

Appendix C

IN THE MATTER OF:
**DEVELOPMENT CONSENT ORDER APPLICATION BY NATIONAL
GRID ELECTRICITY TRANSMISSION (“NGET”)**
FOR THE NORWICH TO TILBURY PROJECT (“THE PROJECT”)

**FURTHER SUBMISSIONS ON BEHALF OF PYLONS EAST ANGLIA
LIMITED (“PEAL”)**

1. These submissions respond to the ‘Opinion’ submitted on behalf of NGET by Russell Harris KC dated 10th April 2026 (“**the Harris Opinion**”) in response to PEAL’s submissions dated 10th April 2026 (“**PEAL’s April Submissions**”).
2. PEAL’s April Submissions were in specific response to the Examining Authority’s Question GEN 1.6, which is not repeated here. That question asked about certain provisions of NPS EN-1 in relation to CNP policy.
3. PEAL’s April Submissions addressed Question GEN 1.6 by reference to a close textual and purposive analysis of the relevant provisions of NPS EN-1. By contrast, the Harris Opinion relies upon a combination of selective quotation, paraphrasing and emphasis.
4. The suggestion that there is no concept of ‘presumed need’ in NPS EN-1 does not bear scrutiny. For the reasons set out in PEAL’s April Submissions, NPS EN-1 deems there to be a need for the specified “types” (para 4.2.6) of low carbon infrastructure set out at paragraph 4.2.5 – and makes provision for the weighting to be accorded to that need. What it does not do is deem there to be a need for the particular means of delivering any of those types of energy infrastructure. The particular means selected still has to be justified in the circumstances of the case, based upon the evidence submitted. For all its emphatic language, the Harris Opinion offers no legally coherent alternative analysis in the section

purporting to deal with this issue (see paragraphs 3 to 31 in particular).

5. At paragraphs 32-36, the Harris Opinion refers to NPS EN-5. That NPS was not mentioned in the Examining Authority's Question GEN 1.6. That is unsurprising. NPS EN-5 does not deem there to be a need for overhead lines. Rather, it provides guidance for assessing whether overhead lines are an appropriate means of delivering new grid infrastructure in any particular case. Indeed, if the principle of overhead lines was a given in the way that NGET and the Harris Opinion appear to assume it is, there would be no need for this guidance. That further illustrates the fallacy of their assumption.
6. At paragraphs 37-45, the Harris Opinion makes the surprising submission that there is no need for NGET to identify the objectives of the project which is the subject of the DCO, so as to test how its preferred option compares against potential alternative ways of meeting those objectives, and appears to concede that NGET has not done so and is unable to articulate what those objectives are. In circumstances where EU-derived environmental law requires an environmental assessment to set out the reasonable alternatives studied, the reference point for whether an alternative is a "*reasonable alternative*" is whether it "*will, or sensibly may, achieve the objectives*" of the plan or project in question: see e.g. **R (RLT Built Environment Ltd) v. Cornwall Council** [2017] J.P.L. 378 per Hickinbottom J. at paragraph 40. The assessment of alternatives makes no sense without such a reference point.¹ NGET's continued failure to specify what its project objectives are is highly telling and is a thinly veiled attempt to obfuscate and frustrate a transparent, fair and objective assessment of its proposals against alternative means to the same end(s).

¹ Whilst *RLT* was a case about SEA of a plan rather than EIA of a project, the same rationale applies in both contexts:

7. At paragraphs 46-53, the Harris Opinion makes various lengthy submissions about the 2025 EN NPS suite, but nowhere do they ultimately take issue with the basic proposition which PEAL's April Submissions make in relation to them, namely that whilst *relevant* they cannot be *determinative*. It can therefore be inferred that NGET accept that proposition.

LORD BANNER K.C.

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29th May 2026

Appendix D

Norwich to Tilbury National Grid Pylon Project

**Landscape Sensitivity Appraisal:
Colne Valley**

for

Essex Suffolk Norfolk Pylons

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Executive summary

Introduction

National Grid Electricity Transmission (National Grid) is proposing to build c.184km of new electricity transmission infrastructure in order to reinforce the high voltage power network in East Anglia between existing substations at Norwich Main in Norfolk, Bramford in Suffolk, and Tilbury in Essex, as well as to connect new offshore wind generation. The project is known as Norwich to Tilbury.

The Landscape Partnership has been commissioned by Essex Suffolk Norfolk Pylons action group and **Aldham Parish Council** to undertake a Landscape Sensitivity Appraisal of the Colne Valley and adjoining landscapes affected by the proposed Norwich to Tilbury project. The appraisal has been prepared to inform the ongoing Examination process and to provide an independent review of landscape and visual sensitivity within the area, together with consideration of whether the circumstances identified in National Policy Statement for Electricity Networks Infrastructure (EN-5) regarding widespread and significant adverse landscape and visual effects may arise.

The Area of Interest for the appraisal extends across the Colne Valley and adjoining plateau landscapes between the Dedham Vale National Landscape and the Roman River valley. It comprises a distinctive and interconnected landscape of river valleys, tributary valleys, rolling farmland, woodland, wetlands, historic settlements, rural lanes and recreational routes, which collectively contribute to a strong sense of place, local distinctiveness and landscape value.

The appraisal draws upon the evidence base presented within National Grid's Norwich to Tilbury Landscape and Visual Impact Assessment (N2T LVIA), supplemented by additional desktop research, field survey and professional judgement. It has been undertaken using established landscape sensitivity assessment principles derived from Natural England guidance and GLVIA3, whilst presenting findings in a format that allows comparison with the N2T LVIA.

The review broadly agrees with the N2T LVIA findings regarding the sensitivity of the principal Colne Valley landscapes. However, it also identifies two localised landscape character areas, the Grove Tributary Valley and the Roman River Corridor, that exhibit characteristics materially different from the wider plateau landscapes within which they occur. These areas contain concentrations of ecological, historic, cultural and perceptual features that contribute to elevated landscape sensitivity and are considered capable of experiencing substantial effects from the proposed development.

The appraisal identifies High landscape sensitivity within the Colne River Valley Floor, Colne River Valley Slopes, Grove Tributary Valley and Roman River Corridor. Collectively, these areas form a connected landscape framework extending through the Area of Interest. In line with the N2T LVIA, the findings of the appraisal indicate that there is the potential for Significant landscape effects to occur across a substantial and continuous section of the route corridor rather than being confined to isolated locations.

Review of the visual assessment similarly indicates the potential for widespread and Significant adverse visual effects affecting a broad range of receptors, including walkers, recreational users, road users and local communities; again in line with the N2T LVIA. Both studies show that the effects

identified are not limited to a small number of representative viewpoints but have the potential to be experienced across extensive parts of the valley landscape and associated public access network. The appraisal also demonstrates that the Colne Valley and Roman River corridor have been consistently recognised through landscape studies, planning policy documents and green infrastructure strategies as landscapes of particular importance. These landscapes perform strategic functions in relation to ecological connectivity, recreation, heritage, countryside access and local identity.

A comparison with the Stour Valley section of the Norwich to Tilbury project, where undergrounding has been incorporated within the scheme, indicates that landscapes of comparable value occur within both sections of the route. Whilst the Dedham Vale National Landscape designation remains an important distinction, the comparison demonstrates that the Colne Valley contains extensive areas of landscape value and sensitivity that are comparable in several respects to those present within the underground cable section.

EN-5 recognises that, whilst overhead lines remain the starting presumption for electricity transmission infrastructure, consideration may be given to alternatives including undergrounding where there is potential for widespread and significant adverse landscape and/or visual effects. Importantly, the policy makes clear that such considerations are not confined to nationally designated landscapes and should be assessed on a case-by-case basis.

Having regard to the identified landscape sensitivity, the concentration of significant landscape and visual effects, the strategic importance of the Colne Valley and Roman River corridors, and the provisions of EN-5, this appraisal concludes that there is a reasonable evidential basis for further consideration of localised undergrounding within this section of the route as a means of reducing landscape and visual effects. The appraisal does not seek to determine whether undergrounding should occur but concludes that the characteristics of the area are such that further examination of this option is justified within the decision-making framework established by EN-5.

The Landscape Partnership, June 2026

1 Introduction

1.1 Background

- 1.1.1 National Grid Electricity Transmission (National Grid) is proposing to build c.184km of new electricity transmission infrastructure in order to reinforce the high voltage power network in East Anglia between existing substations at Norwich Main in Norfolk, Bramford in Suffolk, and Tilbury in Essex. The project is known as Norwich to Tilbury.
- 1.1.2 National Grid states that the project is required in response to increasing electricity demand and the need to connect new generation capacity, particularly offshore wind, into the national grid. Early route development and consultation work considered a range of corridor options across Norfolk, Suffolk and Essex.
- 1.1.3 Norwich to Tilbury comprises a new 400kV electricity transmission connection between Norwich Main Substation and Tilbury Substation, including approximately 159km of new overhead line supported by steel lattice pylons, approximately 25km of underground cabling, six Cable Sealing End compounds, a new East Anglia Connection Node substation, a new Tilbury North substation, works at existing substations and associated construction and access infrastructure, referred to here as the *proposed development*.
- 1.1.4 Norwich to Tilbury meets the criteria of a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008, since it would comprise more than 2km of overhead line. As such, the application for development consent is being submitted to the Planning Inspectorate. If consent for the project is awarded, this would be granted in the form of a Development Consent Order (DCO) from the Secretary of State for Housing, Communities and Local Government following a public examination of the application. Consultation is an important part of the DCO process.
- 1.1.5 Following submission of the Development Consent Order (DCO) application and its acceptance for examination by the Planning Inspectorate, the Norwich to Tilbury project entered the Examination phase on 10th February 2026. The Examination is ongoing and provides an opportunity for interested parties, statutory consultees and other stakeholders to submit evidence and representations to the Examining Authority.
- 1.1.6 At the time of writing (June 2026), the Examination has progressed to Deadline 5. This deadline includes the submission of responses to the Examining Authority's Second Written Questions (ExQ2), comments on submissions made at Deadline 4, updated application documents and any additional information requested by the Examining Authority.

1.2 Essex Suffolk Norfolk Pylons

- 1.2.1 Throughout the development of the proposals, concerns have been raised by groups and individuals regarding the potential effects of the scheme on valued landscapes, countryside character and green infrastructure corridors. One of the organisations expressing such concerns is the Essex Suffolk Norfolk Pylons action group.

- 1.2.2 The Essex Suffolk Norfolk Pylons, which currently has approximately 40,000 supporters, opposes the proposed Norwich to Tilbury overhead line and the limited sections of underground cabling currently proposed by National Grid. The Group advocates consideration of alternative approaches, including an integrated offshore grid, HVDC undergrounding and reinforcement or re-rating of the existing transmission network, which the group considers may reduce environmental and landscape effects associated with the proposed scheme.
- 1.2.3 Essex Suffolk Norfolk Pylons has raised concern regarding the potential effects of the proposed overhead transmission lines crossing the landscape of the Colne Valley in north Essex. It has sought to understand whether the landscape is of sufficient sensitivity, and whether the likely adverse landscape and visual impacts may be sufficiently widespread and significant, to support consideration of underground cabling for this section of the route, as has been proposed for other sensitive landscapes including the Dedham Vale National Landscape and the Waveney Valley.

1.3 Planning context for undergrounding within sensitive landscapes

- 1.3.1 The consideration of undergrounding within sensitive landscapes is reflected within national planning policy for electricity transmission infrastructure. National Policy Statement for Electricity Networks Infrastructure (EN-5) §2.9.21 identifies that overhead lines should be the strong starting presumption for electricity transmission infrastructure, whilst noting that *“this presumption is reversed when proposed developments will cross part of a nationally designated landscape (i.e. National Park, The Broads, or National Landscape)”*. In the latter circumstances, and where harm to the landscape, visual amenity and natural beauty cannot be avoided by re-routing, the strong starting presumption will be to underground the relevant section of the line.
- 1.3.2 Notwithstanding this, §2.9.24 recognises that cases will arise where: *“though no part of the proposed development crosses a designated landscape, a high potential for widespread and significant adverse landscape and/or visual impacts along certain sections of its route may result in recommendations to use undergrounding for relevant segments of the line or alternatively consideration of using a route including subsea cabling”*.
- 1.3.3 EN-5 notes that when considering underground options, the Secretary of State must weigh the feasibility, cost, and any harm of the undergrounding against the adverse implications of the overhead line proposal; the cost and feasibility of re-routing overhead lines or mitigation proposals for the relevant line section; and the cost and feasibility of the reconfiguration, rationalisation, and/or use of underground of existing infrastructure [§2.9.25].
- 1.3.4 They should only grant development consent for underground sections if they are satisfied that *“the benefits accruing from alternative proposal clearly outweigh any extra economic, social, or environmental impacts that it presents, the mitigation hierarchy has been followed, and that any technical obstacles associated with it are surmountable”* [§2.9.26]. In making this judgement, consideration should be given to several financial and environmental factors. Those of relevance to this appraisal include:
- The landscape and visual baseline characteristics of the relevant section of the proposed route, and especially the impact on any high sensitivity visual receptors (as defined in the

Guidelines for Landscape and Visual Impact Assessment¹ (GLVIA3), residential areas, designated landscapes, valued landscapes, designated heritage assets and Heritage Coasts (including impacts on the setting of these designated features and areas).

- The potentially very disruptive effects of undergrounding, including on landscape and visual amenity. The text notes that undergrounding an overhead line would mean digging a trench along the length of the route, and that as such, the works will often be more disruptive – albeit temporarily – to receptors than would an overhead line.

1.3.5 When making decisions, the Secretary of State should be satisfied that the development, so far as is reasonably possible, complies with the Holford and Horlock Rules (see Essex Suffolk Norfolk Pylons’ High-Level Landscape Sensitivity Appraisal) and that all feasible options for mitigation, including *“the rationalisation, reconfiguration, or undergrounding of existing electricity networks infrastructure, have been considered and evaluated appropriately”* [§2.11.3].

1.3.6 EN-5 provides further clarification regarding the decision-making process at §2.11.6:

Away from designated landscapes and in locations where there is a high potential for widespread and significant adverse landscape and/or visual impacts, the Secretary of State should be satisfied that the applicant has provided evidence to support a decision on whether undergrounding is or is not appropriate, having considered this on a case-by-case basis, weighing the considerations in paragraph 2.9.25 above.

1.4 Commission and objective of the appraisal

1.4.1 The Landscape Partnership has been commissioned by Essex Suffolk Norfolk Pylons and Aldham Parish Council to carry out a sensitivity appraisal of the Colne Valley landscape. The primary purpose of this appraisal is to consider whether the proposed overhead transmission infrastructure has the potential to give rise to widespread and significant adverse landscape and visual effects within the Colne Valley, such that the considerations set out in EN-5 §§2.9.24 and 2.11.6 may be engaged.

1.4.2 Through reference to the parameters set out in EN-5, the appraisal seeks to provide initial observation as to whether the section of Norwich to Tilbury that crosses the Colne Valley might be a candidate for undergrounding from a landscape and visual perspective. It is recognised that other matters that the Secretary for State will need to consider are beyond the scope of this report.

