EACN, *"significant concentrated impact at proposed substations"* was reported in the study.

8.26 *"Community sentiment"* is one of the 4 equally weighted objectives in NESO's HND methodology. In relation to this objective NESO reported the following from the ESO East Anglia Network Study: *"during our engagement with representatives from Essex, the proposed East Anglia Connection Node (EACN) was raised at length. We received a detailed evidence pack regarding its*

[31] OCSS Review_C.pdf
[32] Modelling Requests_A.pdf
[33] https://www.bbc.co.uk/news/articles/c3w11djn022o
[34] https://www.neso.energy/document/182936/download

proposed location as well as other written responses referencing the proposed connection node"[35].

9 Cumulative Harm

9.1 The proposal to locate the Norwich to Tilbury East Anglia Connection Node ("EACN") substation in Ardleigh would lead to substantial cumulative harm due to the other associated energy infrastructure projects proposed for Ardleigh and the adjacent parishes of Little Bromley and Lawford. In addition to the proposed North Falls and Five Estuaries windfarm substations plus the Tarchon interconnector, consent has already been given to a BESS on the boundary between Ardleigh and Little Bromley.

9.2 The cumulative impact of construction traffic needs to be considered as part of the assessment as there will be substantial overlap in the timing of the construction of these projects. The predicted construction traffic levels reported by National Grid are alarming, noting also the huge size of some of the vehicles. No figures have been seen which show the cumulative impact of construction traffic from the concurrent projects.

10 Safety and Security Risks

10.1 The colocation of such a substantial amount of nationally significant infrastructure in one area would also present both local and national security risks. Little Bromley Parish Council has for example highlighted these concerns in its submissions to the Norwich to Tilbury consultations.

10.2 The risk arises not only from the BESS and the proposed substation sites, but the proposed Norwich to Tilbury overhead lines could also be a target for hostile actions: a risk compounded by the proposed route as it entails 50 to 60m high pylons encircling Ardleigh village centre and overhead lines crossing busy rail and road routes (such as the A12).

10.3 Overhead lines would also have an impact on the local airspace, such as the operation of the air ambulance. The contorted route alignment proposed is likely to further increase the navigational hazards presented by the overhead lines.

10.4 Safety concerns could also impact the used of low altitude airspace in the region. This is predicted to be a major economic growth area due to worldwide interest in the use of drones for delivery and other services etc[36].

[35] ESO East Anglia Network Study Appendices: https://www.neso.energy/document/304501/download
[36] https://institute.bankofamerica.com/transformation/low-altitude-economy.html

10.5 The proposals would also impact food security, due for example to the severe impact on BMV farmland, including nationally important Grade 1 land. The importance of agriculture to UK food security has been discussed in several recent reports including reports from the Royal United Services Institute and the Department for Environment, Food and Rural Affairs (Defra) [37, 38, 39, 40].

10.6 Underground HVDC cables offer a much lower impact and provide a much higher level of resilience. HVAC overhead lines and HVAC underground cables are an outmoded solution that should therefore be the last resort.

[37] Royal United Services Institute: https://www.rusi.org/explore-our-research/publications/commentary/farming-critical-uk-national-security

[38] BBC: https://www.bbc.co.uk/news/articles/ce9y1e09j72o

[39] All-Party Parliamentary Group on Science & Technology in Agriculture: https://www.scienceforsustainableagriculture.com/_files/ugd/f77b24_768efc488c9e441aa763bb088575230a.pdf

[40] https://www.gov.uk/government/publications/nature-security-assessment-on-global-biodiversity-loss-ecosystem-collapse-and-national-security

11 Conclusions

11.1 Locating the proposed East Anglia Connection Node ("EACN") substation in Ardleigh requires a major deviation from the main Norwich to Tilbury route alignment.

11.2 The proposed cable route and the proposed siting of the EACN substation would result in very significant and permanent harm including:

- the loss of productive farmland, including nationally important Grade 1 BMV land
- very significant harm to high value heritage assets, including many listed buildings and a scheduled monument site
- impact on the adjacent Dedham Vale National Landscape
- loss of local biodiversity, including historic hedgerows
- loss of valued Local Green Spaces

11.3 The harms would be compounded by the convoluted route required for the overhead lines, as this requires more pylons than a straight alignment and a high proportion of the pylons would be high visual impact angle pylons. A consequence of this is a significant increase in visual impact in an area with a high amenity value.

11.4 In addition to being very harmful, the proposal for this section of the route is costly in monetary terms. Costs estimates using the latest (2025) IET data show that this diversion would result in an additional cost of £154m, effectively doubling the cost of the cable infrastructure in this section of the route. This figure is also likely to be an underestimate due to the particularly high level of complexity in the route alignment.

11.5 The issues highlighted demonstrate wholesale non-compliance with the Holford and Horlock Rules and aspects of the National Policy Statements and the Electricity Act 1989. These requirements in combination provide fundamental guidance for good design. The significance of this guidance became very clear when assessing the proposals.

11.6 There is no need for the proposed EACN substation to be sited in the Ardleigh area and therefore no need for such a harmful option to be selected for the associated cable route. Alternatives discussed show how even a small amount of offshore coordination would remove substantial constraints in the routing. This would reduce the monetary cost and result in a huge reduction in the harm.

11.7 As the EACN substation would serve as an energy hub, the substantial cumulative impact of this and collocated developments must be thoroughly assessed and considered. It is currently proposed that the North Falls and Five Estuaries windfarm substations plus the proposed Tarchon Energy interconnector would connect at EACN. Plans for a BESS nearby have been

consented, which adds to the potential developments in an area that is currently prime farmland. The extent of the proposals would lead to the industrialisation of two historic rural villages and the surrounding landscape on a scale that is difficult to comprehend.

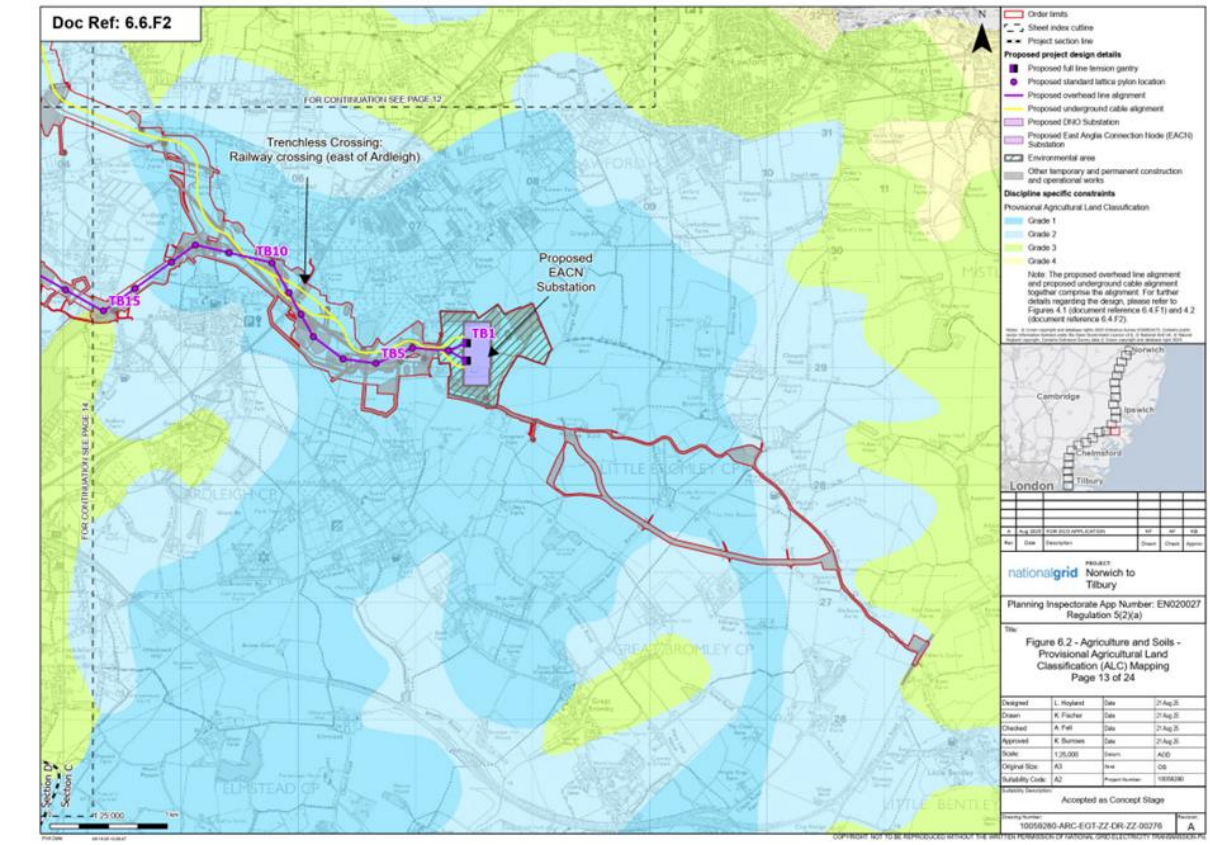
11.8 The local and national safety/security risks associated with locating so much nationally significant infrastructure in one area are discussed. The severe impact of the proposals on BMV farmland in the area also impacts food security. There is increasing recognition of how important UK agriculture is to food security which is a vital element of national security.

11.9 Despite extensive engagement from the local community at the various National Grid consultations, the concerns raised were not addressed. This includes not considering detailed local knowledge in relation to the impact on high value heritage assets, such as a site of high archaeological potential in Ardleigh that would be severely impacted by the proposals.