1.4.3 The appraisal builds on the evidence base provided in the N2T LVIA, supplemented with additional desktop research, field work and local knowledge to summarise the baseline landscape and visual sensitivity of the Area of Interest, including its value and its susceptibility to large-scale overhead electricity transmission infrastructure of the type proposed for the Norwich to Tilbury project, together with a high-level overview of the degree and extent of the likely impact of the development on landscape and visual receptors.

¹ Guidelines for Landscape and Visual Impact Assessment, The Landscape Institute and Institute of Environmental Management and Assessment, 3rd Edition, April 2013

1.5 Area of Interest

- 1.5.1 The appraisal focuses on a section of the Colne Valley and immediate adjoining plateau landscapes, located between the Dedham Vale National Landscape to the north and the Roman River valley to the south. This *Area of Interest* (see Figure 01) extends westwards to the National Rail line and eastwards to the outskirts of Colchester. This landscape is characterised by a distinctive mosaic of river valley scenery, open farmland, wooded slopes, wetlands, narrow rural lanes and historic settlement patterns, creating a landscape of strong rural character, characterised by visual diversity, a richness of landscape pattern and a pronounced sense of time-depth.
- 1.5.2 The Area of Interest would be directly affected by the Norwich to Tilbury proposals, which would include a Sealing End Compound located between Wormingford and Horkesley and, from this, overhead electricity transmission lines extending southwards across the valley landscape, passing between Fordham, Ford Street and Aldham to the west, and West Bergholt and Eight Ash Green to the east.
- 1.5.3 The appraisal will consider whether the proposed development has the potential to threaten the intrinsic qualities of the Colne Valley landscape through the introduction of large-scale vertical infrastructure into a predominantly open and rural valley setting. Potential areas of concern include whether the proposed overhead lines and pylons may adversely affect the area's scenic quality, sense of tranquillity, historic landscape character, and long-distance views across the valley and adjoining plateau landscapes. Likewise, whether the scale and industrial appearance of the infrastructure have the potential to diminish the coherence of the valley's distinctive mosaic of farmland, woodland, wetlands and historic settlements, altering its perceived rural character and visual integrity.

1.6 Scope of the appraisal

- 1.6.1 This Landscape Sensitivity Appraisal builds on previous work undertaken by The Landscape Partnership, including the High-Level Landscape Sensitivity Appraisal of the whole route prepared in July 2024 as part of the Pre-Application Consultation.
- 1.6.2 The appraisal has had regard to the Landscape and Visual Impact Assessment (LVIA) prepared for National Grid as part of the Environmental Statement for the Norwich to Tilbury project. Whilst the purpose of this appraisal is not to replicate or replace the LVIA, the methodology, baseline assessment, sensitivity judgements and significance conclusions have been reviewed in order to understand the nature, extent and significance of the landscape and visual effects identified within the Area of Interest. In this report this LVIA is referred to as N2T LVIA (Norwich to Tilbury LVIA).
- 1.6.3 The appraisal reviews the value of the landscape and visual receptors within the Area of Interest and their susceptibility to change arising from the type of development proposed, before making a judgement regarding the overall sensitivity of each receptor. It then provides a high-level review of the likely landscape and visual effects of the proposed development and commentary on comparisons with other sections of the Norwich to Tilbury project where undergrounding has been adopted or considered. Finally, it considers the implications of these findings in relation to EN-5, including whether there is potential for widespread and significant adverse landscape and visual

effects such that consideration of feasible alternatives, including localised undergrounding, may be appropriate.

- 1.6.4 The findings of the appraisal, including any commentary and advice, will be used by Essex Suffolk Norfolk Pylons to enable them to compile an informed consultation response.

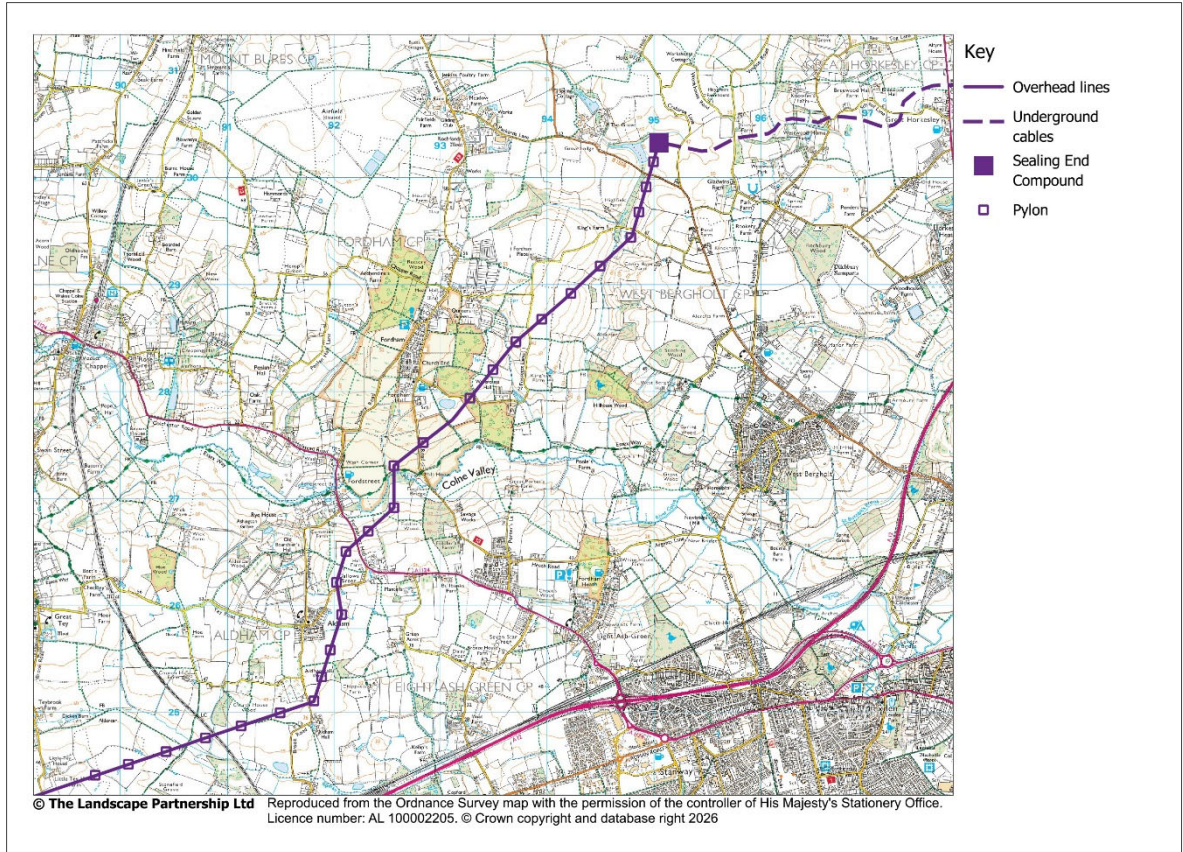


Figure 01: The Area of Interest

1.7 Statement of Competency

- 1.7.1 The Landscape Partnership has been at the forefront of environmental and landscape planning in the UK for 40 years and is a specialist in undertaking strategic landscape studies and in providing landscape planning advice.
- 1.7.2 The practice’s services range from large scale landscape character assessments, regional green infrastructure strategies, landscape capacity and sensitivity studies, through to site specific landscape and visual impact assessments and appraisals. Its clients encompass the public, private and voluntary sectors and its team of Chartered Landscape Architects provide professional and impartial advice to assist at all stages of the development planning process.
- 1.7.3 The Landscape Partnership is able to advise on the protection and enhancement of landscapes, and has developed robust and rigorous methodologies to assess the potential landscape effects associated with development. Its staff provide clear analysis and are able to defend their judgements as expert witnesses.

1.7.4 This Landscape Sensitivity Appraisal was led by Simon Neesam. Simon is a Director of The Landscape Partnership and a Chartered Landscape Architect with over 30 years' experience in landscape architecture and landscape planning. He holds a degree and postgraduate diploma in Landscape Architecture and became a fully qualified Chartered Member of the Landscape Institute in 1994. Simon has extensive experience undertaking Landscape and Visual Impact Assessments, landscape sensitivity and capacity studies, and strategic landscape planning work for private clients and national, regional, and local public sector bodies throughout the UK. His experience includes retail, highway, commercial, renewable energy, landfill and mineral, flood alleviation, and major residential development projects, often within sensitive or potentially contentious landscapes. Where necessary, he has defended his decisions and judgements as an expert witness at public inquiries and appeal hearings. Simon has also acted as Project Landscape Architect for several HLF-funded restorations and public realm projects, and has coordinated design guides and green infrastructure strategies; including the Cambridge Sustainable Urban Drainage Systems Design Guide, which won Project of the Year at the Landscape Institute Awards.

2 Methodology

2.1 Overview

- 2.1.1 The methodology for undertaking this Landscape Sensitivity Appraisal was based on the process set out in *An approach to landscape sensitivity assessment – to inform spatial planning and land management* (ALSA), Natural England, June 2019², informed by the Landscape Institute's *TGN 02-21: Assessing landscape value outside national designations* (ALVOND), May 2021. Reference was also made to *Guidelines for Landscape and Visual Impact Assessment*, 3rd Edition (GLVIA3) and *Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity*, Countryside Agency and Scottish Natural Heritage, 2002.
- 2.1.2 ALSA and GLVIA3 adopt a similar basic approach to the assessment of sensitivity, whereby sensitivity is derived from a combination of the value of a landscape or visual receptor and its susceptibility to a particular type of change.
- 2.1.3 Unlike a project-specific LVIA, which typically involves a detailed assessment of effects on all identified receptors, this appraisal focuses on reviewing landscape sensitivity and providing a high-level commentary on likely effects within the Area of Interest.
- 2.1.4 The methodology has been applied in a transparent and auditable manner to enable a clear understanding of the basis for the sensitivity judgements presented within this report, proportionate to the scope of the commission. For ease of comparison with the N2T LVIA, the presentation of value, susceptibility, sensitivity and effect judgements has been structured, where appropriate, to align with the approach set out in N2T Environmental Statement Appendix 13.1: Landscape and Visual Methodology. This does not affect the independent nature of the appraisal or the methodology described above.
- 2.1.5 This appraisal has been prepared as a proportionate review of the sensitivity and likely effects identified within the N2T LVIA. It does not seek to replicate the detailed assessment undertaken as part of the Environmental Statement. Instead, it draws upon that existing evidence base, supplemented by targeted desktop review, field survey and professional judgement, in order to consider whether the characteristics of the Area of Interest indicate potential for widespread and significant adverse landscape and visual effects of the type referred to in EN-5.

2.2 Landscape sensitivity

- 2.2.1 In accordance with ALSA and GLVIA3, overall sensitivity is derived through the combination of value and susceptibility.
- 2.2.2 **Landscape value** is based on considerations such as landscape quality/condition; landscape fabric and rarity; scenic quality; wildlife, heritage and cultural interest; recreation value; and perceptual aspects. The presence of a landscape designation can help to identify value, and the reasons for a designation are typically established through supporting studies. Landscapes or features without any formal designation may also express characteristics that are valued locally. Where there is no

² Tudor, C, Natural England, 2014, Op Cit

supporting evidence base, details regarding value should typically be derived from landscape character assessments.

- 2.2.3 Susceptibility to change** assesses the relative ability of a landscape to accommodate the changes that would result from a particular type of development. This is an integral element of the landscape assessment but one that can only be judged in the context of the generic type of development being proposed. However, it is not necessary to understand the specifics of the development to make this judgement and thus susceptibility to change can be considered as part of the baseline assessment.

2.3 Landscape value

- 2.3.1** TGN 02-21, ALVOND uses the following definition for Landscape Value:

Landscape value = the relative value or importance attached to different landscapes by society on account of their landscape qualities (see Table 1).

The definition of landscape value used in this TGN draws on, and is compatible with, the GLVIA3 definition of landscape value as well as Natural England's definition (Landscape Institute and Institute of Environmental Management & Assessment, 2013; Tudor, 2014). The definition makes it clear that it is 'society' that assigns value to landscapes. However, landscape value means more than popularity and the Landscape Institute suggests that value assessments should be undertaken by a landscape professional, drawing on evidence from stakeholders where available.

- 2.3.2** The N2T LVIA includes an assessment of landscape value for the Landscape Character Areas within the Area of Interest. This Landscape Sensitivity Appraisal reviews those value judgements and considers whether local landscape, ecological, historic and perceptual characteristics within the Area of Interest are adequately reflected in those judgements. Professional judgement has been applied, having regard to the evidence base listed below, to determine whether any refinement to the value judgements presented within the N2T LVIA is warranted.

2.4 Susceptibility to change

- 2.4.1** In 2024 The Landscape Partnership was instructed by Essex Suffolk Norfolk Pylons to undertake an independent High-Level Landscape Susceptibility Appraisal (HLSA), which considered the potential influence of the proposed Norwich to Tilbury overhead transmission line on landscape character and visual receptors across the wider route corridor. As a strategic route-wide appraisal, the study was undertaken at a broader scale than the present appraisal.

- 2.4.2** The current appraisal focuses specifically on the Colne Valley section of the proposed route and reviews the susceptibility judgements presented within the N2T LVIA and considers whether local variations in landscape character within the Area of Interest are adequately reflected in those judgements. Again, professional judgement has been applied, together with consideration of the findings of the HLSA, to determine whether any refinement to the susceptibility judgements presented within the LVIA is warranted.

- 2.4.3** Overhead transmission lines introduce large-scale vertical infrastructure into the landscape. Pylons are typically perceived as modern features that can contrast with established rural landscape

patterns and are often visually prominent due to their height and scale. The ability of a landscape to accommodate such change is influenced by its character, scale, enclosure, existing infrastructure and perceptual characteristics.

2.4.4 Landscape susceptibility is influenced by topography, scale and enclosure. Smaller-scale valley landscapes and tributary valleys are often less able to accommodate large vertical structures than broader, more expansive landscapes, where infrastructure may be perceived as a less dominant element.

2.5 Landscape and visual effects

2.5.1 The appraisal does not seek to replicate the detailed LVIA undertaken for the Norwich to Tilbury project. Instead, it provides a high-level review of the landscape and visual effects identified within the N2T LVIA, supplemented by targeted desktop review, field survey and professional judgement.

2.5.2 Particular attention is given to:

- the geographic extent of identified effects
- the sensitivity of affected receptors
- the magnitude and significance of effects reported within the Area of Interest
- the extent to which local landscape characteristics may influence those effects

2.5.3 The review is intended to provide an overview of the potential implications of the proposed development for the Area of Interest and to inform consideration of the policy tests contained within EN-5.

2.6 National Policy Statement for Electricity Networks Infrastructure (EN-5)

2.6.1 As noted above, this appraisal has been undertaken having regard to the contents of National Policy Statement for Electricity Networks Infrastructure (EN-5), including its provisions relating to landscape and visual effects associated with overhead electricity transmission infrastructure. The findings are intended to provide an evidence base to inform consideration of whether the proposed overhead transmission infrastructure has the potential to give rise to widespread and significant adverse landscape and visual effects within the Colne Valley.

2.6.2 The appraisal is not intended to determine whether undergrounding should occur. Rather, it seeks to inform consideration of whether the circumstances described in EN-5 §§2.9.24 and 2.11.6 may arise within the Area of Interest.