This report supplements previous submissions from Ardleigh Parish Council and from Little Bromley Parish Council.

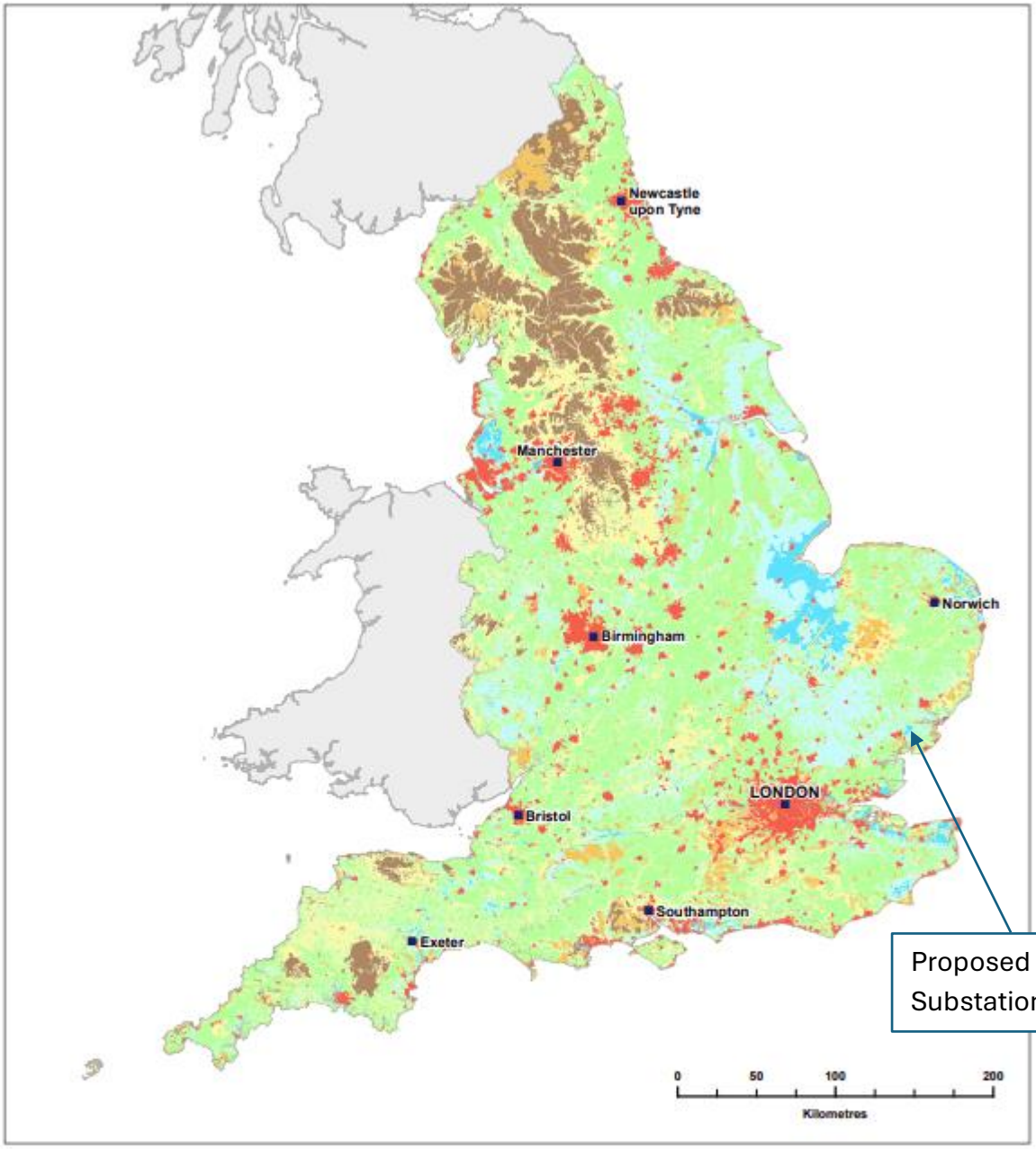
Appendix A-1: Ardleigh Village Centre

Appendix B-1: Agricultural Land Classification – Ardleigh



From APP-142: https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN020027-000431-6.6.F2%20Environmental%20Statement%20Figure%206.2%20-%20Provisional%20Agricultural%20Land%20Classification%20ALC%20Mapping.pdf

Appendix B-2: Agricultural Land Classification – England[41]



MAGiC

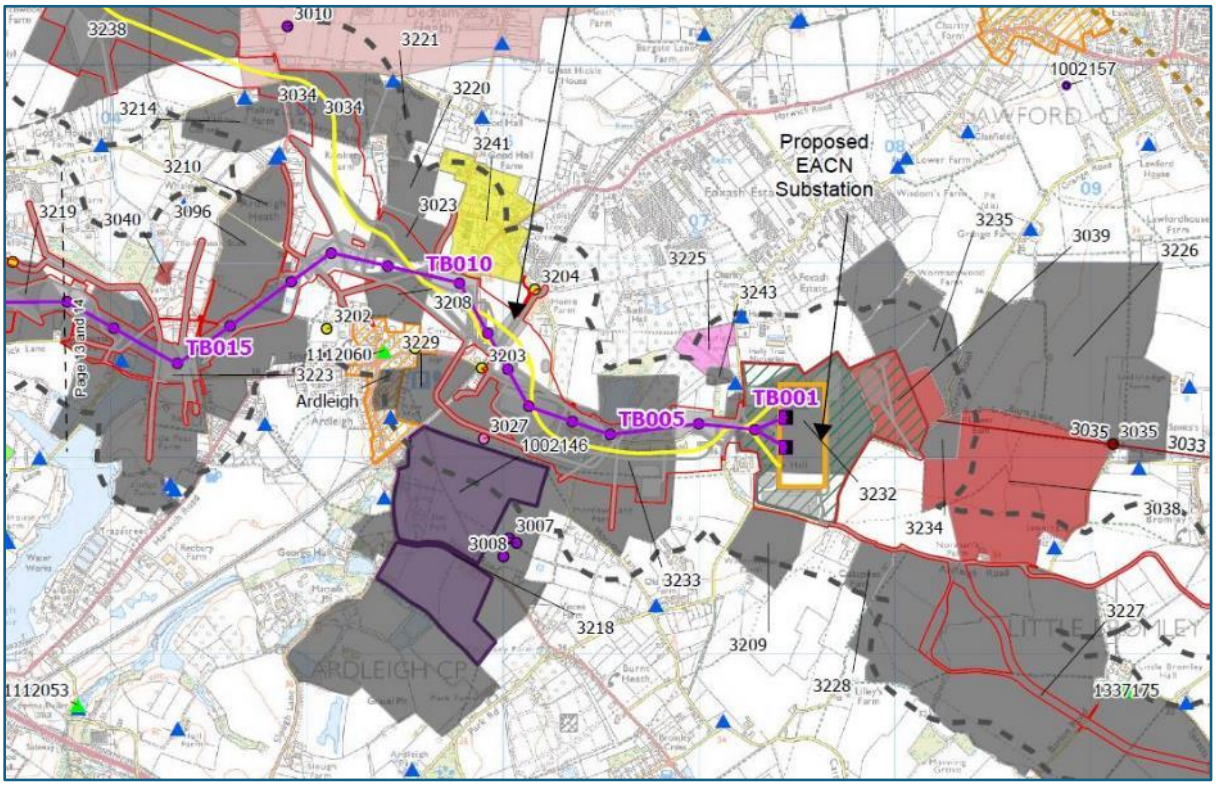
Agricultural Land Classification - Provisional (England)

Grade 1
Grade 2
Grade 3
Grade 4
Grade 5
Non Agricultural
Urban

[41] https://magic.defra.gov.uk/StaticMaps/Agricultural%20Land%20Classification%20-%20Provisional%20(England).pdf

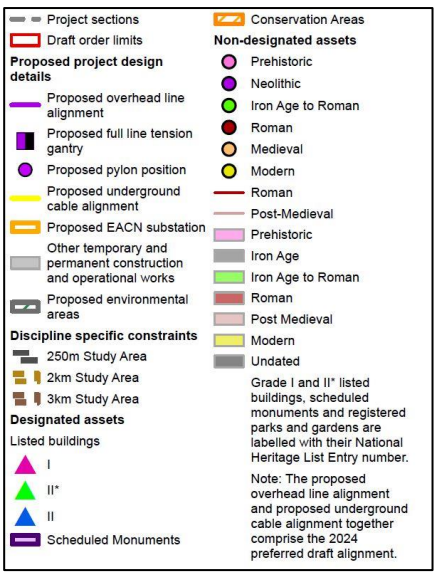
Appendix C-1: Designated and Non-Designated Heritage Assets – Statutory Consultation – Original NGET Map

Original image of Figure A11.1 from: NGET 2024 Norwich to Tilbury Statutory Consultation, Preliminary Environmental Information Report, Volume III – Technical Appendices – 3 of 4 April 2024. **The Modified Map is provided on the next page.**



NGET Figure A11.1: Historic Environment Designated and Non-Designated Heritage Assets
Page 13 of 25: Drawing No. 10059280-ARC-ELS-ZZ-DR-ZZ-00188 Rev. A