2.7 Baseline data collection

2.7.1 Baseline data was collated with reference to the following sources:

- Essex Landscape Character Assessment - 2003
- Colchester Borough Landscape Character Assessment, Chris Blandford Associates – 2005
- Colchester Landscape Character Assessment, Land Use Consultants, 2024

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- Review of Countryside Conservation Areas (Chris Blandford Associates) - 2006
 - Haven Gateway Green Infrastructure Strategy -2008
 - Colchester Borough Green Infrastructure Strategy – Report Part 1 2011
 - Essex Green Infrastructure Strategy - 2020
 - High-Level Landscape Susceptibility Appraisal (HLSA), The Landscape Partnership, 2024
 - Colchester Borough Local Plan 2017–2033 Section 2 – July 2022
 - Colchester Protected Lanes Report - 2015
 - West Bergholt Neighbourhood Plan – 2016
 - West Bergholt Neighbourhood Plan – 2019
 - Marks Tey Neighbourhood Plan, 2017
 - Norwich to Tilbury NSIP Preliminary Environmental Impact Report (PEIR) – June 2024
 - Norwich to Tilbury - Environmental Statement – August 2025
 - DEFRA’s MAGIC map
 - Ordnance Survey 1:25,000 mapping
 - Ordnance Survey Six-inch maps (first and second editions)

2.7.2 To verify the desktop research, a site visit was undertaken by Chartered Landscape Architects and Members of the Landscape Institute in June 2026. The Area of Interest, local rights of way and publicly accessible locations (including areas with recreational access) were visited. Weather conditions were good and visibility across the landscape was clear. The site visit was undertaken when deciduous trees were in full leaf and seasonal vegetation within fields was present, allowing an understanding of the existing degree of enclosure and vegetation structure within the landscape, whilst recognising that large-scale overhead transmission infrastructure would remain visually prominent above much of the vegetation cover. Consideration is given to the seasonal effects of the deciduous vegetation, and any consequent changes in visibility.

3 Landscape context

3.1 Landscape Character context

3.1.1 The Area of Interest comprises the Colne Valley and adjoining plateau landscapes west of Colchester. The landscape is characterised by a combination of river valleys, tributary valleys, rolling farmland, woodland, historic settlements and a dense network of rural lanes and Public Rights of Way. The area forms part of the wider rural hinterland of Colchester and exhibits a strong sense of continuity, local distinctiveness and rural character.

3.2 Published landscape character assessments

3.2.1 The importance of understanding the landscape character of all landscapes in England is recognised in the National Planning Policy Framework (NPPF) at §180, which states that planning policies and decisions should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes in a manner commensurate with their statutory status or identified quality in the development plan; and by recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services, including trees and woodland. Landscape character assessment is the process which can identify these intrinsic values and unique characteristics of the diverse landscapes in the UK.

3.2.2 Landscape character assessments enable landscapes to be described and understood by mapping natural, physical and cultural features in order to define different landscapes and demonstrate what makes them special. Landscape character types share similar characteristics, such as underlying geology, soil type, topography and landform, the pattern and type of land/field enclosure, historic land use, the pattern of settlements and types of building that these comprise, tree and woodland cover and the general visual experience of the area. Landscape character areas are specific geographic areas that exhibit a particular landscape character type.

3.2.3 Effects on landscape character can be both direct, i.e. on the character area/landscape type that the site is located within, and indirect, i.e. changes to characteristics or perceptions of character that occur beyond the boundary of a character area/landscape type. In addition, effects on landscape character may be positive or negative, i.e. strengthening and enhancing the characteristic patterns and features, or eroding and losing the patterns and features that contribute to landscape character.

3.2.4 There are three relevant landscape character assessments that encompass the Area of Interest. These are the national-level National Character Area profiles, the county level Essex Landscape Character Assessment, and the district level Colchester Landscape Character Assessment.

3.2.5 The Area of Interest encompasses two **National Character Areas**; NCA 111: Northern Thames Basin, which is characterised as a varied landscape comprising river valleys, rolling farmland, woodland, historic settlements and a strong network of transport and infrastructure corridors, and NCA 86: South Suffolk and North Essex Clayland, which is an enclosed wooded arable landscape with gently undulating clay plateau, small river valleys, ancient woodlands and species-rich hedgerows.

3.2.6 The **Essex Landscape Character Assessment** (2003) provides the strategic county-level framework for understanding landscape character across Essex. Within this assessment, the Area of Interest falls broadly within the River Valley Landscapes character type associated with the Colne Valley and its tributaries.

3.2.7 **Colchester Landscape Character Assessment** (CLCA), which was prepared in 2024, updates the earlier Colchester Borough Landscape Character Assessment, 2005. The Area of Interest falls within the following LCAs.

- A4 – Colne River Valley Floor: forms the central corridor of the Area of Interest, comprising the flat to gently undulating floor of the River Colne with pasture, wetlands, riparian vegetation and a strong sense of enclosure associated with the valley landscape.
- A5 – Colne River Valley Slopes: occupies the valley sides on either side of the Colne Valley within the Area of Interest, characterised by sloping agricultural land, woodland, historic parkland and elevated views across the valley floor.
- B2 – Easthorpe Farmland Plateau: located in the southern part of the Area of Interest, comprising gently rolling agricultural plateau landscapes with arable farmland, hedgerows, scattered woodland and dispersed rural settlement.
- B4 – Great Tey Farmland Plateau: forms part of the western extent of the Area of Interest, characterised by open arable farmland, hedgerow field boundaries, rural lanes and a network of small villages and farmsteads.
- B5 – Rochford’s Farmland Plateau: occupies parts of the northern side of the Area of Interest between the Colne Valley and Dedham Vale landscapes, comprising a predominantly agricultural plateau with a mix of arable fields, hedgerows, woodland blocks and historic rural settlement.
- B6 – Great Horkesley Farmland Plateau: located within the northern part of the Area of Interest around Great Horkesley and Wormingford, characterised by elevated farmland, mature hedgerows, woodland cover and strong visual relationships with the adjacent Colne Valley landscape.

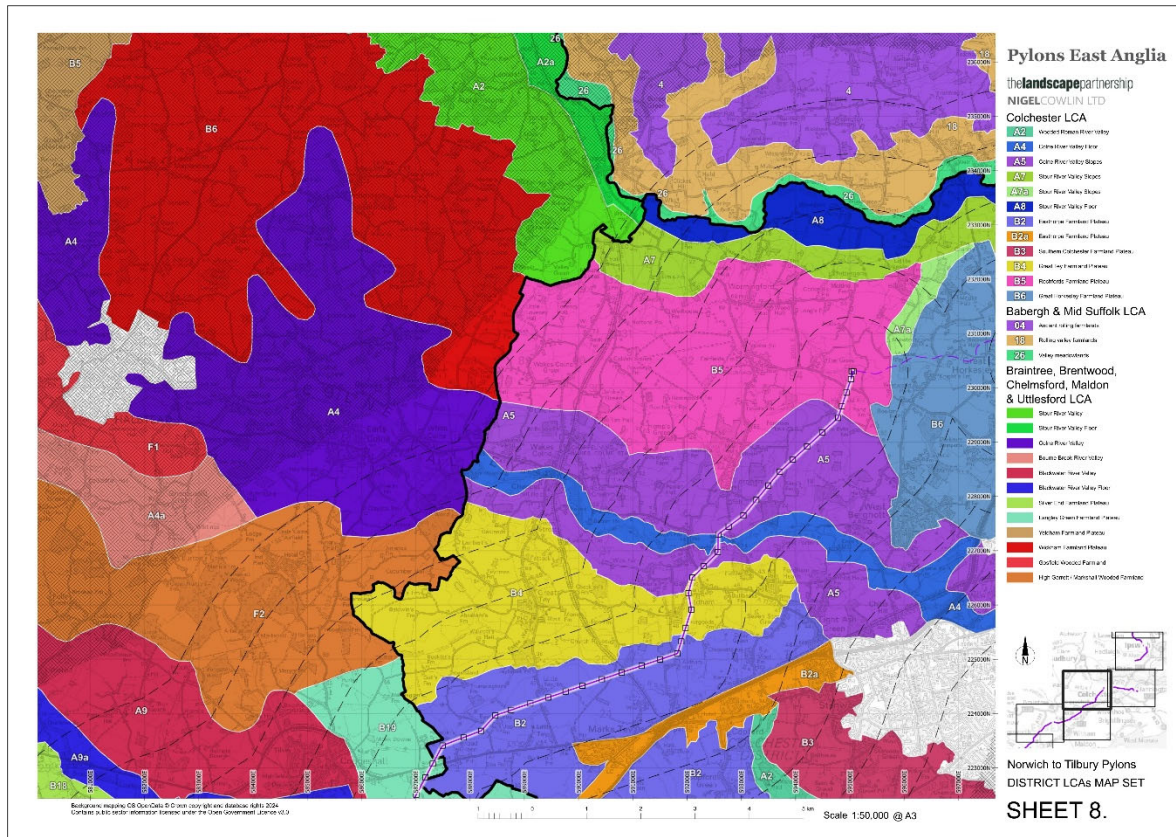


Figure 02: Landscape Character Areas (extract from HLSA, 2024)

3.3 Localised Landscape Character Areas

- 3.3.1 While the CLCA provides an appropriate framework for understanding landscape character within the Area of Interest, it is recognised that landscape character assessments are undertaken at a strategic scale and that localised variations in landscape character can occur within broader landscape character areas.
- 3.3.2 Areas located close to landscape character boundaries may exhibit characteristics and sensitivities associated with more than one character area. In addition, locally distinctive combinations of landscape, ecological, historic and cultural features may result in areas of elevated landscape sensitivity that are not fully reflected within broader character area descriptions.
- 3.3.3 Study of the Area of Interest as part of the field work for this review identified two additional localised landscape character areas (LLCAs) which were considered to exhibit characteristics that differ materially from the wider landscape character areas within which they are located. For the purposes of this appraisal, these areas are referred to as:
- B5a – Grove Tributary Valley
 - B2/B4 – Roman River Corridor
- 3.3.4 The extent of the refined localised landscape character areas is shown on Figure 02.

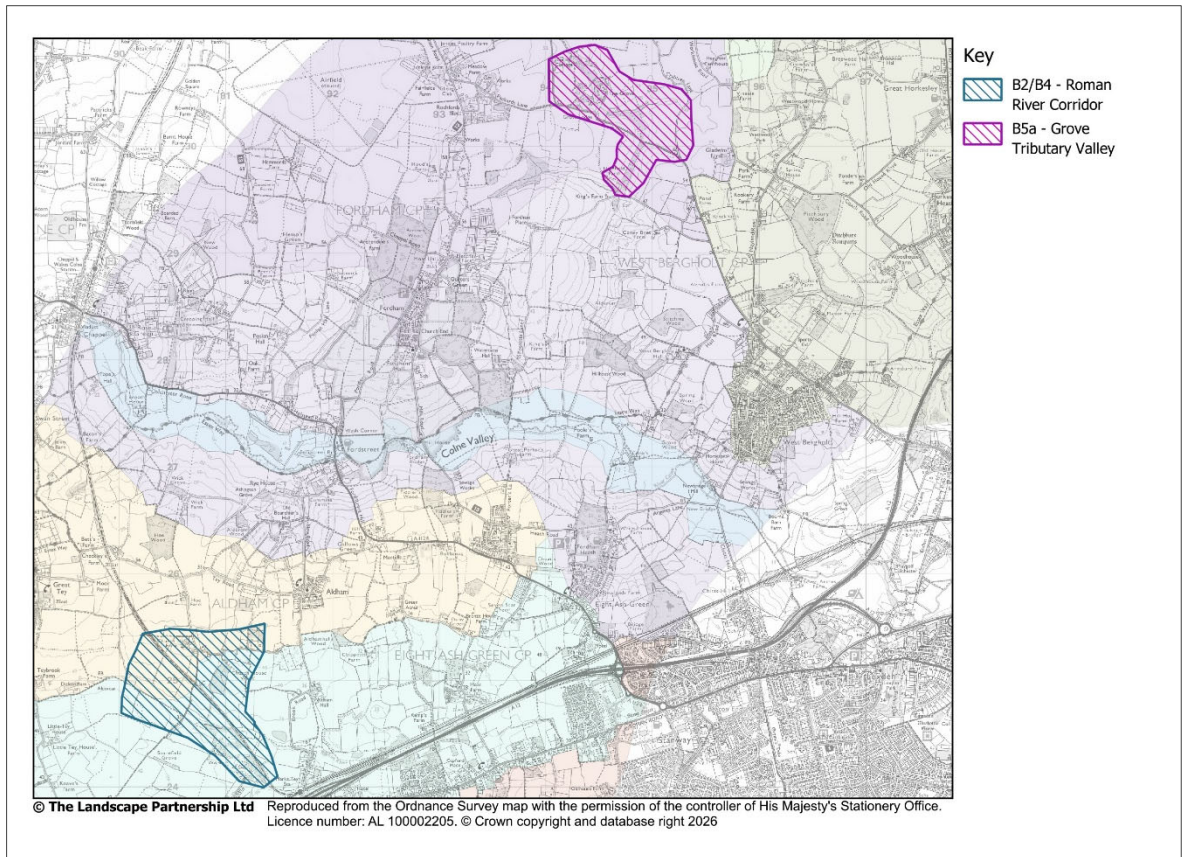


Figure 03: B5a – Grove Tributary Valley and B2/B4 – Roman River Corridor

B5a – Grove Tributary Valley

- 3.3.5 This LLCA is located within the B5: Rochford’s Farmland Plateau landscape character area. While currently included within the wider plateau landscape LCA, the area exhibits a distinct combination of topographical, ecological and historic characteristics.
- 3.3.6 The area comprises a tributary valley landscape associated with an unnamed watercourse draining southwards towards the River Colne. The valley is characterised by a network of watercourses, ponds and associated riparian vegetation, creating a more enclosed and visually contained landscape than is generally evident within the wider Rochford’s Farmland Plateau.
- 3.3.7 The area also contains dispersed historic farmsteads and listed buildings, including The Grove, Highfield Farm and Spring Cottage, together with numerous Historic Environment Record assets and Protected Lanes, including Crabtree Lane, which collectively contribute to the area's strong sense of history, time-depth and local distinctiveness.

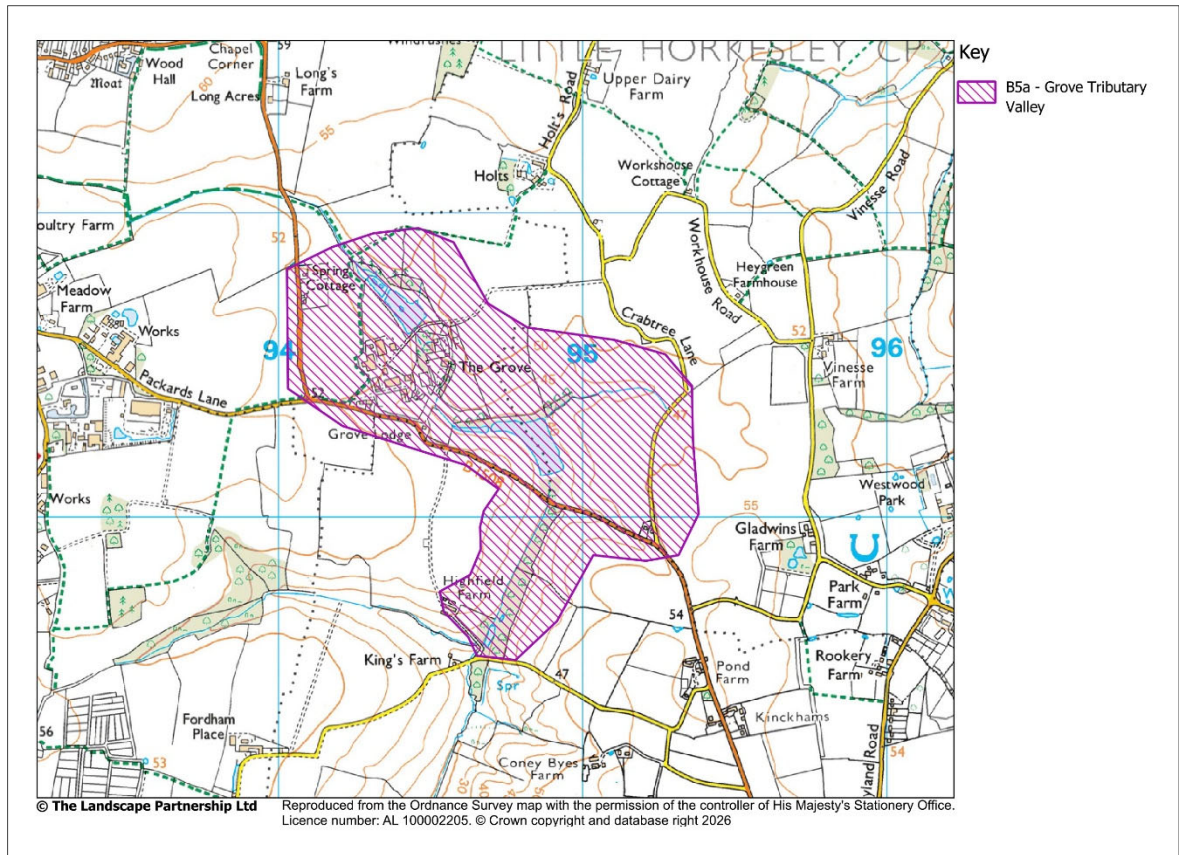


Figure 04: B5a – Grove Tributary Valley

B2/B4 - Roman River Corridor

- 3.3.8 This LLCA occurs along the Roman River corridor within parts of B4: Great Tey Farmland Plateau and B2: Easthorpe Farmland Plateau. This corridor exhibits a distinct combination of ecological, historic and landscape characteristics associated with the river valley and its immediate setting, discrete from the wider plateau landscapes identified in the CLCA.
- 3.3.9 The LLCA is characterised by the presence of the Roman River and associated riparian vegetation, Church House Wood Ancient Woodland and Local Wildlife Site, Marks Tey Brickpit SSSI, Local Wildlife Site and Geological Conservation Review (GCR) site, Historic Environment Record assets, and the corridor of the Gainsborough Line railway, a well-established scenic rural railway linking Marks Tey with Chappel, Sudbury and the wider Stour Valley landscape. Pastoral land use associated with the river corridor further contributes to the LLCA rural character and reinforces its traditional agricultural landscape. Together, these features form the distinct ecological, historic and recreational character of the landscape corridor.

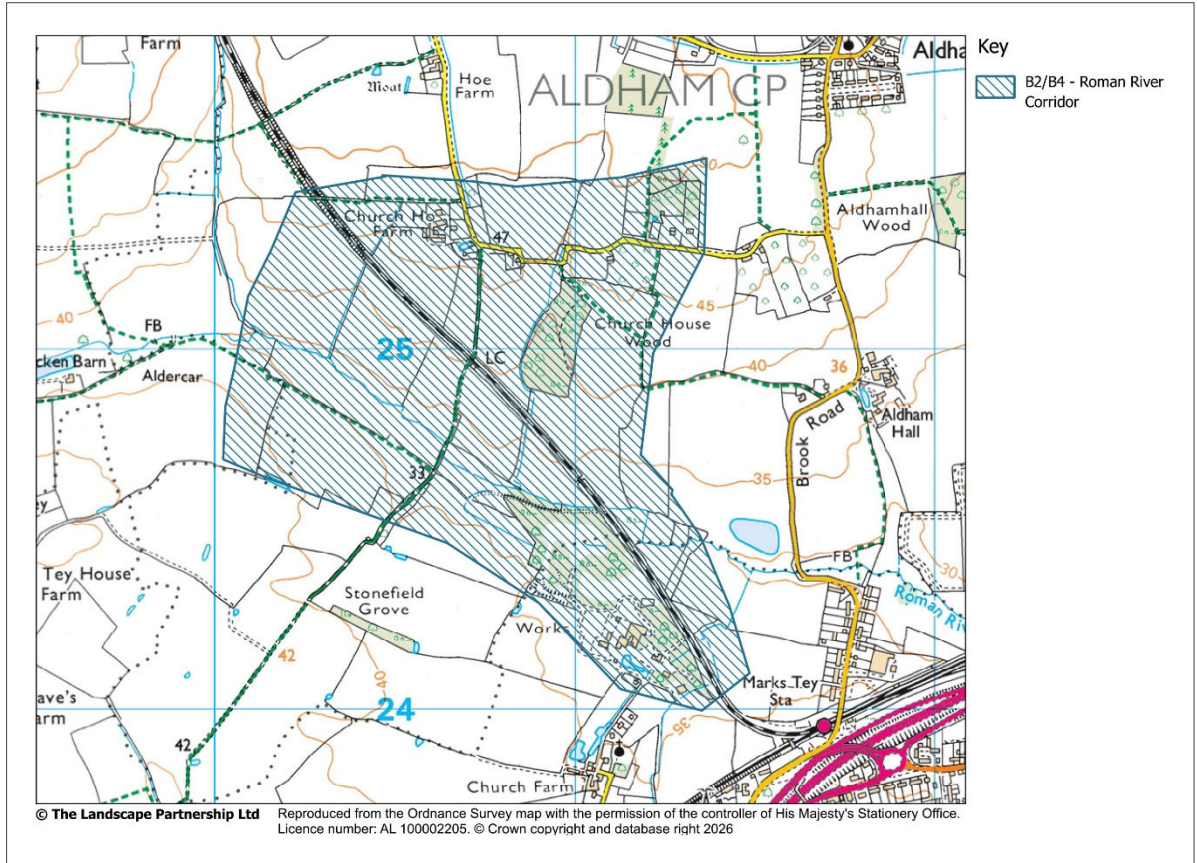


Figure 05: B2/B4 – Roman River Corridor

3.3.10 Historic Ordnance Survey mapping indicates that Church House Wood formerly extended beyond its present south-eastern boundary. Although this area is no longer wooded, the historic mapping evidence provides an understanding of the area's long-term landscape evolution and the continuity of woodland cover within the Roman River Valley.



Figure 06: Church House Wood - OS Six Inch, 1888-1915 (left) and current edition OS Map Explorer (right).

- 3.3.11 Comparison of historic Ordnance Survey mapping (1888–1915) with current mapping also indicates that the Roman River corridor has retained a high degree of field pattern continuity. The alignment of the river crossing, adjacent routeways and a number of field boundaries remains largely unchanged, with little evidence of substantial field boundary loss or reorganisation. This enhances the legibility of the historic landscape and demonstrates the persistence of its underlying landscape structure.

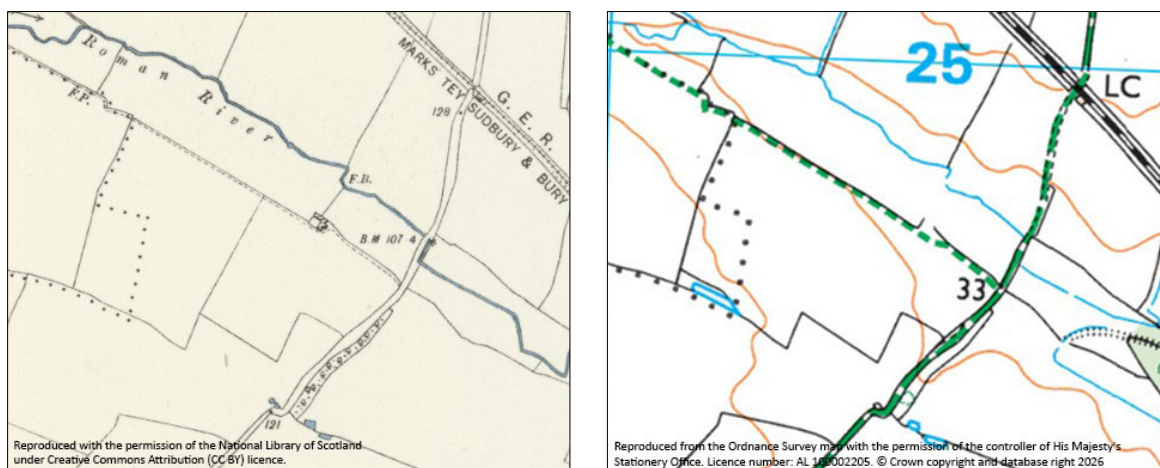


Figure 07: Field patterns - OS Six Inch, 1888-1915 (left) and current edition OS Map Explorer (right)

- 3.3.12 The combined presence of long-established woodland, a largely intact historic field pattern, archaeological interest and surviving historic landscape features creates a strong sense of time-depth within the Roman River Valley.
- 3.3.13 The landscape also exhibits a strong sense of historic continuity associated with dispersed settlement and ecclesiastical features, including the former medieval church site east of Great Tey along the narrow rural corridor of Rectory Road, together with associated historic place names such as Church House Farm and Old Rectory.
- 3.3.14 The refined LLCAs identified above are not intended to replace the LCAs identified within the CLCA. Rather, they provide a more detailed understanding of character of the local landscape within specific parts of the Area of Interest and are used to inform the subsequent appraisal of landscape value, susceptibility, sensitivity and likely effects.

3.4 Evidence of Landscape Value

Environmental and Heritage Assets

- 3.4.1 The Area of Interest and its immediate setting, contains a wide range of environmental and heritage assets that contribute positively to landscape character, local distinctiveness and landscape value. These include:
- **Dedham Vale National Landscape** immediately to the north of the Area of Interest;
 - **Marks Tey Brickpit SSSI** and Geological Conservation Review (GCR) site;
 - **Areas of Ancient Woodland** including Hillhouse Wood, Stitching Wood and Church House Wood;

- Other woodland blocks and shelterbelts which contribute to landscape structure, enclosure and ecological connectivity;
- Local Wildlife Sites and associated ecological corridors;
- Veteran trees and mature hedgerow networks;
- **Conservation Areas** at Fordstreet and Little Horkesley;
- Scheduled Monument at Pitchbury Ramparts;
- Numerous Listed Buildings, historic farmsteads and churches;
- **Protected rural lanes** including Crabtree Lane, Workhouse Road and Holt's Road;
- Fordham Heath, Fordham Hall Estate Woodland and Iron Latch Nature Reserve;
- Extensive Public Rights of Way and recreational routes including the **Essex Way, Colne Valley Path and Route 13 of the National Cycle Network**

3.4.2 Collectively, these assets contribute to the ecological, historic, cultural, recreational and scenic qualities of the landscape and provide evidence of its elevated value. Those assets illustrated on Figure 08 are highlight in **bold**.

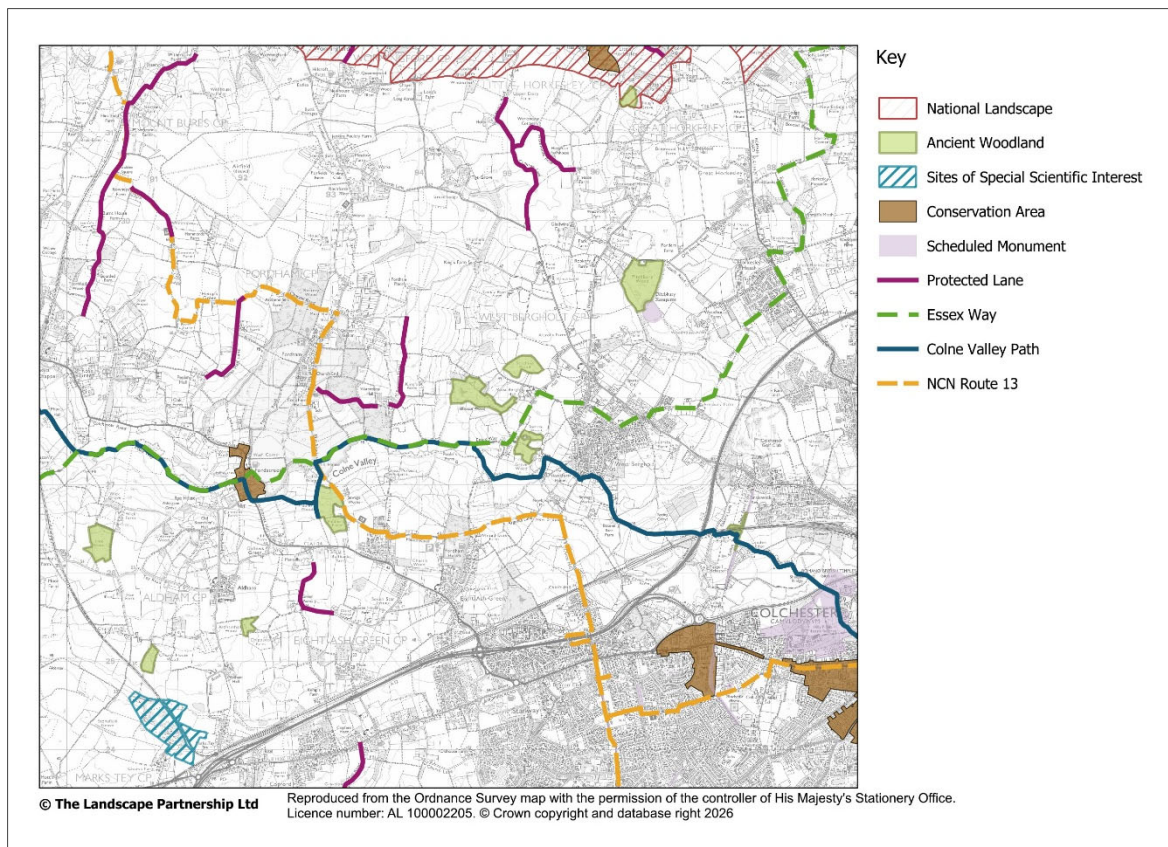


Figure 08: Environmental and Heritage assets

3.5 Historic recognition of landscape value

- 3.5.1 The countryside of the Colne Valley west of Colchester has been consistently recognised through successive planning policy and evidence-base studies as a landscape of particular value and sensitivity. Historically, much of the area formed part of the Essex Structure Plan Special Landscape Areas (SLA) and was subsequently identified by Colchester Borough Council as Countryside Conservation Areas (CCAs).
- 3.5.2 Field survey, review of historic mapping and consideration of more recent evidence-base studies indicate that many of the landscape characteristics that contributed to the area's identification as a Special Landscape Area and Countryside Conservation Area remain evident today.
- 3.5.3 Although these designations no longer form part of the current planning framework, the studies that informed their designation provide evidence of the area's long-recognised landscape qualities. As such, they are a relevant consideration when understanding the evolution of landscape policy and the enduring characteristics that contribute to the area's value and sensitivity.
- 3.5.4 The continued relevance of these characteristics is reflected in more recent landscape character assessments, green infrastructure studies and local planning evidence, which continue to identify the Colne Valley as a distinctive and valued landscape within the wider Colchester area.