NGET Key

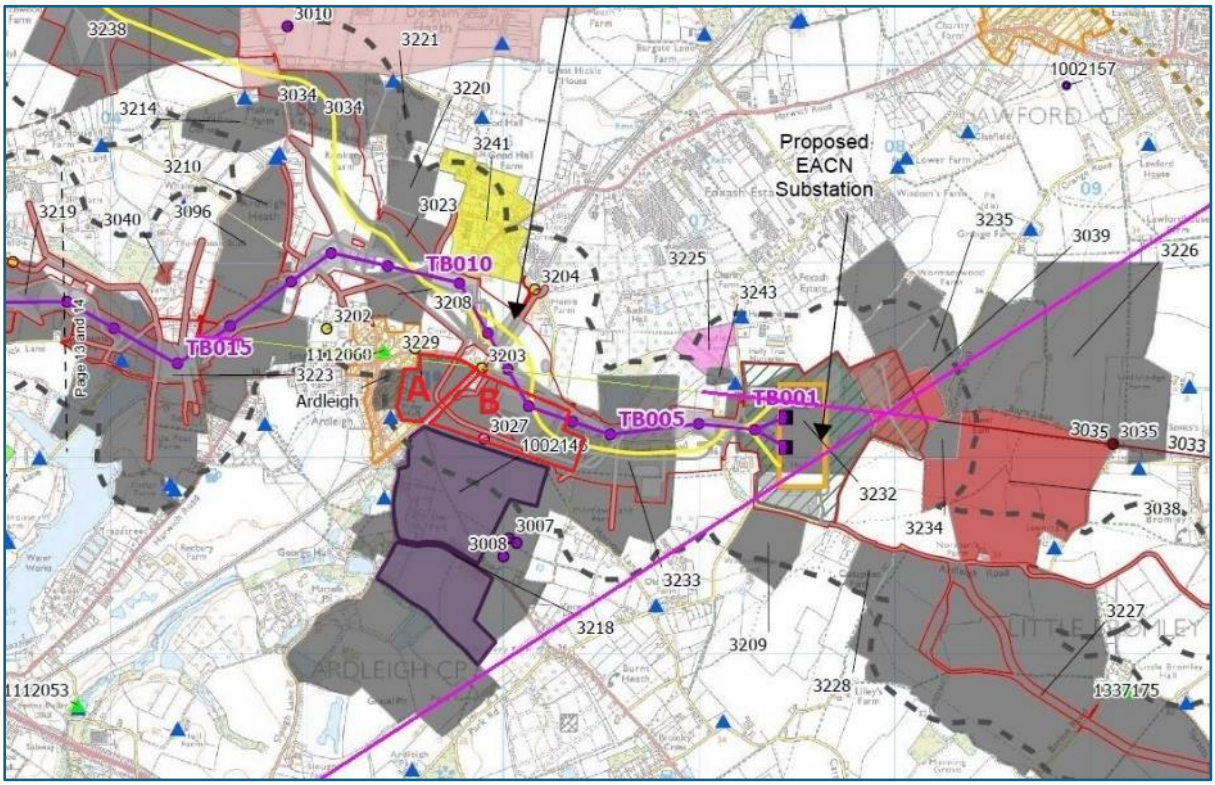


It should be noted that there are 17 listed buildings in the Conservation Area (16 Grade II and 1 Grade II*) and therefore considerably more than shown on this plan.

Similarly, the plan "Norwich to Tilbury - Environmental Constraints - Section C.pdf" shows just 2 of the 17 listed buildings in the Conservation Area (National Grid Drawing Reference: AENC-NG-ENG-PLN-0012, SHEET 11 OF 16, Issue A, Date: APRIL 2024).

Appendix C-2: Designated and Non-Designated Heritage Assets – Statutory Consultation – Modified NGET Map

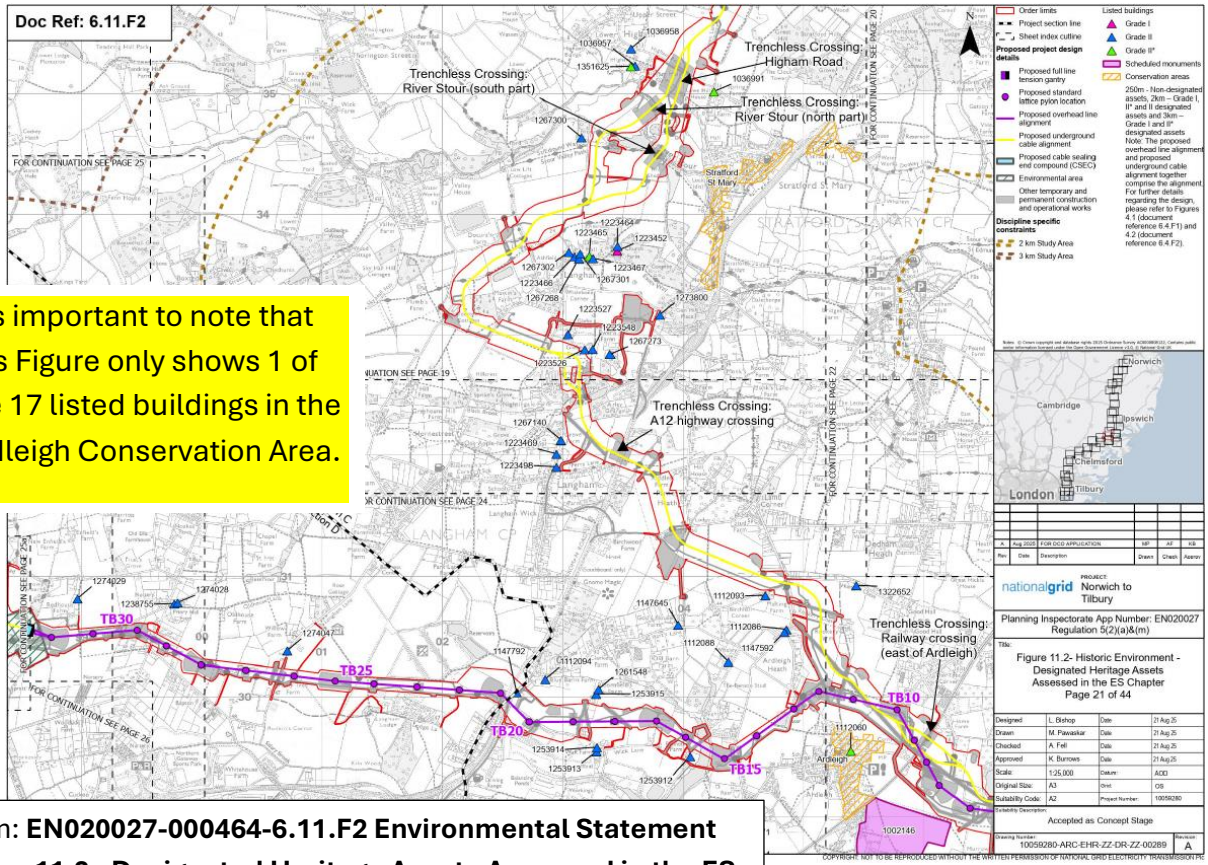
NGET Figure A11.1 modified to show Areas A & B, as identified in EAA Report 90 and the additional Roman Roads.



Key for additions to: NGET Figure A11.1: Historic Environment Designated and Non-Designated Heritage Assets (Page 13 of 25)

A	Areas A & B, as identified in EAA Report 90
	Additional known Roman Roads
	Green line is projected line of Roman Roads

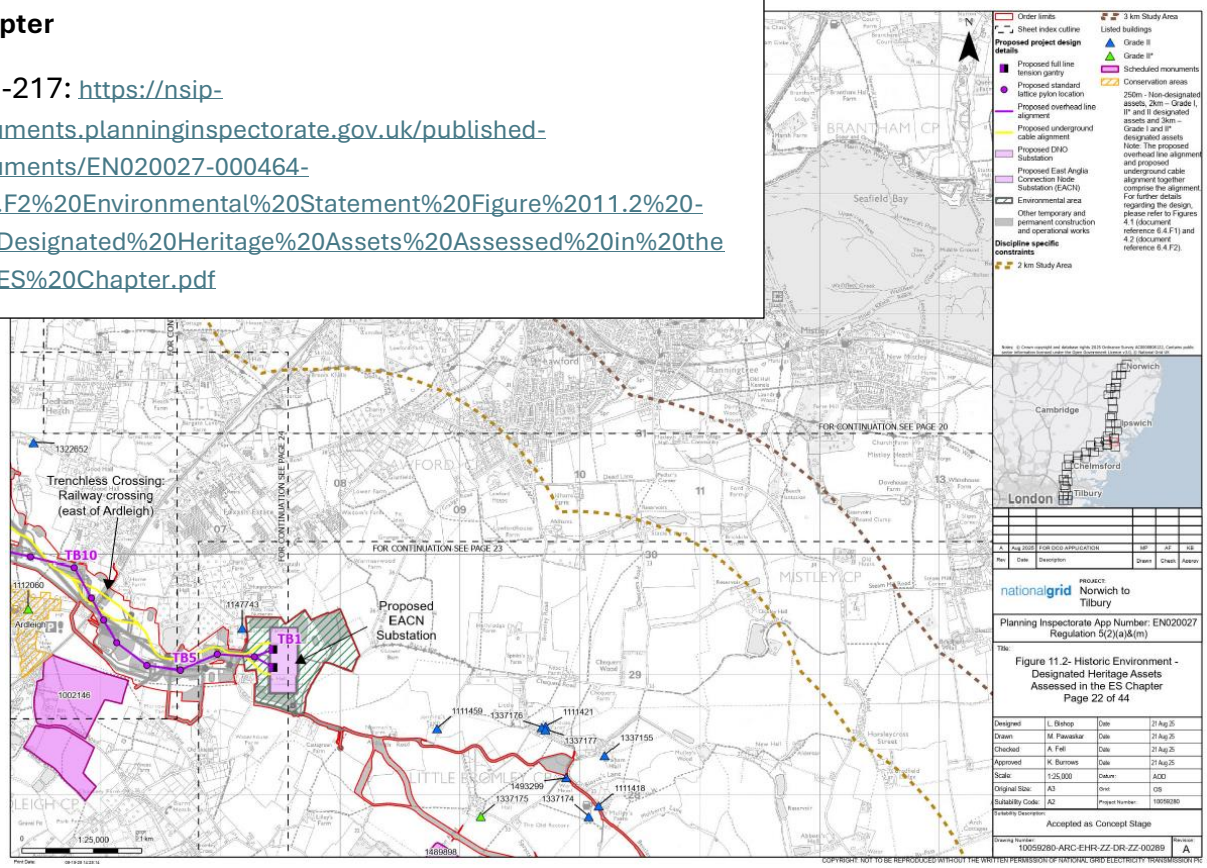
Appendix C-3: Designated Heritage Assets – DCO Application



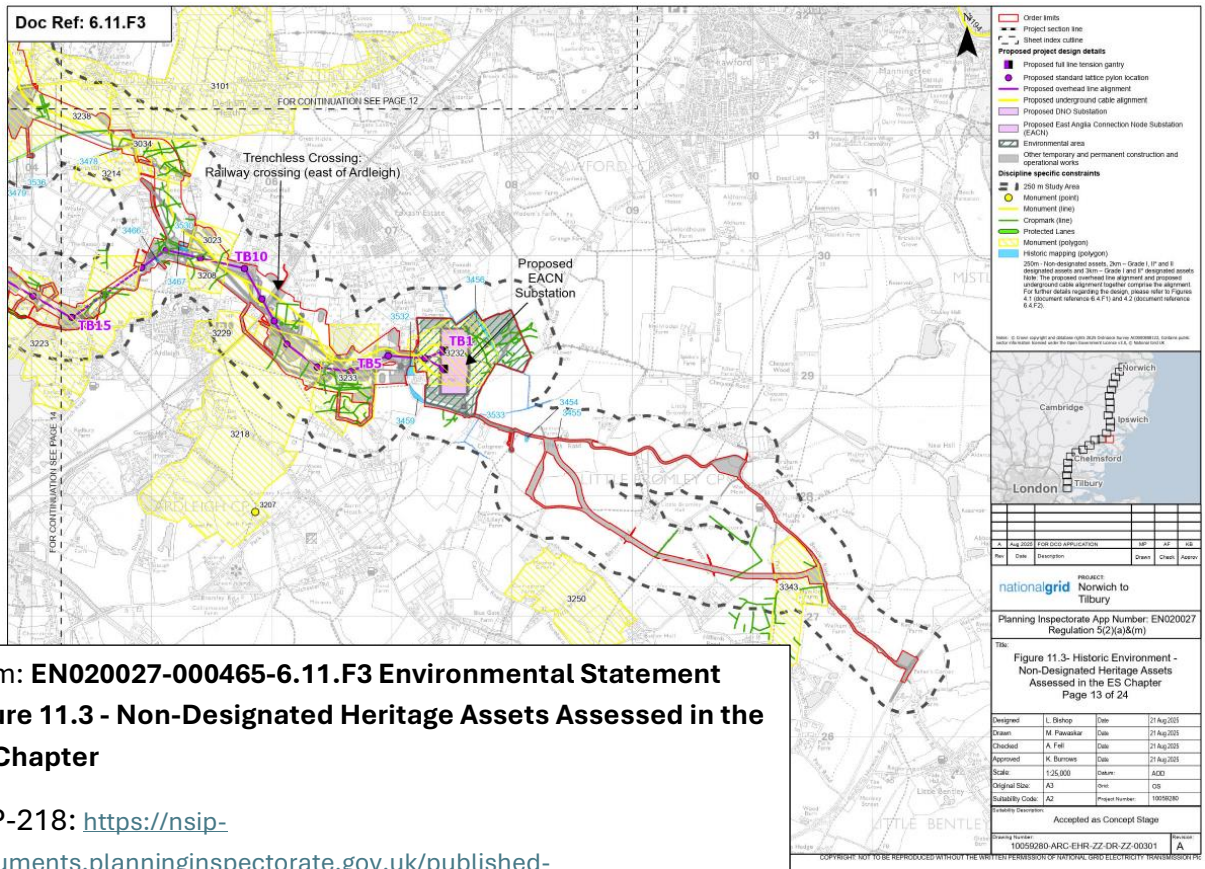
It is important to note that this Figure only shows 1 of the 17 listed buildings in the Ardleigh Conservation Area.

From: **EN020027-000464-6.11.F2 Environmental Statement Figure 11.2 - Designated Heritage Assets Assessed in the ES Chapter**

APP-217: https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN020027-000464-6.11.F2%20Environmental%20Statement%20Figure%2011.2%20-%20Designated%20Heritage%20Assets%20Assessed%20in%20the%20ES%20Chapter.pdf