Areas of Landscape Conservation Importance, 2005

- 3.5.5 In Colchester Borough Council's Review of Countryside Conservation Areas (RCCA), 2005, the existing CCAs were reassessed using landscape character assessment methodology and proposed as Areas of Landscape Conservation Importance (ALCIs). The review drew upon the findings of the Colchester Borough Landscape Character Assessment (2005).
- 3.5.6 The RCCA concluded that the River Valley Landscape Type, including the Colne Valley landscapes, was of High Value and worthy of conservation. The report states that: *"The River Valley landscape type is also evaluated as high and considered to be worthy of conservation..."*. In support of this conclusion, the report noted that these landscapes exhibit strong surviving time-depth, a richness of natural and man-made landscape features, and provide important recreational corridors linking Colchester with the wider countryside.
- 3.5.7 The review further concluded that landscapes outside the Dedham Vale AONB (now National Landscape) assessed as being of *"highest"* or *"high"* value represented some of the most important landscapes within the Borough. These were identified as exhibiting strong visual and scenic qualities, significant nature conservation interest, tranquillity, cultural associations and distinctive landscape character.
- 3.5.8 As a consequence, the review recommended the designation of ALCIs as a replacement for the existing Countryside Conservation Areas. Figure 09 illustrates how the proposed ALCIs included a substantial area of the Colne Valley extending westwards from Colchester to the city boundary, together with land south of the Dedham Vale National Landscape. This demonstrates that recognition of landscape value extended across a broad area of the Colne Valley rather than being confined to isolated sites or features and provides further evidence of the longstanding recognition of the Colne Valley as a landscape of elevated value outside of the nationally designated landscape of the Dedham Vale.

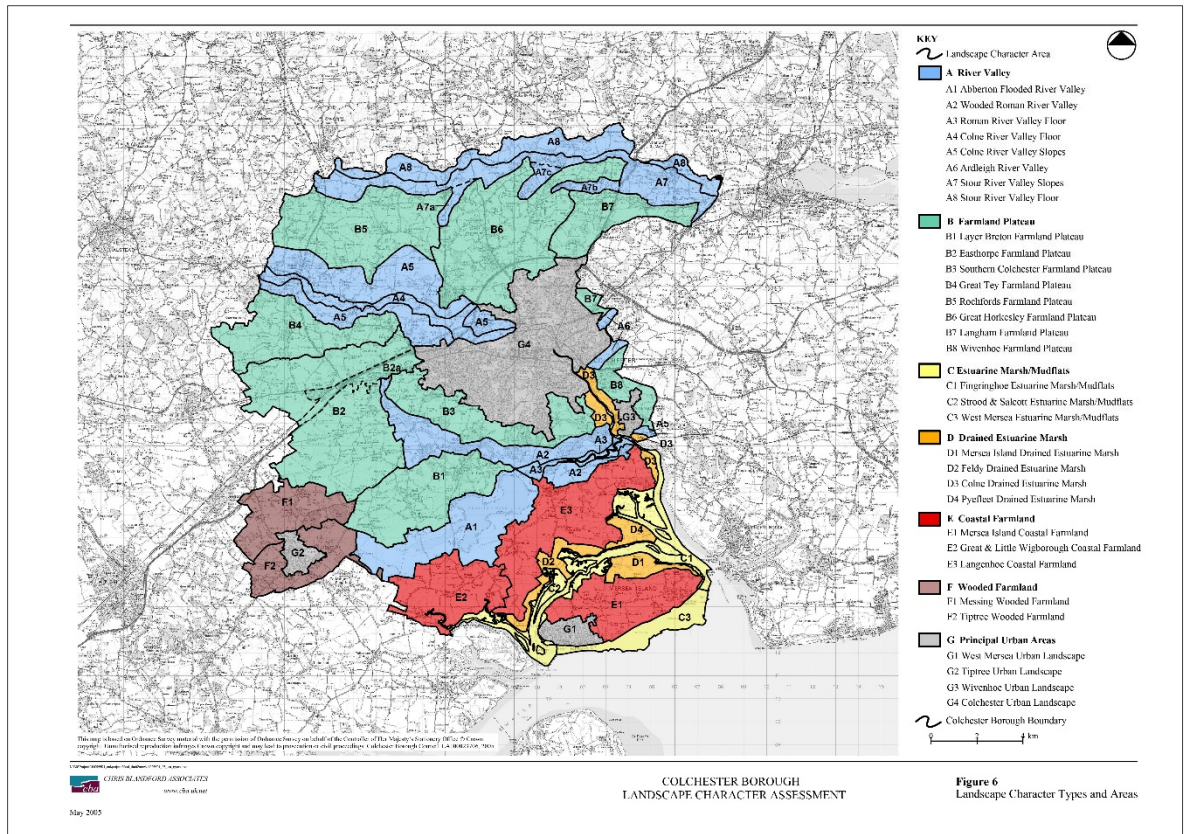


Figure 09: Extract from Colchester Borough Landscape Character Assessment, 2005

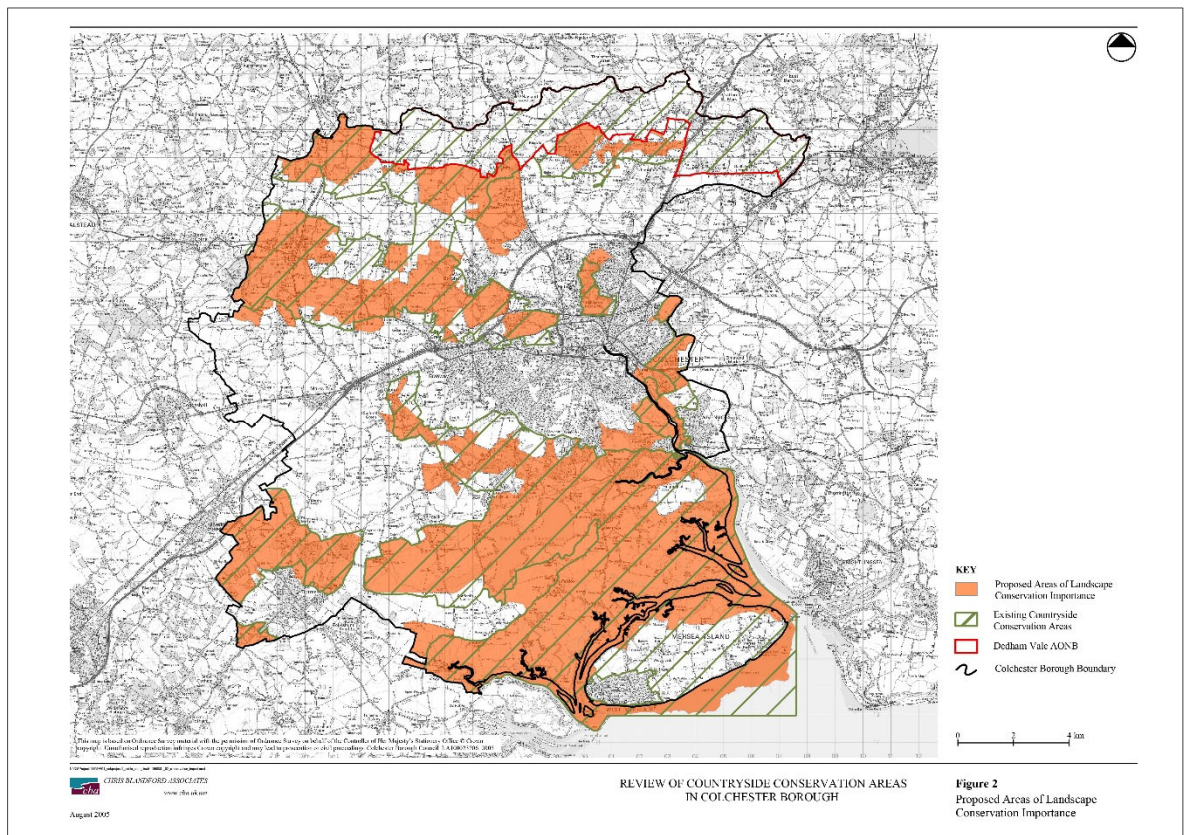


Figure 10: Proposed Areas of Landscape Conservation Importance (Extract from Review of Countryside Conservation Areas in Colchester Borough, 2005)

Neighbourhood Planning

3.5.9 Local recognition of landscape value has also been expressed through neighbourhood planning. A draft 2016 consultation version of the West Bergholt Neighbourhood Plan proposed an "Area of Special Landscape" covering countryside to the south-east and west of the village envelope. Although this designation did not form part of the final made Neighbourhood Plan (2019), its inclusion within the consultation draft provides evidence of local recognition of the landscape sensitivity, rural character and importance of the area.

3.6 Green Infrastructure

3.6.1 Successive Green Infrastructure studies have identified the Colne Valley as an important multifunctional landscape corridor providing ecological connectivity, recreation, landscape character and settlement separation functions.

Haven Gateway Green Infrastructure Strategy, 2008

3.6.2 The Haven Gateway Green Infrastructure Strategy (2008), prepared by The Landscape Partnership, recognised the Colne Valley and surrounding countryside as part of a multifunctional green infrastructure network providing landscape, ecological, recreational and settlement separation functions.

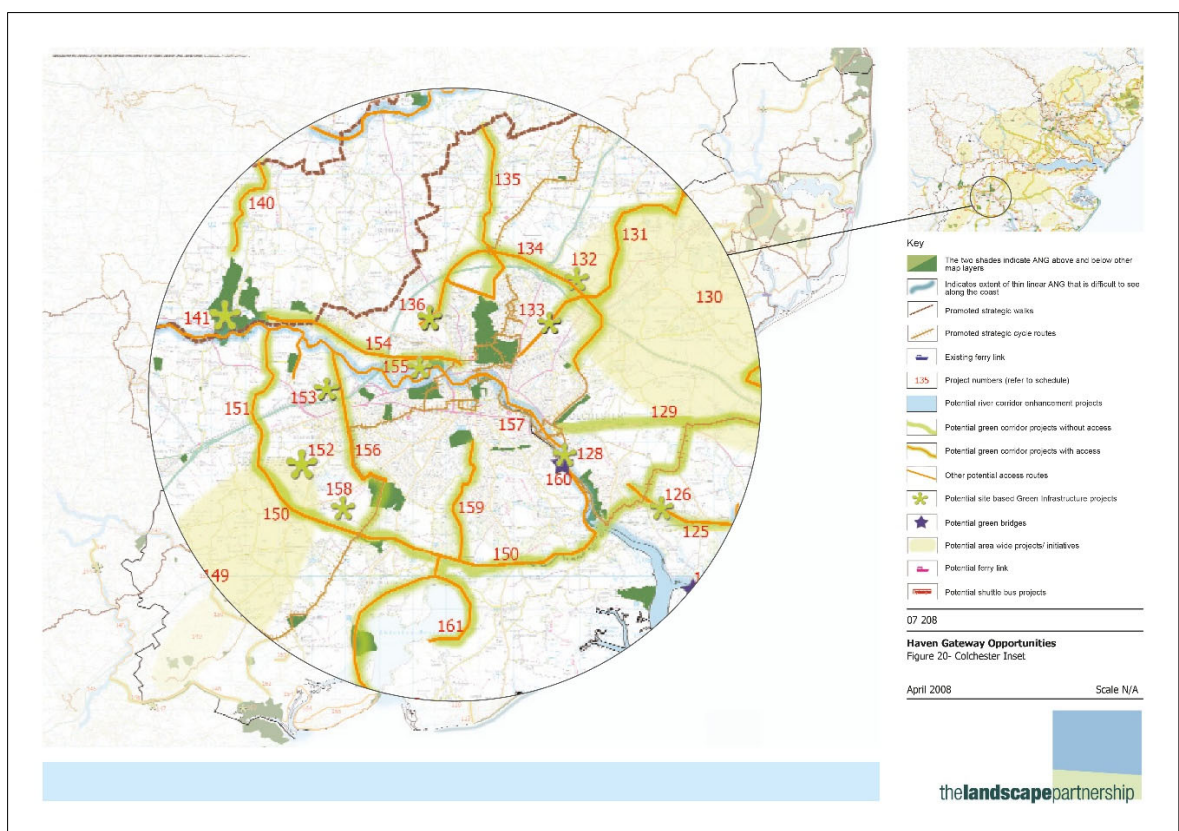


Figure 11; Haven Gateway Opportunities

3.6.3 The strategy specifically identified the Colne Valley and Roman River Valley as important landscape corridors. In describing these landscapes, the report notes: "The Colne Valley has extensive meadow

pasture and pre-C18th irregular fields, with the adjoining Roman River Valley extensive areas of ancient woodland and meadow pasture". The strategy also identified opportunities to strengthen recreational and ecological connectivity within the area, including the extension of Fordham Hall Community Woodland and the creation and enhancement of green corridors linking Colchester, West Bergholt, Fordham and the River Colne.

- 3.6.4 Collectively, these findings contribute to the continuing recognition of the Colne Valley as a strategically important landscape resource valued for its landscape character, ecological connectivity and recreational function.

Colchester Borough Green Infrastructure Strategy, 2011

- 3.6.5 Building upon the work of the Haven Gateway study, the Colchester Borough Green Infrastructure Strategy (2011) developed a more detailed borough-level framework for green infrastructure planning and delivery. The strategy further recognised the importance of the Colne Valley and surrounding countryside in contributing to ecological connectivity, recreation, landscape setting, environmental resilience and quality of life.

Essex Green Infrastructure Strategy, 2020

- 3.6.6 More recent green infrastructure planning has continued to recognise the importance of connected landscape networks and recreational corridors across Essex. The Essex Green Infrastructure Strategy (2020) identifies the protection, enhancement and creation of multifunctional green infrastructure as a key objective and specifically references the Essex Way, which passes through the Area of Interest.

Roman River Corridor

- 3.6.7 The role of the Roman River corridor as a strategic green infrastructure asset has been recognised through a number of local planning and masterplanning initiatives.
- 3.6.8 The Marks Tey Neighbourhood Plan Steering Group's Masterplanning Support report, prepared in 2017, identified the Roman River corridor and surrounding countryside to the north of Marks Tey as a key green infrastructure opportunity. The report proposed the creation of a continuous green corridor associated with the Roman River, linking existing landscape features, habitats and recreational routes whilst maintaining a visual and physical separation between Marks Tey and neighbouring settlements.
- 3.6.9 This concept was subsequently incorporated within the made Marks Tey Neighbourhood Plan (2020–2033), which supports the creation of a continuous accessible green corridor broadly following the Roman River corridor and surrounding countryside to encourage active lifestyles and improve access to the countryside. The Neighbourhood Plan also identifies the role of the corridor in providing a visual and physical separation between Marks Tey and Copford.

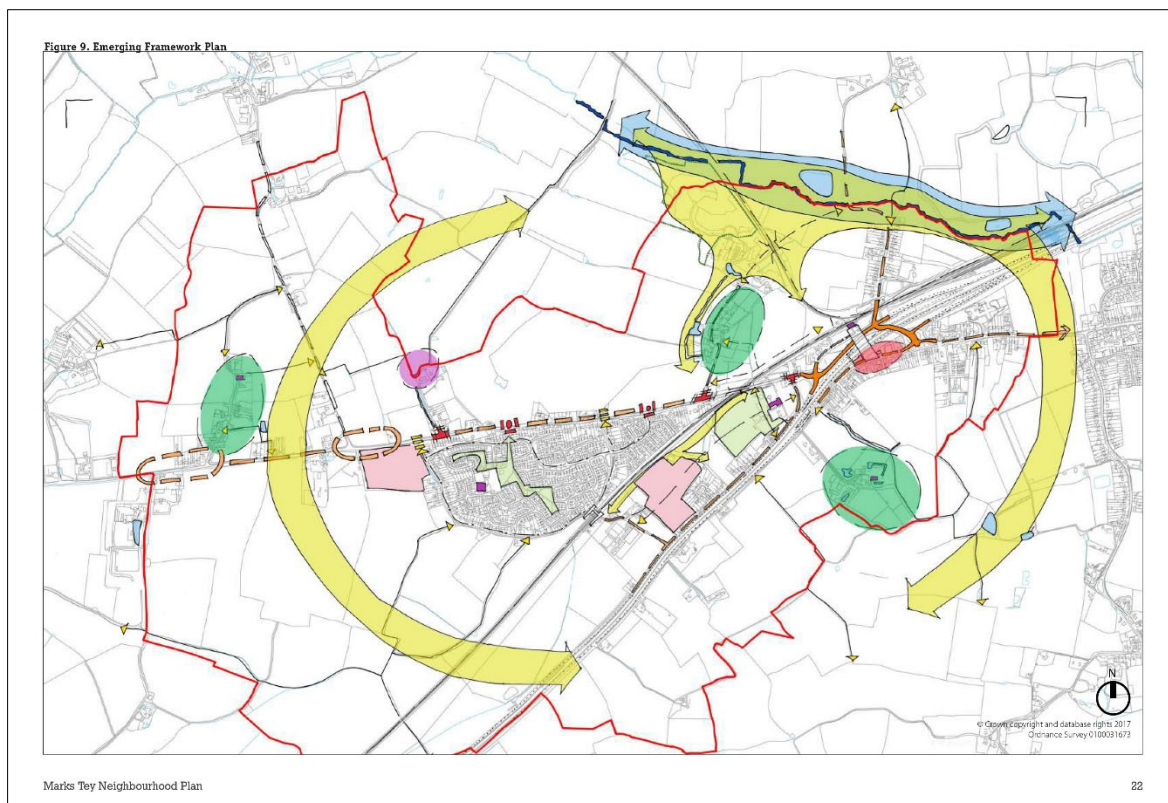


Figure 12; Concept plan (extract from Marks Tey Neighbourhood Plan, 2020–2033)

- 3.6.10 More recently, the emerging Colchester Local Plan (Preferred Options) identifies the Roman River Corridor as a Strategic Green Space and Nature Recovery Area under Policy GN2. The mapped corridor follows the Roman River west of Marks Tey and incorporates a range of interconnected natural assets including the Roman River, Church House Wood Ancient Woodland, Marks Tey Brickpit SSSI, Local Wildlife Sites and the Gainsborough Line corridor.
- 3.6.11 Policy GN2 notes that the purpose of the policy is “to support the delivery of the Essex LNRS and encourage delivery of the strategic opportunity areas”.
- 3.6.12 It continues: “The Roman River corridor nature recovery area is specifically referred to in the policy and shown on the policies map. This area is identified in the draft Essex LNRS as a strategic opportunity area for woodland, grassland, freshwater standing water and freshwater river buffers. A proposal for a multi-parish nature green space / local nature recovery corridor was submitted to the Council by Aldham, Great Tey and Marks Tey Parish Councils as part of the Green Network and Waterways engagement. The corridor includes mature hedgerows and trees, pastureland, floodplain, a reservoir and some arable land. Much of the Roman River is followed by a public right of way. Just to the north of the river is the 'Gainsborough Line', also a linear habitat, with trees the length of it. Marks Tey Brick Pit SSSI, local wildlife sites and ancient woodland are located within the proposed corridor. Marks Tey's Neighbourhood Plan includes a 'green corridor' which brings in the Roman River”.
- 3.6.13 The inclusion of the Roman River Corridor within Policy GN2 provides emerging policy recognition of a landscape that has previously been identified through local masterplanning and neighbourhood planning initiatives as an important green infrastructure, nature recovery and recreational

resource. The policy recognition of the corridor further reinforces its role in supporting ecological connectivity, access to the countryside and the wider green infrastructure network.

Summary

3.6.14 Successive green infrastructure strategies, neighbourhood planning initiatives and emerging local plan policy consistently recognise both the Colne Valley and Roman River Corridor as strategically important landscape resources. Together, these studies identify the area as a multifunctional green infrastructure network supporting ecological connectivity, nature recovery, recreation, landscape character and access to the countryside, thereby contributing to its overall landscape value.

3.7 Landscape Value

3.7.1 The N2T LVIA includes an assessment of landscape value for each of the Landscape Character Areas within the Area of Interest. The LVIA identifies Medium Value for the plateau landscapes (B2, B4, B5 and B6) and Medium-High Value for the Colne River Valley landscapes (A4 and A5).

3.7.2 Having regard to the landscape character assessments, environmental and heritage assets, historic recognition of landscape value and green infrastructure studies described above, The Landscape Partnership broadly agrees with the value judgements presented within the N2T LVIA.

3.7.3 Notwithstanding the above, this review has identified two LLCAs that differ materially from the wider plateau landscapes within which they occur. These areas exhibit a combination of landscape, ecological, historic and perceptual characteristics that are not fully reflected within the broader LCAs. A more detailed assessment of landscape value has therefore been undertaken in accordance with the principles set out in TGN 02-21: Assessing Landscape Value Outside National Designations (ALVOND).

3.7.4 The LLCAs comprise B5a – Grove Tributary Valley and B2/B4 – Western Roman River Corridor, both of which are described above. The landscape value assessments for these areas are set out in Tables 3.1 and 3.2 below.

Table 3.1; B5a – Grove Tributary Valley

Natural heritage	
Definition	Landscape with clear evidence of ecological, geological, geomorphological or physiographic interest which contribute positively to the landscape
Examples of indicators of landscape value	<ul style="list-style-type: none"> • Tributary shallow valley landform. • Watercourses, ponds and riparian vegetation. • Wetland and riparian habitats. • Enclosed valley character in the southern part. • Local ecological connectivity. • Seasonal variation and natural interest.
Examples of evidence	<ul style="list-style-type: none"> • OS map 1:25,000 Explorer • Magic Map • Colchester City Council Interactive Mapping Portal

Assessment	The B5a – Grove Tributary Valley exhibits a combination of ecological and physiographic features, including the tributary valley landform, watercourses, ponds and riparian habitats, which contribute positively to landscape value.
Value	Medium-high

Cultural heritage

Definition	Landscape with clear evidence of archaeological, historical or cultural interest which contribute positively to the landscape
Examples of indicators of landscape value	<ul style="list-style-type: none"> • Dispersed historic farmsteads, including The Grove and Highfield Farm. • Listed buildings, including The Grove, Highfield Farm and Spring Cottage. • Historic Environment Record (HER) assets, including evidence of Iron Age activity. • Protected lanes, including Crabtree Lane. • Listed buildings and historic farmsteads
Examples of evidence	<ul style="list-style-type: none"> • Historic England • Colchester Borough Protected Lanes Assessment, 2015 • HER and historic OS maps
Assessment	The B5a – Grove Tributary Valley contains a range of historic features, including listed buildings, historic farmsteads, HER assets and protected lanes. Together, these features provide evidence of long-established settlement and land use, contributing positively to landscape value in terms of cultural heritage.
Value	Medium-high

Landscape condition

Definition	Landscape which is in a good physical state both with regard to individual elements and overall landscape structure
Examples of indicators of landscape value	<ul style="list-style-type: none"> • Intact tributary valley landform. • Well-defined network of watercourses and ponds. • Established riparian vegetation. • The survival of protected lanes and dispersed farmsteads. • Largely rural landscape with limited urbanising influences or intrusive modern development.
Examples of evidence	<ul style="list-style-type: none"> • Google Earth • Colchester Landscape Character Assessment, 2024 • Colchester Borough Protected Lanes Assessment, 2015
Assessment	A review of available mapping and aerial photography indicates that the B5a – Grove Tributary Valley retains a coherent landscape structure, with its key characteristics remaining evident. The tributary valley landform, watercourses, ponds, riparian vegetation, protected lanes and dispersed farmsteads contribute to an intact rural landscape with limited urbanising influences.
Value	Medium-high

Distinctiveness	
Definition	Landscape that has a strong sense of identity
Examples of indicators of landscape value	<ul style="list-style-type: none"> • Network of watercourses, ponds and riparian vegetation. • Enclosed landscape structure. • Dispersed historic farmsteads and the protected lane Crabtree Lane. • Recognisable landscape pattern associated with the tributary valley. • Previously identified by Colchester Borough Council as a Countryside Conservation Area (CCA) and subsequently identified as an Area of Landscape Conservation Importance (ALCI).
Examples of evidence	<ul style="list-style-type: none"> • Colchester Landscape Character Assessment, 2024 • Colchester Borough Protected Lanes Assessment, 2015 • Review of Countryside Conservation Areas, 2005
Assessment	The B5a – Grove Tributary Valley exhibits a recognisable landscape pattern derived from the interaction of the tributary valley landform, watercourses, ponds, vegetation and historic settlement pattern. While much of the area is not readily experienced from publicly accessible viewpoints, these features combine to create a coherent and identifiable landscape unit with a distinct local character. This distinctiveness is reflected in the area's previous identification as a Countryside Conservation Area and subsequent identification as an Area of Landscape Conservation Importance.
Value	Medium-high
Recreational	
Definition	Landscape offering recreational opportunities where experience of landscape is important
Examples of indicators of landscape value	<ul style="list-style-type: none"> • Public Rights of Way in the north-western part of the area • Rural character and relative tranquillity.
Examples of evidence	<ul style="list-style-type: none"> • OS mapping • Magic Map
Assessment	Recreational opportunities are relatively limited by the extent of public access within the area. Nevertheless, publicly accessible routes, including Crabtree Lane, provide opportunities to experience the area's rural character and tributary valley setting. The area's location within the wider rural setting of the Dedham Vale National Landscape further contributes to its recreational context.
Value	Low-medium
Perceptual (Scenic)	
Definition	Landscape that appeals to the senses, primarily the visual sense
Examples of indicators of landscape value	<ul style="list-style-type: none"> • Long-distance views across and along the valley landscape. • Appreciation of the tributary valley landform and its relationship with the wider landscape.

	<ul style="list-style-type: none"> • Watercourses, ponds and associated vegetation. • Enclosed and intimate landscape character in parts of the valley. • Largely rural character with limited urbanising influences.
Examples of evidence	<ul style="list-style-type: none"> • Google Earth • National Grids LVIA photography
Assessment	The B5a – Grove Tributary Valley exhibits scenic qualities associated with its tributary valley landform, watercourses, ponds and vegetation structure. Opportunities for views across and along the valley, together with the varied landform, enclosed character and largely rural setting, contribute to a visually coherent landscape with a recognisable sense of place.
Value	Medium

Perceptual (tranquillity)

Definition	Landscape with a strong perceptual value notably wildness, tranquillity and/or dark skies
Examples of indicators of landscape value	<ul style="list-style-type: none"> • Shallow tributary valley character • Predominantly rural character • Limited urbanising influences and modern development. • Relatively dark rural skies and limited artificial lighting. • Presence of watercourses, ponds and associated vegetation.
Examples of evidence	<ul style="list-style-type: none"> • Google Earth • CPRE, the Countryside Charity
Assessment	The B5a – Grove Tributary Valley exhibits a degree of tranquillity arising from its predominantly rural character, shallow valley landform, watercourses, ponds and associated vegetation. Limited urbanising influences and relatively dark rural skies contribute to a calm and largely undisturbed landscape experience.
Value	Medium

Functional

Definition	Landscape which performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape
Examples of indicators of landscape value	<ul style="list-style-type: none"> • Tributary valley landform and associated drainage corridor. • Network of watercourses and ponds. • Riparian vegetation and associated habitats. • Contribution to habitat connectivity and ecological networks. • Role as a locally distinct landscape corridor within the wider plateau landscape. • Contribution to landscape structure and landscape diversity.
Examples of evidence	<ul style="list-style-type: none"> • OS mapping • Magic Map

Assessment	The B5a – Grove Tributary Valley performs an important functional role through its tributary valley landform, watercourses, ponds and associated habitats. Together, these features contribute to local drainage, ecological connectivity and landscape structure, supporting the healthy functioning of the wider landscape.
Value	Medium-high

3.7.5 On balance, the B5a – Grove Tributary Valley is considered to be of **Medium-high landscape value** overall.

Table 3.2; B2/B4 – Roman River Corridor

Natural heritage	
Definition	Landscape with clear evidence of ecological, geological, geomorphological or physiographic interest which contribute positively to the landscape
Examples of indicators of landscape value	<ul style="list-style-type: none"> • Roman River and associated riparian vegetation. • Church House Wood Ancient Woodland and Local Wildlife Site. • Marks Tey Brickpit SSSI, Local Wildlife Site and Geological Conservation Review (GCR) site. • Ecological connectivity provided by the river corridor and associated habitats. • Combination of ecological, geological and physiographic interest.
Examples of evidence	<ul style="list-style-type: none"> • OS map 1:25,000 Explorer • Magic Map • Colchester City Council Interactive Mapping Portal
Assessment	The Roman River Corridor contains a range of ecological, geological and physiographic features that contribute positively to landscape value. The Roman River, Church House Wood Ancient Woodland, Marks Tey Brickpit SSSI, Local Wildlife Site and Geological Conservation Review site combine to create a landscape of notable natural heritage interest.
Value	Medium-high

Cultural heritage	
Definition	Landscape with clear evidence of archaeological, historical or cultural interest which contribute positively to the landscape
Examples of indicators of landscape value	<ul style="list-style-type: none"> • Numerous Historic Environment Record (HER) assets including Archaeological associations linked to Iron Age and Roman activity. • Historic field pattern continuity. • Former medieval church site at Rectory Road (Aldham Church was ‘moved’ about 1.2km from what is now Church House Farm to its present site in Aldham in 1854/55). • Historic place names including Church House Farm and Old Rectory. • Church House Wood Ancient Woodland.