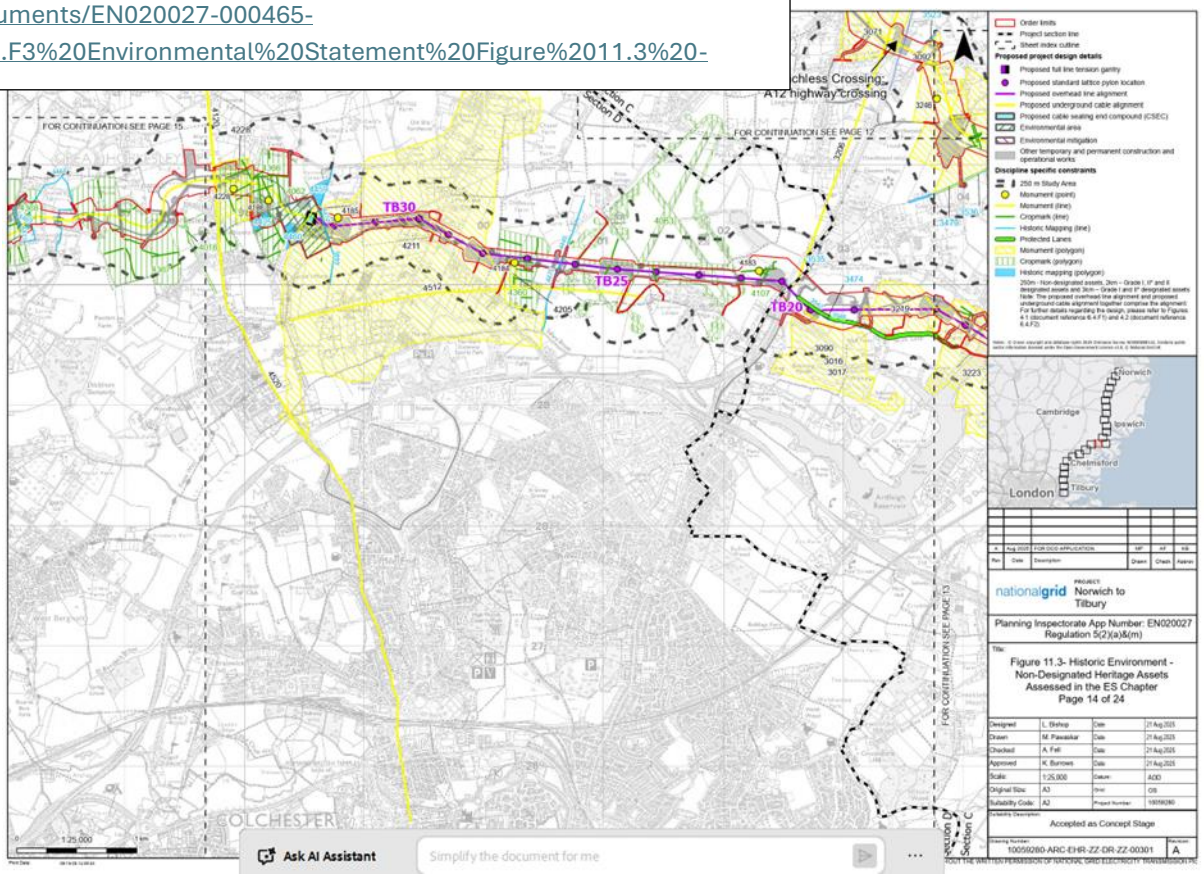


Appendix C-4: Non-Designated Heritage Assets – DCO Application



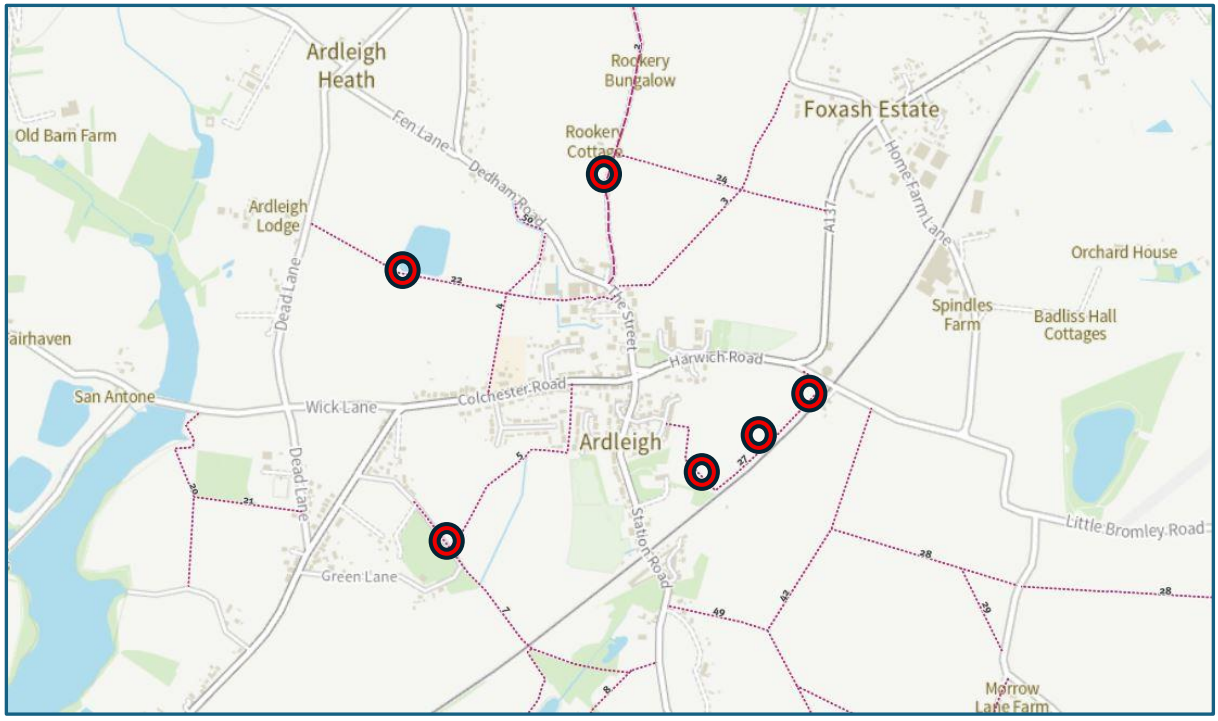
From: **EN020027-000465-6.11.F3 Environmental Statement Figure 11.3 - Non-Designated Heritage Assets Assessed in the ES Chapter**

APP-218: https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN020027-000465-6.11.F3%20Environmental%20Statement%20Figure%2011.3%20-



Appendix C-5: Photographs of the Grade II* listed St Mary's Church (1112060) taken from the surrounding landscape

Shows approximate locations of the viewpoints used for the photographs



Map: https://www.essexhighways.org/getting-around/public-rights-of-way/prow-interactive-map

View from footpath "Ardleigh 2" between proposed pylons TB11 & TB12

View from footpath “Ardleigh 5” where it meets Green Lane (approximately 700m from the Church)

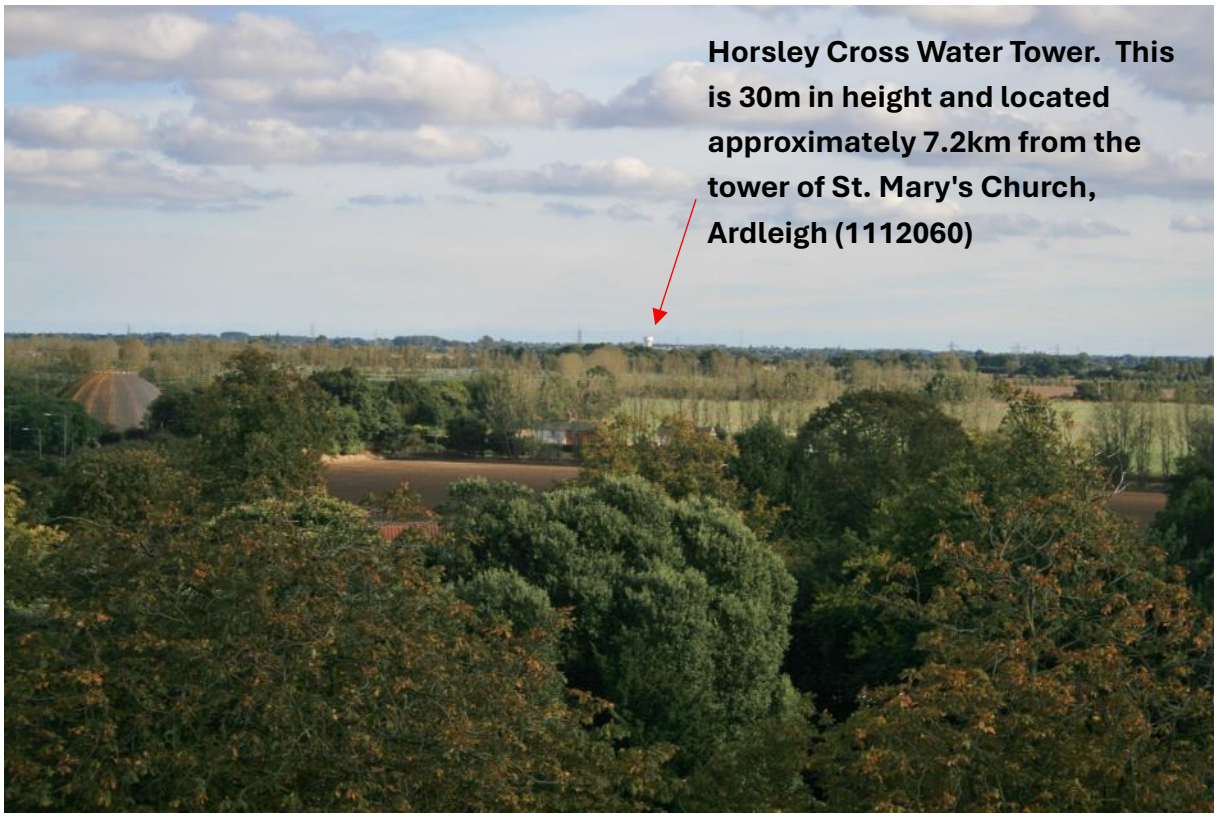
View from footpath “Ardleigh 22” between proposed pylons TB13 & TB14

Views from three points along footpath “Ardleigh 27”

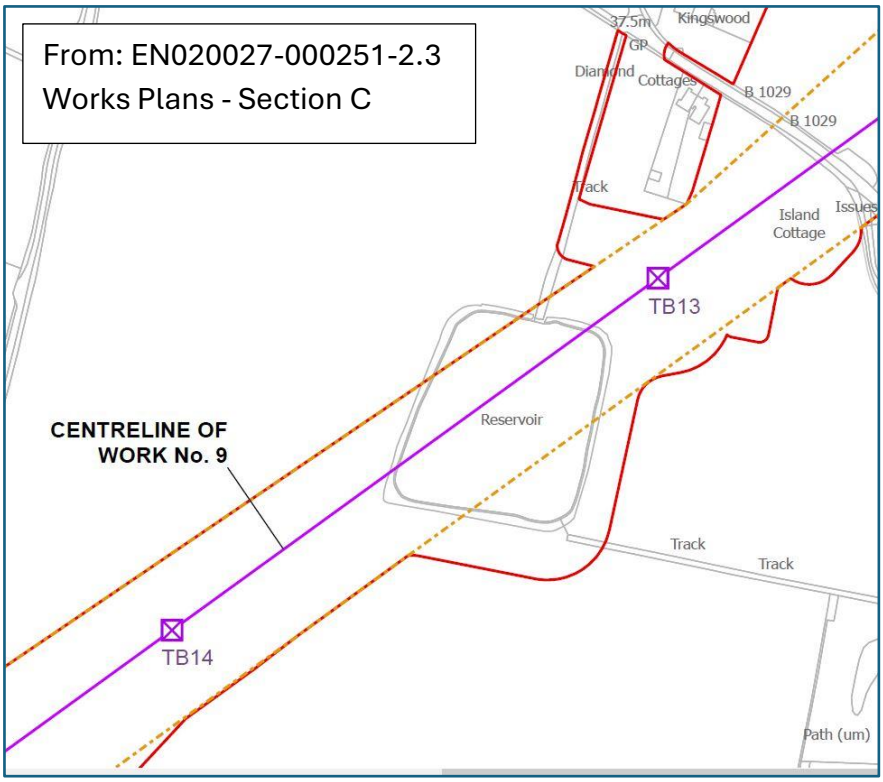

St Mary’s Church,
Ardleigh

Appendix C-6: Photographs of the surrounding landscape taken from the Grade II* listed St Mary's Church (1112060)