	<ul style="list-style-type: none"> • Historic Gainsborough Line railway corridor. • Strong sense of time-depth and historic continuity.
Examples of evidence	<ul style="list-style-type: none"> • Historic England • Colchester Borough Protected Lanes Assessment, 2015 • HER and historic OS maps
Assessment	The Roman River Corridor contains a range of archaeological, historic and cultural features which contribute positively to landscape value. Historic field pattern continuity, long-established woodland cover, archaeological interest and ecclesiastical associations combine to create a strong sense of time-depth and historic continuity.
Value	High

Landscape condition

Definition	Landscape which is in a good physical state both with regard to individual elements and overall landscape structure
Examples of indicators of landscape value	<ul style="list-style-type: none"> • Intact Roman River corridor and associated riparian vegetation. • Church House Wood Ancient Woodland. • High degree of historic field pattern continuity. • Limited evidence of substantial field boundary loss or reorganisation. • Persistence of long-established landscape structure. • Survival of historic landscape features and place associations. • Strong relationship between the river corridor, woodland and surrounding field pattern.
Examples of evidence	<ul style="list-style-type: none"> • Google Earth • Colchester Landscape Character Assessment, 2024
Assessment	The Roman River Corridor retains a coherent and well-preserved landscape structure, with the Roman River, Church House Wood, historic field pattern and associated landscape features remaining intact and readily discernible. Field observations and historic mapping indicate a high degree of continuity and limited evidence of substantial landscape restructuring or fragmentation.
Value	High

Distinctiveness

Definition	Landscape that has a strong sense of identity
Examples of indicators of landscape value	<ul style="list-style-type: none"> • Roman River corridor and associated riparian landscape. • Church House Wood Ancient Woodland. • Marks Tey Brickpit SSSI, Local Wildlife site and Geological Conservation Review (GCR) site. • Historic field pattern continuity. • Strong sense of time-depth and historic continuity. • Archaeological associations linked to Iron Age and Roman activity. • Former medieval church site and associated historic place names.

	<ul style="list-style-type: none"> • Distinct combination of ecological, geological, archaeological and historic features.
Examples of evidence	<ul style="list-style-type: none"> • Historic England • Colchester Landscape Character Assessment, 2024
Assessment	The Roman River Corridor exhibits a strong sense of identity derived from the combination of the Roman River, Church House Wood Ancient Woodland, Marks Tey Brickpit SSSI and GCR site, historic field pattern continuity and archaeological interest. Together, these features create a distinctive landscape with a strong sense of time-depth and historic continuity.
Value	Medium-high

Recreational	
Definition	Landscape offering recreational opportunities where experience of landscape is important
Examples of indicators of landscape value	<ul style="list-style-type: none"> • Public Rights of Way providing access through and across the corridor. • Opportunities to experience the Roman River landscape and associated natural features. • Varied landscape interest arising from the combination of river, woodland and historic landscape features. • Gainsborough Line railway, promoted as a scenic and leisure route. • Connection to recreational destinations including Chappel, Sudbury and the Stour Valley countryside. • Rural character and relative tranquillity.
Examples of evidence	<ul style="list-style-type: none"> • OS mapping • Magic Map
Assessment	The Roman River Corridor provides opportunities for informal recreation and appreciation of the countryside through its network of Public Rights of Way, varied landscape character and rural setting. The Gainsborough Line, promoted as a scenic and leisure route, further enhances recreational opportunities and accessibility to the wider countryside, including the Stour Valley landscape.
Value	Medium-high

Perceptual (Scenic)	
Definition	Landscape that appeals to the senses, primarily the visual sense
Examples of indicators of landscape value	<ul style="list-style-type: none"> • Roman River and associated riparian vegetation. • Church House Wood Ancient Woodland. • Pastoral land use associated with the river corridor. • Historic field pattern and mature landscape structure. • Varied landscape interest arising from the combination of river, woodland and farmland. • Strong sense of time-depth and historic continuity. • Rural character with limited urbanising influences.

	<ul style="list-style-type: none"> Views from Public Rights of Way and the Gainsborough Line scenic railway. Seasonal variation associated with woodland, vegetation and water features.
Examples of evidence	<ul style="list-style-type: none"> Google Earth
Assessment	The Roman River Corridor exhibits scenic qualities derived from the combination of the Roman River, Church House Wood, pastoral land use, mature landscape structure and historic field pattern. The interaction of woodland, water, farmland and historic landscape features creates a visually varied and distinctive landscape with a strong sense of place. Views from Public Rights of Way and the Gainsborough Line further contribute to appreciation of the landscape.
Value	Medium-high

Perceptual (tranquillity)	
Definition	Landscape with a strong perceptual value notably wildness, tranquillity and/or dark skies
Examples of indicators of landscape value	<ul style="list-style-type: none"> Roman River and associated riparian vegetation. Church House Wood Ancient Woodland. Predominantly rural character. Relatively dark rural skies and limited artificial lighting. Strong sense of separation from surrounding development. Limited urbanising influences. Naturalistic character associated with woodland, water and pasture. Narrow rural lane (Rectory Road) which reinforce the area's rural character and sense of separation
Examples of evidence	<ul style="list-style-type: none"> Google earth Magic Map CPRE, the Countryside Charity
Assessment	The Roman River Corridor exhibits a strong sense of tranquillity associated with its rural character, pastoral land use, Church House Wood, the Roman River and associated riparian habitats. Together, these features create a calm and naturalistic landscape with limited urbanising influences and a strong sense of separation from surrounding development.
Value	High

Functional	
Definition	Landscape which performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape
Examples of indicators of landscape value	<ul style="list-style-type: none"> Roman River corridor and associated drainage function. Network of riparian habitats associated with the river corridor. Contribution to habitat connectivity and ecological networks. Role as a green corridor linking woodland, river and farmland habitats.

	<ul style="list-style-type: none"> • Contribution to landscape structure and landscape diversity. • Long-established landscape framework associated with the river corridor. • Recognition as a strategic green infrastructure and nature recovery corridor.
Examples of evidence	<ul style="list-style-type: none"> • OS mapping • Magic Map
Assessment	The Roman River Corridor performs a number of important landscape functions associated with the Roman River and its network of riparian habitats. The corridor contributes to ecological connectivity, hydrological processes and landscape structure, linking woodland, river and farmland habitats and supporting the healthy functioning of the wider landscape. Its role as a strategic green infrastructure corridor is further recognised through neighbourhood planning, masterplanning and emerging local plan policy, which identify the area as part of a wider green infrastructure and nature recovery network.
Value	Medium-high

3.7.6 On balance, the B2/B4 – Roman River corridor is considered to be of **Medium-high landscape value** overall.

3.8 Susceptibility to change

3.8.1 The N2T LVIA includes an assessment of each of the published LCAs within the Area of Interest susceptibility to change. Landscape susceptibility reflects the ability of a landscape to accommodate the specific type of development proposed without undue consequences for its key characteristics.

3.8.2 The Landscape Partnership broadly agrees with the susceptibility judgements presented for the LCAs; however, this review has identified two localised landscape character areas which are considered to exhibit characteristics that differ materially from the wider plateau landscapes within which they occur. As a result, a separate high-level appraisal of landscape susceptibility has been undertaken to reflect their specific sensitivities to the proposed development.

3.8.3 The two areas are B5a – Grove Tributary Valley and B2/B4 – Roman River Corridor, both described in Section 3.1.

3.8.4 In carrying out these assessments, consideration was also given to the findings of the previously prepared High Level Landscape Susceptibility Appraisal 2024.

B5a - Grove Tributary Valley

3.8.5 Key Susceptibility Factors:

- Tributary valley landform and associated watercourses.
- Network of ponds, watercourses and riparian vegetation.
- Coherent landscape structure associated with the tributary valley.
- Dispersed historic farmsteads and historic settlement pattern.

- Protected lanes, including Crabtree Lane.
- Predominantly rural character and limited urbanising influences.
- Relatively dark rural skies and a degree of tranquillity.
- Limited ability to accommodate large-scale vertical infrastructure without affecting key landscape characteristics.

3.8.6 The B5a: Grove Tributary Valley exhibits a number of characteristics that are susceptible to the introduction of large-scale overhead line infrastructure, including its tributary valley landform, coherent landscape structure, historic settlement pattern and rural character. Other susceptibilities include opportunities for views of the new elements. The presence of watercourses, ponds, riparian vegetation and protected lanes further contributes to the area's susceptibility to change. Together, these characteristics provide a relatively limited capacity to accommodate large-scale vertical infrastructure without affecting the landscape's key characteristics and rural qualities. Consequently, the landscape is considered to have a **High susceptibility** to development of the type proposed.

B2/B4 - Roman River Corridor

3.8.7 Key susceptibility factors:

- Roman River corridor and associated riparian landscape.
- Church House Wood Ancient Woodland and Local Wildlife Site.
- Marks Tey Brickpit SSSI and Geological Conservation Review (GCR) site.
- Strong sense of time-depth and historic continuity.
- High degree of historic field pattern continuity.
- Distinctive combination of ecological, geological, archaeological and historic features.
- Tranquil rural character and relatively dark rural skies.
- Limited ability to accommodate large-scale vertical infrastructure without affecting key landscape characteristics.

3.8.8 The B2/B4: Roman River Corridor exhibits a number of characteristics that are susceptible to the introduction of large-scale overhead line infrastructure, including its intact landscape structure, strong historic character, tranquil rural setting and concentration of ecological and geological interests. Other susceptibilities include visual exposure associated with the valley landscape. The presence of Church House Wood Ancient Woodland, Marks Tey Brickpit SSSI and the Geological Conservation Review site further contributes to the susceptibility of the corridor to changes that could affect its distinctive character and landscape setting. Consequently, the landscape is considered to have a **High susceptibility** to the development of the type proposed.

3.9 Sensitivity

- 3.9.1 Landscape sensitivity reflects the relationship between landscape value and landscape susceptibility. Landscapes of higher value and/or higher susceptibility are generally considered to be more sensitive to the type of development proposed.
- 3.9.2 The Landscape Partnership broadly agrees with the landscape sensitivity judgements presented within the N2T LVIA for the published LCAs.
- 3.9.3 The findings of the N2T LVIA regarding the sensitivity of each of the LCAs within the Area of Interest, supplemented with the two additional LLCAs, are summarised in the following table,

Table 3.1: Sensitivity judgements

Landscape Character Area	Value	Susceptibility	Sensitivity
A4 – Colne River Valley Floor	Medium-High	High	High
A5 – Colne River Valley Slopes	Medium-High	High	High
B2 – Easthorpe Farmland Plateau	Medium	Medium	Medium
B4 – Great Tey Farmland Plateau	Medium	Medium	Medium
B5 – Rochford’s Farmland Plateau	Medium	Medium	Medium
B6 – Great Horkesley Farmland Plateau	Medium	Medium	Medium
B5a – Grove Tributary Valley	Medium-high	High	High
B2/B4 - Roman River Corridor	Medium-High	High	High

- 3.9.4 Both B5a -Grove Tributary Valley and B2/B4 – Roman River Corridor are considered to have High landscape sensitivity. The combination of Medium-High landscape value and High susceptibility reflects the presence of important ecological, geological, historic and perceptual characteristics together with a limited ability to accommodate large-scale overhead line infrastructure without affecting the qualities that define the landscape corridor.
- 3.9.5 Figure 12 illustrates the distribution of landscape sensitivity across the Area of Interest, including the refined LLCAs identified through this review.

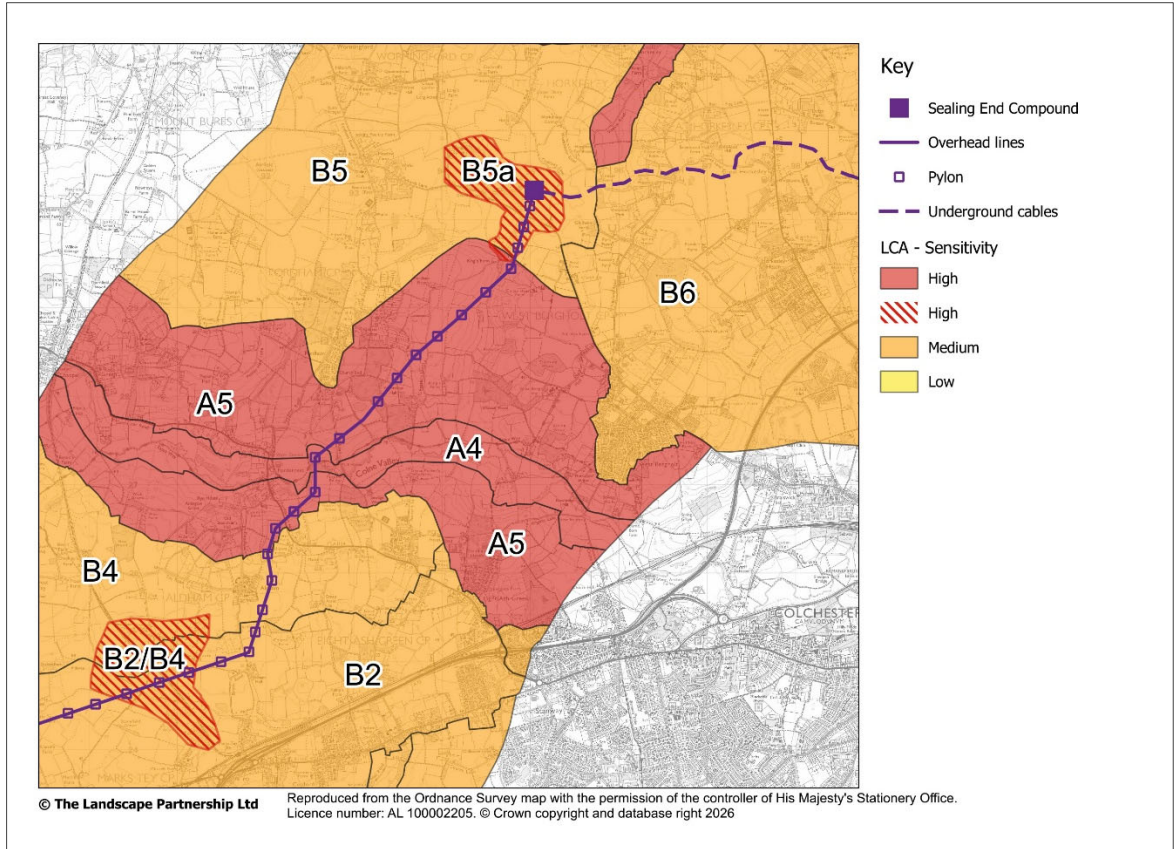


Figure 13: Landscape sensitivity

4 Landscape effects

4.1 High-level review of landscape effects – N2T LVIA

- 4.1.1 The reviewed N2T LVIA identifies the greatest landscape effects within the more visually sensitive valley landscapes associated with the Colne River corridor, namely LCA A4: Colne River Valley Floor and A5: Colne River Valley Slopes. Within these LCAs, the introduction of large-scale overhead line infrastructure and pylons is assessed as resulting in **Major Significant effects** within 0.5km of the infrastructure, reducing to **Moderate Significant effects** between 0.5km and 1.5km.
- 4.1.2 Within the plateau landscapes, including LCA B5: Rochford’s Farmland Plateau, B6: Great Horkesley Farmland Plateau, B4: Great Tey Farmland Plateau and B2: Easthorpe Farmland Plateau, the N2T LVIA identifies **Moderate-Major Significant effects** within 0.5km of pylons and overhead line infrastructure, reducing to **Moderate Significant effects** between 0.5km and 1.5km. An exception to this is B6 – Great Horkesley Farmland Plateau, where effects are identified as reducing below the threshold of Significant at distance beyond 0.5km of the proposed infrastructure.
- 4.1.3 The Landscape Partnership broadly agrees with these conclusions.
- 4.1.4 As set out at Chapter 3, this review identified two LLCAs that exhibit characteristics that differ materially from the wider plateau landscapes within which they occur. The following table provides a high-level indicative professional judgement of the potential effects for these two LLCAs.