Views from the tower of St Mary's Church, Ardleigh

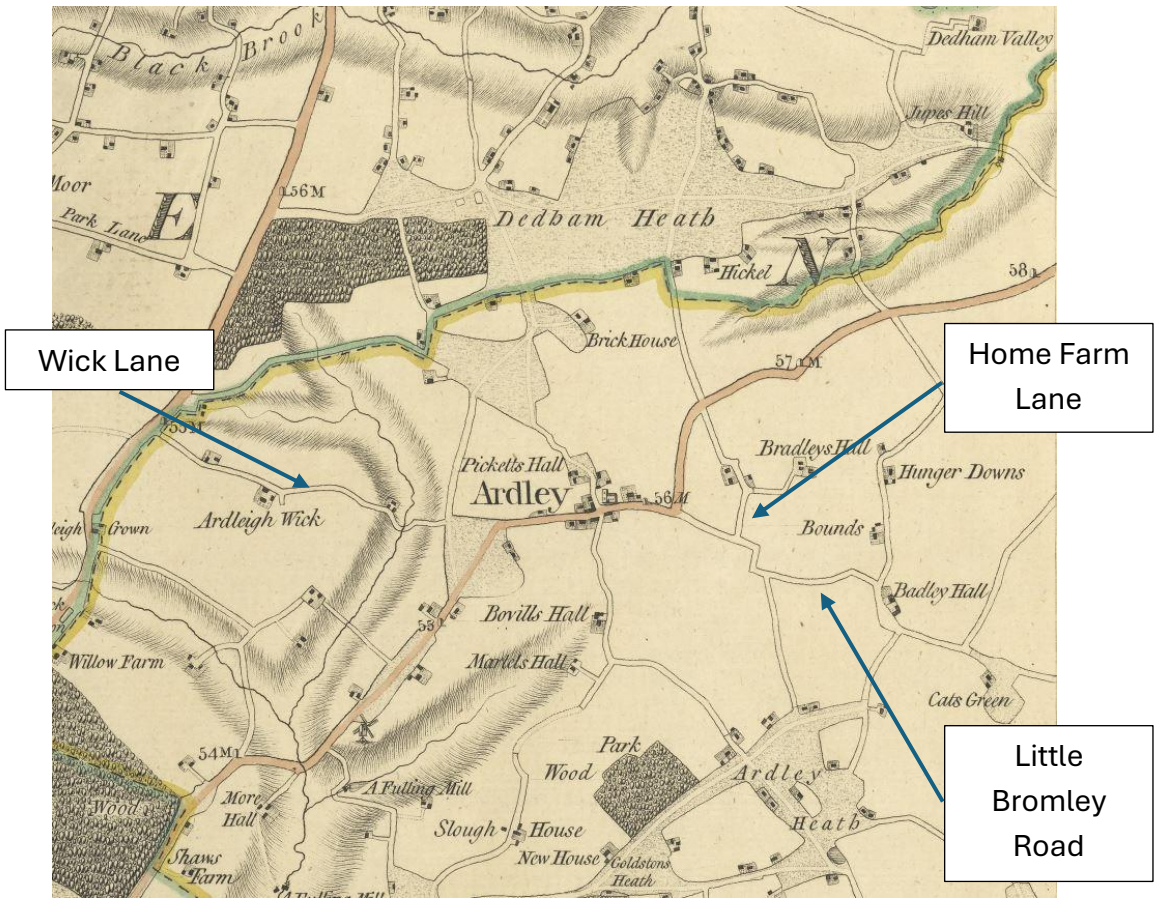

Horsley Cross Water Tower. This is 30m in height and located approximately 7.2km from the tower of St. Mary's Church, Ardleigh (1112060)

Appendix D-1: Local Green Space 1 – Fishing lake north of Colchester Road



Appendix D-2: Local Green Space 6 – Glebe Corner land

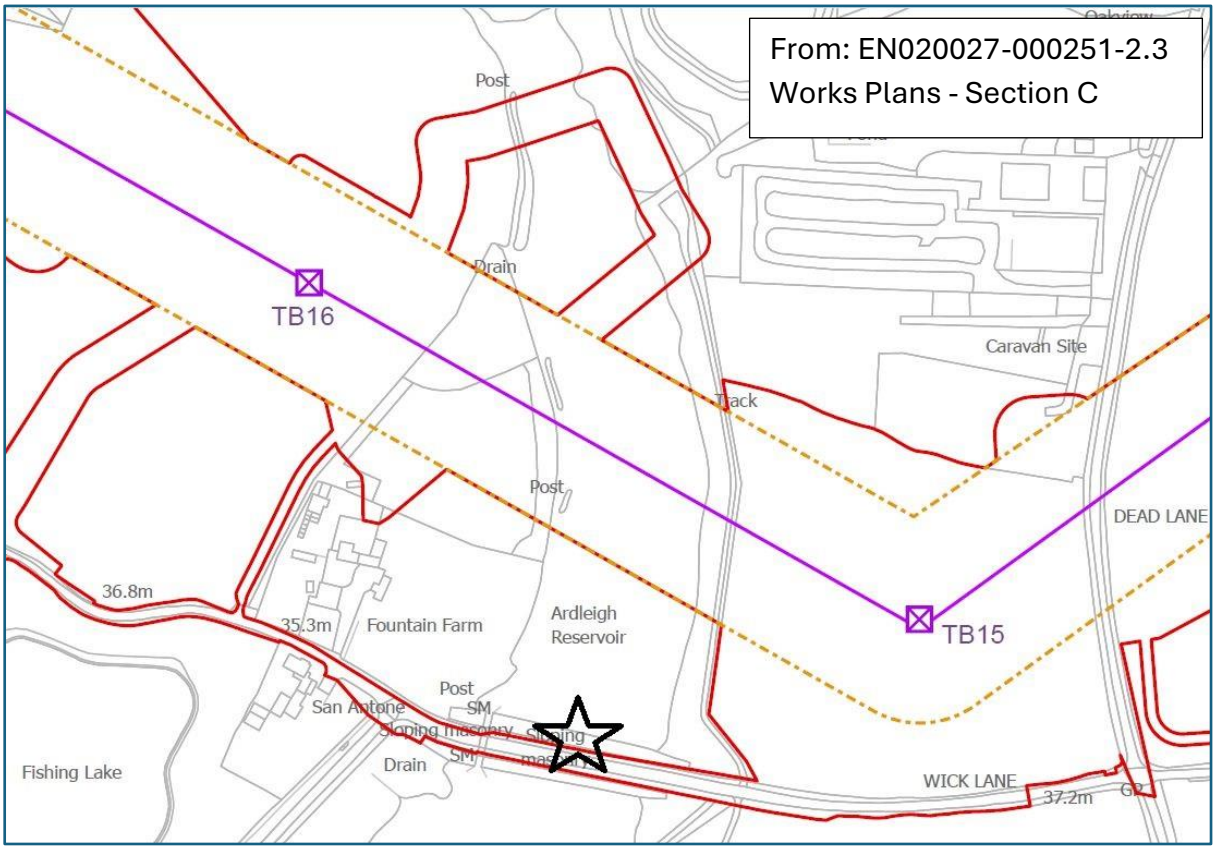
Appendix D-3: Little Bromley Road



Section from “Map of the County of Essex 1777” by John Chapman & Peter André based on the original 18th-century atlas: https://map-of-essex.uk/

Appendix D-4: Ardleigh Reservoir

Image from Wick Lane looking north, where overhead lines are planned to cross the reservoir. The star added to the map below shows the viewpoint.



Photograph showing birdlife on the section of Ardleigh Reservoir that would be spanned by overhead lines

Appendix E-1: Cost increase due to the currently proposed route diversion to Ardleigh

Cost of currently proposed diversion to Ardleigh

Segment	Cost per MWkm (£)	MW	km	Lifetime Power Transfer Cost (£ million)	Comments
A	5,330	6000	6.75	216	*IET AC underground £/MWkm data*
B	1,190	6000	9.53	68	*IET AC OHL £/MWkm data*
	5,330	6000	0.95	30	*IET AC underground £/MWkm data*
	TOTAL FOR DIVERSION:		**17.23**	**314**	

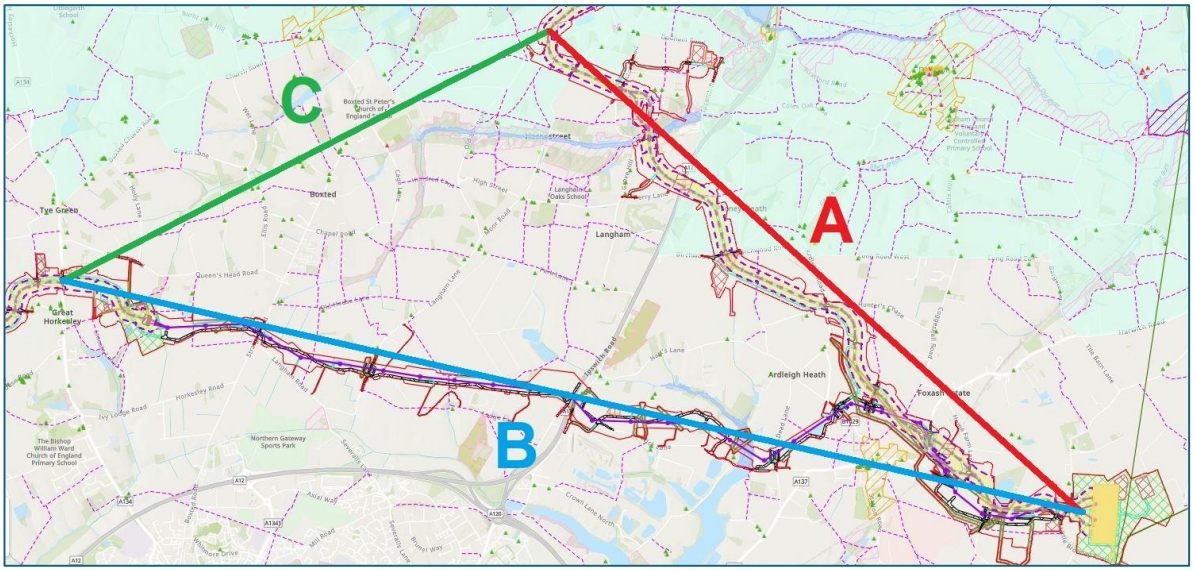
Straight routes were assumed for this comparison but with an additional 0.77 km added to Segment B to account for the length increase resulting from the exceptional OHL deviation around Ardleigh village centre between TB3 and TB21. This alone results in an additional cost of £5.5 million.

Cost of an alternative direct underground route for the same section

Segment	Cost per MWkm (£)	MW	km	Lifetime Power Transfer Cost (£ million)	Comments
C	5,330	6000	**5.00**	**160**	*IET AC underground £/MWkm data*

Increase in length of route and cost due to the currently proposed route diversion

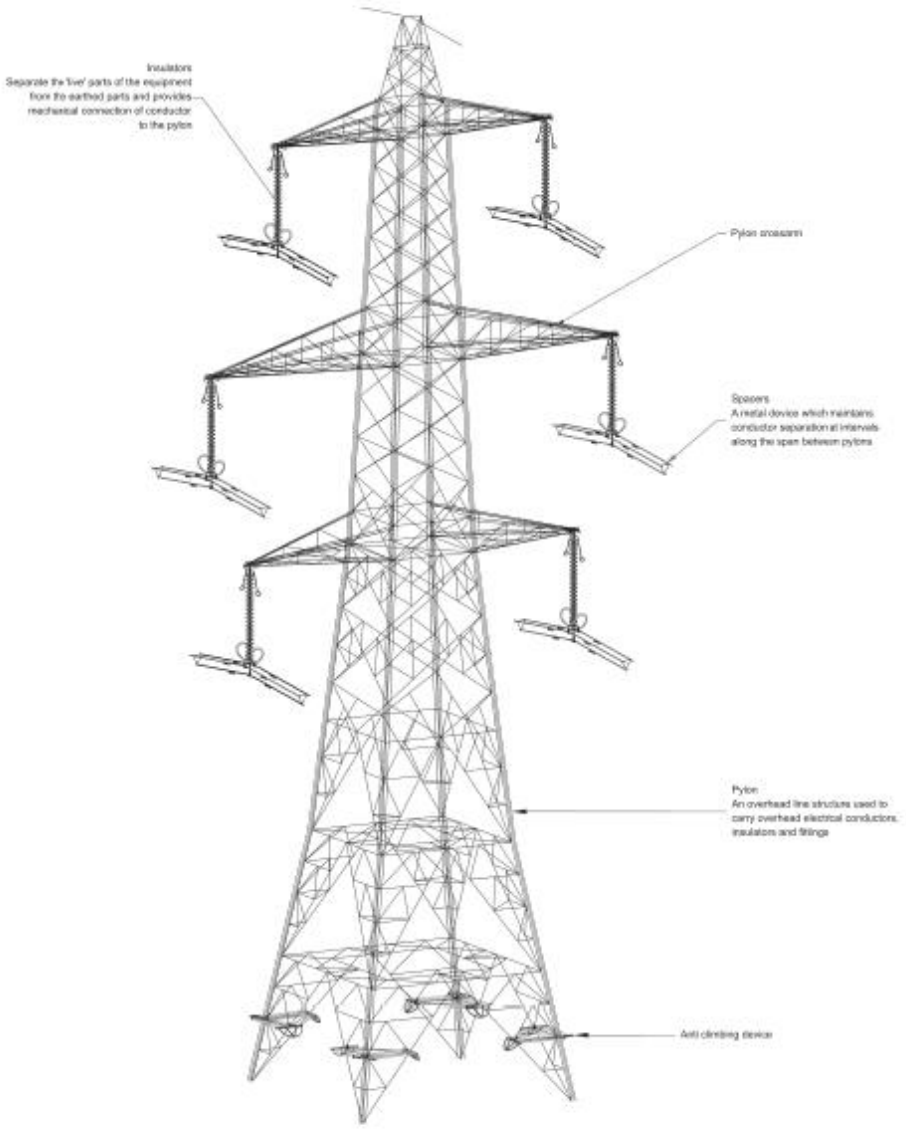
Additional route length:	**12.23**	**km**
Additional Lifetime Power Transfer cost:	**154.39**	**£ million**



KEY	
A	**Northern leg:** HVAC underground from bend to the west of Langham Hall (north of Dedham Road) to proposed site of EACN
B	**Southern leg:** from proposed EACN site to where the route crosses The Causeway in Great Horkesley (mainly OHL with short underground section)
C	**Alternative route:** HVAC underground from current bend west of Langham Hall (north of Dedham Road) to where current route crosses The Causeway in Great Horkesley

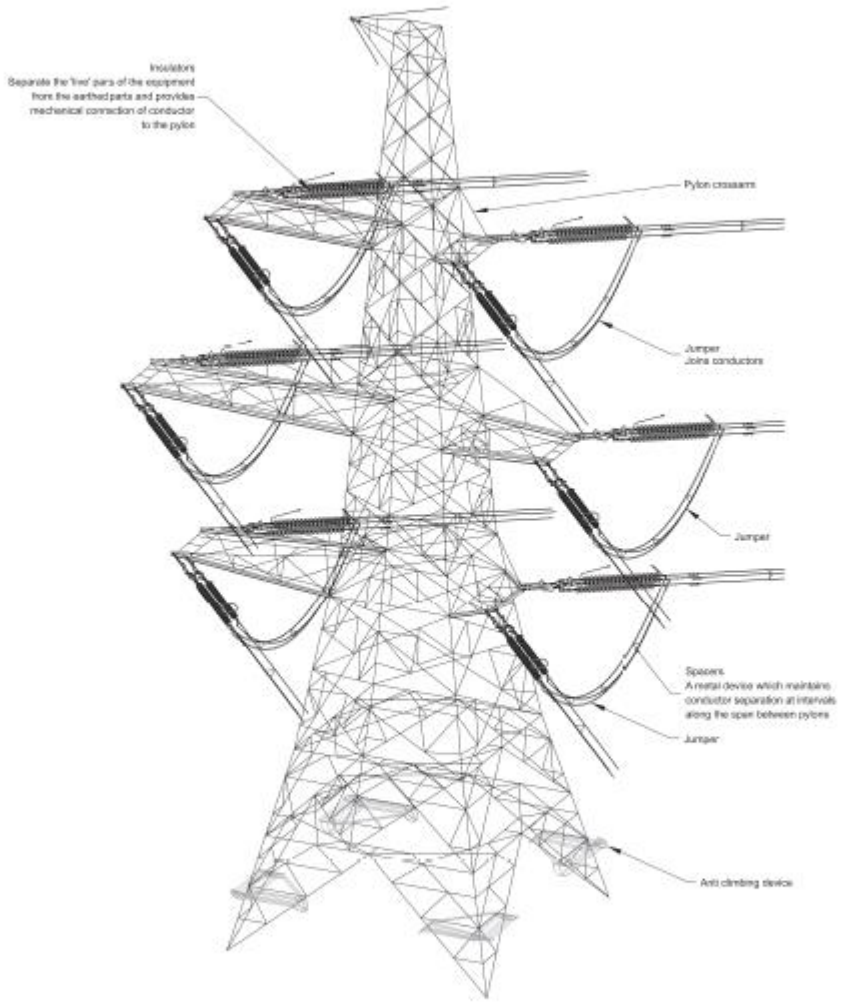
Appendix F-1: Pylon Types – “Illustrative Labelled Suspension Lattice Pylon”

From APP-042 “EN020027-000274-2.6.2 Design and Layout Plans - Overhead Lines”



Appendix F-2: Pylon Types – “Illustrative Labelled Angle Lattice Pylon”

From APP-042 “EN020027-000274-2.6.2 Design and Layout Plans - Overhead Lines”



Isometric View on Pylon
L12 D90 STD

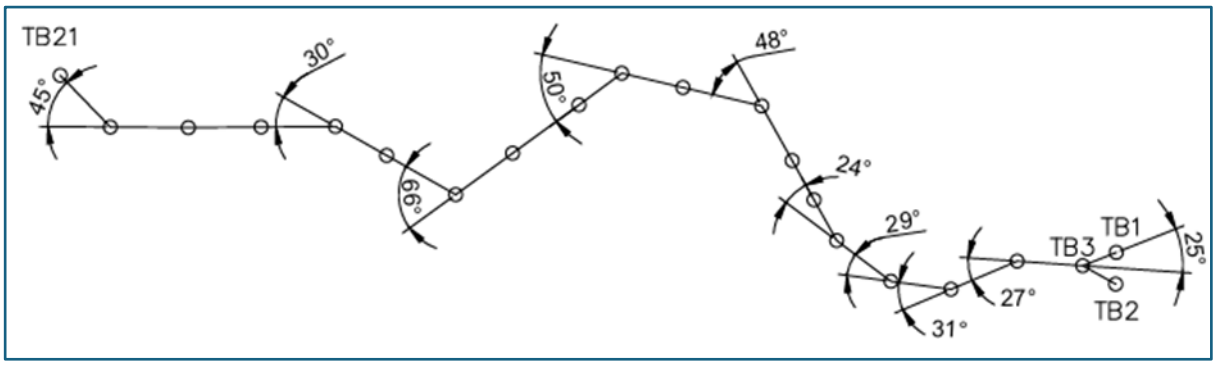
Appendix G-1: Alignment of towers TB-1 to TB-21

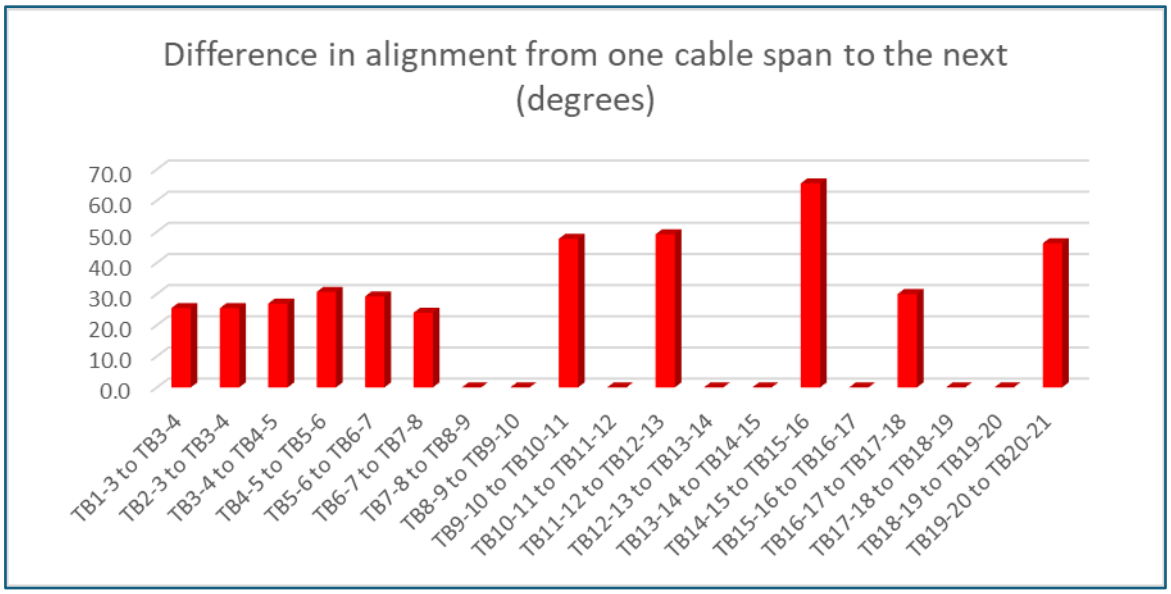
Alignment calculations

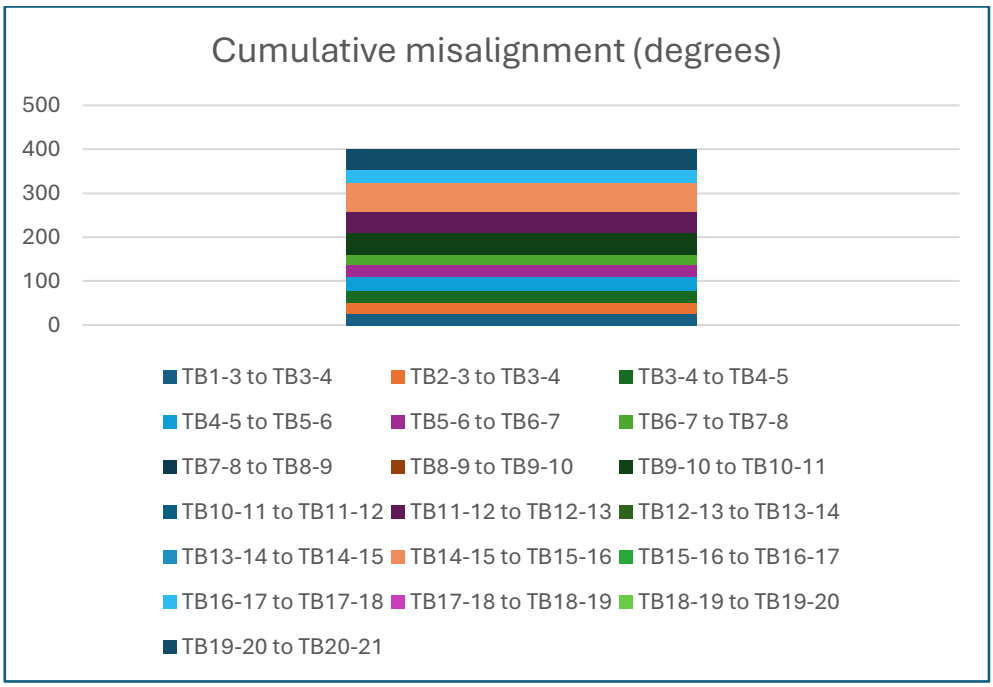
Section	Difference in alignment (degrees)
TB1-3 to TB3-4	25.5
TB2-3 to TB3-4	25.4
TB3-4 to TB4-5	26.9
TB4-5 to TB5-6	30.7
TB5-6 to TB6-7	29.2
TB6-7 to TB7-8	24.0
TB7-8 to TB8-9	0.0
TB8-9 to TB9-10	0.0
TB9-10 to TB10-11	47.7
TB10-11 to TB11-12	0.0
TB11-12 to TB12-13	49.2
TB12-13 to TB13-14	0.0
TB13-14 to TB14-15	0.0
TB14-15 to TB15-16	65.5
TB15-16 to TB16-17	0.0
TB16-17 to TB17-18	30.0
TB17-18 to TB18-19	0.0
TB18-19 to TB19-20	0.0
TB19-20 to TB20-21	46.3
Total	**400** degrees

Average misalignment	**21.07**	degrees

Approximate CAD layout to check alignment calculations



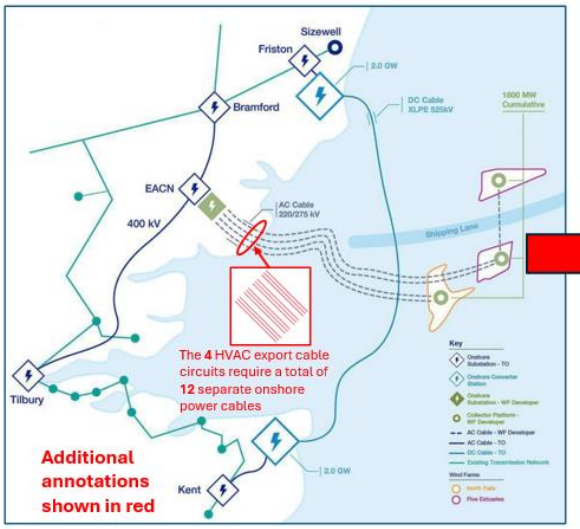

Difference in alignment from one cable span to the next (degrees)
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
TB1-3 to TB3-4
TB2-3 to TB3-4
TB3-4 to TB4-5
TB4-5 to TB5-6
TB5-6 to TB6-7
TB6-7 to TB7-8
TB7-8 to TB8-9
TB8-9 to TB9-10
TB9-10 to TB10-11
TB10-11 to TB11-12
TB11-12 to TB12-13
TB12-13 to TB13-14
TB13-14 to TB14-15
TB14-15 to TB15-16
TB15-16 to TB16-17
TB16-17 to TB17-18
TB17-18 to TB18-19
TB18-19 to TB19-20
TB19-20 to TB20-21


Cumulative misalignment (degrees)
500
400
300
200
100
0
TB1-3 to TB3-4
TB2-3 to TB3-4
TB3-4 to TB4-5
TB4-5 to TB5-6
TB5-6 to TB6-7
TB6-7 to TB7-8
TB7-8 to TB8-9
TB8-9 to TB9-10
TB9-10 to TB10-11
TB10-11 to TB11-12
TB11-12 to TB12-13
TB12-13 to TB13-14
TB13-14 to TB14-15
TB14-15 to TB15-16
TB15-16 to TB16-17
TB16-17 to TB17-18
TB17-18 to TB18-19
TB18-19 to TB19-20
TB19-20 to TB20-21

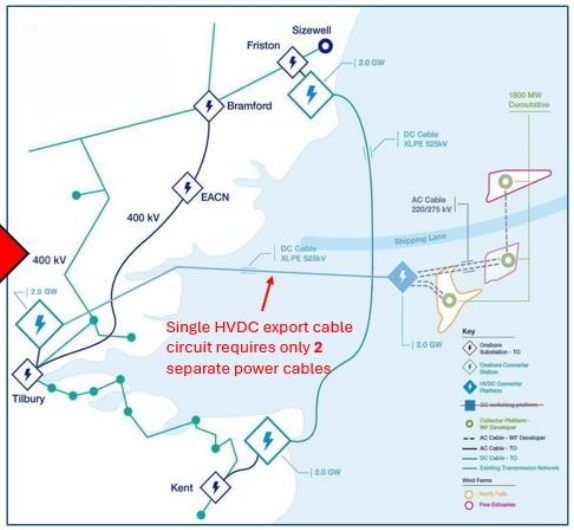
Appendix H-1: Alternative North Falls and Five Estuaries Connection Options

The "Baseline" option shows the current proposals

Baseline

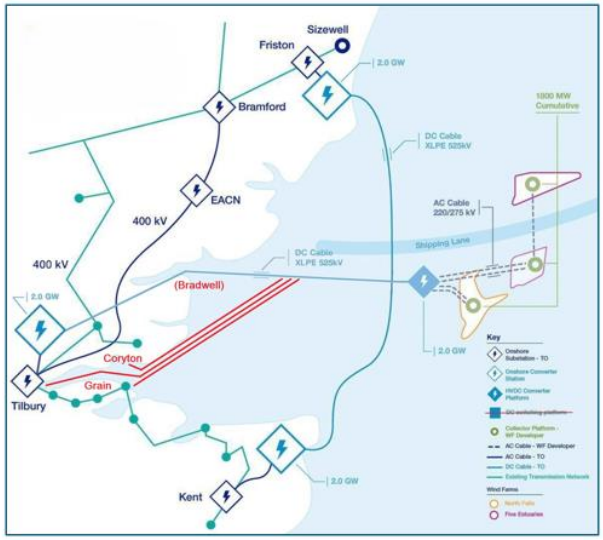


Alternative Solution



Alternative Solution: Variants

- There could be any number of variants of the "Alternative Solution".
- The red lines and text added to the figure on the right are to illustrate other land fall points that could be explored.
- The aim to is to minimise overall harm. For example, brownfield sites should be prioritised for the location of converters and substations.



Images were copied from ESNP report: *"Modelling Requests_A"*.

Illustrations from Arup report *"Independent Review of OCSS Qualifying Coordinated Project: OCSS_01 North Falls, Five Estuaries & Sea Link"*[42] were annotated and adapted as necessary.

[42] https://www.nationalgrid.com/document/152786/download