Table 4.1: Levels of effect – LLCA

Landscape Character Area	Level of effect / Year 15 within 0.5km	Level of effect / Year 15 between 0.5km and 1.5km
B5a – Grove Tributary Valley	Major Significant	Moderate Significant
B2/B4 - Roman River Corridor	Major Significant	Moderate Significant

- 4.1.5 The findings indicate that both B5a – Grove Tributary Valley and B2/B4 – Roman River Corridor exhibit a level of sensitivity and subsequent likely Level of effect that is greater than identified for the wider plateau landscapes within which they occur. This reflects the combination of landscape, time-depth and cultural characteristics present within these LLCAs.

4.2 Schedule of findings

The following schedule summarises the findings of the N2T LVIA in relation to the Area of Interest, supplemented with those for the refined LLCAs. The schedule presents the assessed Value, Susceptibility, Sensitivity and anticipated Level of effect within 0.5km and between 0.5km and 1.5km of the proposed overhead line infrastructure.

Table 4.2: Summary of landscape effects – LCAs within N2T LVIA

Landscape Character Area	Value	Susceptibility	Sensitivity	Level of effect / Year 15 within 0.5km	Level of effect / Year 15 between 0.5km and 1.5km
B5 - Rochford's Farmland Plateau	Medium	Medium	Medium	Moderate-Major Significant*	Moderate Significant
B6 - Great Horkesley Farmland Plateau	Medium	Medium	Medium	Moderate-Major Significant	Not Significant
A5 - Colne River Valley Slopes	Medium-High	High	High	Major Significant	Moderate Significant
A4 - Colne River Valley Floor	Medium-High	High	High	Major Significant	Moderate Significant
B4 - Great Tey Farmland Plateau	Medium	Medium	Medium	Moderate-Major Significant	Moderate Significant
B2 - Easthorpe Farmland Plateau	Medium	Medium	Medium	Moderate-Major Significant	Moderate Significant

* Within the area identified as B5a – Grove Tributary Valley, a separate high-level appraisal has been undertaken reflecting the elevated landscape value, susceptibility and sensitivity identified in Chapter 4.

Table 4.3: Summary of landscape effects – LLCA

Landscape Character Area	Value	Susceptibility	Sensitivity	Indicative Level of effect / Year 15 within 0.5km	Indicative Level of effect / Year 15 between 0.5km and 1.5km
B5a – Grove Tributary Valley	Medium-High	High	High	Major Significant	Moderate Significant
B2/B4 - Roman River Corridor	Medium-High	High	High	Major Significant	Moderate Significant

4.2.1 Tables 4.2 and 4.3 demonstrate that the LCAs within the Area of Interest along the proposed pylon corridor all are assessed as experiencing **Moderate-Major effects** or **Major effects** within 0.5km of the proposed infrastructure and that all these effects would be Significant. Effects between 0.5km and 1.5km are all judged to reduce to **Moderate effects and to be Significant**, with the exception

of B6: Great Horkesley Farmland Plateau, where effects are identified as reducing below the threshold of Significant due to the proposed undergrounding in this area.

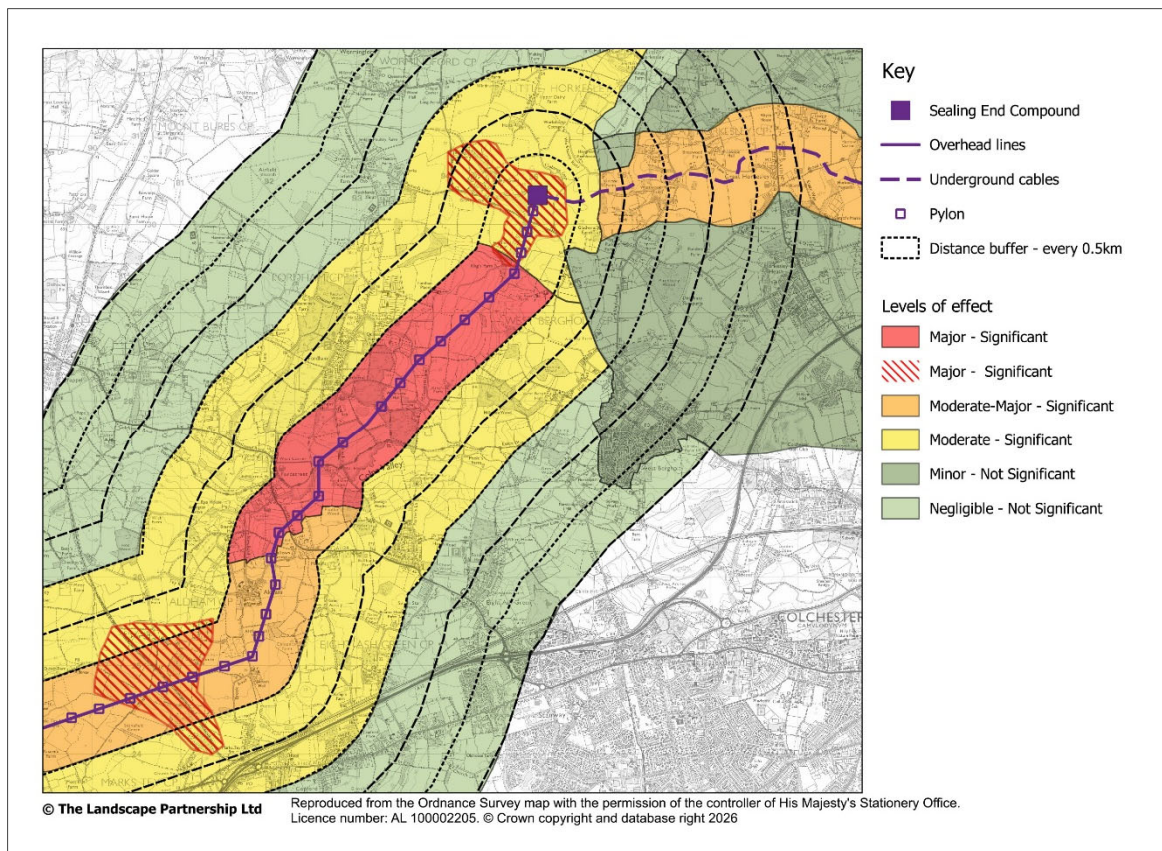


Figure 14: Level of effects

4.3 Additional landscape effects associated with vegetation loss

- 4.3.1 The landscape effects associated with the Development Proposal do not only arise from the introduction of pylons and overhead conductors, but also from the removal and management of vegetation required to facilitate construction and operation of the transmission corridor.
- 4.3.2 Trees, woodland, hedgerows and riparian vegetation form an important component of the landscape structure of the Area of Interest. These features contribute to enclosure, local distinctiveness, ecological connectivity and the perception of rural character. They are particularly evident within the Colne Valley, the Grove Tributary Valley and the Roman River Corridor, where vegetation is closely integrated with landform and settlement pattern.
- 4.3.3 The loss or alteration of vegetation therefore has the potential to contribute to landscape effects beyond the immediate footprint of the infrastructure itself. Whilst replacement planting may mitigate some effects over time, the removal of mature landscape features can result in a reduction in landscape structure and local distinctiveness for an extended period.

4.4 Summary

- 4.4.1 The review undertaken as part of this assessment demonstrates that the extent of sensitive landscape receptors affected by the proposed overhead line infrastructure may be greater than is

reflected within the broad Landscape Character Areas used within the N2T LVIA. The identification of the B5a – Grove Tributary Valley and B2/B4 – Roman River Corridor localised landscape character areas identify additional areas of elevated landscape sensitivity.

- 4.4.2 When considered alongside the Major Significant effects identified within the adjoining A4 – Colne River Valley Floor and A5 – Colne River Valley Slopes landscape character areas, the findings indicate a concentration of Significant landscape effects across a series of connected and sensitive landscapes.

5 Visual context

5.1 Visual Receptors and Sensitivity

- 5.1.1 The N2T LVIA includes 22 viewpoints within the Area of Interest, representing a range of visual receptors including road users and recreational users. The Area of Interest contains an extensive network of footpaths, bridleways and Protected Lanes which provide views across the Colne Valley, adjoining plateau landscapes and the Roman River Corridor. As many of these routes are valued for their rural character, tranquillity and recreational function, users are likely to exhibit a high degree of awareness of changes to the surrounding landscape.
- 5.1.2 In addition to the viewpoints assessed within the N2T LVIA, The Landscape Partnership has identified a number of further viewpoints located along the Public Rights of Way network within the Area of Interest. Whilst not being exhaustive of all potential viewpoints, together, these viewpoints are considered to be representative of receptors likely to experience notable changes in visual amenity arising from the proposed development and are shown on Figure 14 below supported by panorama photos in Appendix 01.
- 5.1.3 The additional viewpoints include the following:
- Viewpoint A: Fossetts Lane / PRow Fordham-16
 - Viewpoint B: Bridleway 20 / PRow Aldham-18
 - Viewpoint C: PRow Aldham-7
 - Viewpoint D: PRow Aldham-3

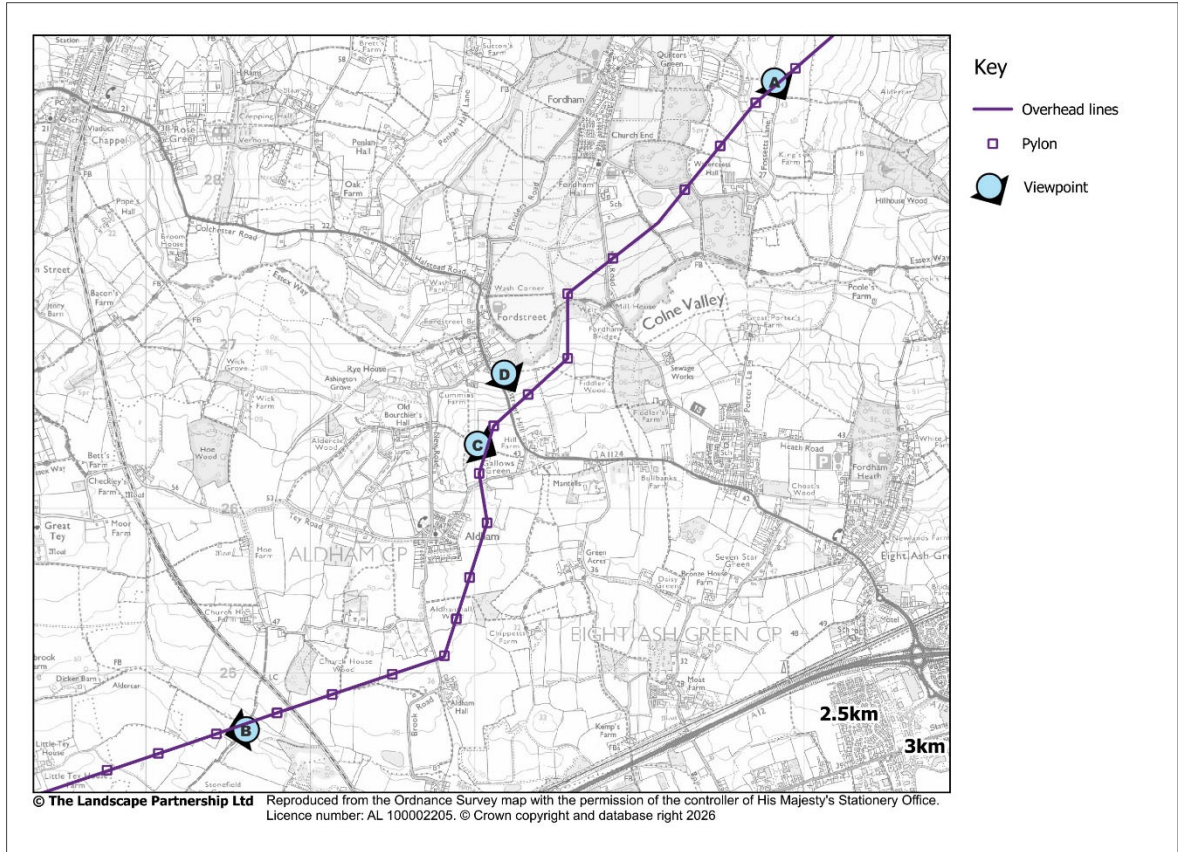


Figure 15: Additional viewpoints

5.2 Sensitivity

- 5.2.1 Visual sensitivity reflects the relationship between the value place on a view by a visual receptor (person) and the susceptibility of the view change of the type proposed. Receptors of higher value and/or higher susceptibility are generally considered to be more sensitive to the effects of development.
- 5.2.2 A review of the N2T LVIA indicates that all the visual receptors within the Area of Interest are assessed as being of **Medium** or **High sensitivity**. The Landscape Partnership broadly agrees with these sensitivity judgements.
- 5.2.3 For the purposes of this review, a separate high-level assessment of visual sensitivity has been undertaken for the additional viewpoints. As noted above, these additional viewpoints are located on Public Rights of Way and Protected Lanes not specifically represented by the N2T LVIA viewpoints and are considered representative of recreational receptors likely to experience close-range views of the proposed infrastructure. The findings are provided in the table below.

Table 5.1: Visual receptor sensitivities - LLCA

Viewpoint	Value	Susceptibility	Sensitivity
Viewpoint A	High	High	High
Viewpoint B	Medium	High	High
Viewpoint C	Medium	High	High
Viewpoint D	Medium	High	High

6 Visual effects

6.1 High-level review of visual effects – N2T LVIA

- 6.1.1 Of the 22 viewpoints located within the Area of Interest, the N2T LVIA identifies Significant residual visual effects at 16 of the viewpoints at year 15. The Significant effects range from Moderate to Major Adverse and are generally associated with viewpoints located within 1.5km of the proposed overhead line.
- 6.1.2 The six viewpoints assessed as not being Significant are either located at greater distances from the proposed development (VPs 4.07, 4.10, 4.13, 4.28, 4.35 and 4.38) or benefit from substantial screening by intervening vegetation, built form and/or landform (VPs 4.33, 4.28 and 4.35). The findings indicate that Significant visual effects may occur across a substantial proportion of the Area of Interest and are not confined to a small number of isolated viewpoints.
- 6.1.3 The Landscape Partnership broadly agrees with the visual assessment conclusions presented within the N2T LVIA. However, in a limited number of cases, The Landscape Partnership considers that the magnitude of visual effects may be greater than those identified within the N2T LVIA. These differences are generally limited in extent and may reflect differences in professional judgement rather than fundamental disagreement regarding the nature of the effects.

6.2 Additional viewpoints – potential visual effects

- 6.2.1 The additional viewpoints identified through this appraisal are listed below with a high-level indicative professional judgement of potential visual effects, with accompanying panoramic photographs to illustrate the composition of the view attached at Appendix 02.

Table 6.1: Summary of visual effects - LLCA

<p>Viewpoint A: Fossetts Lane / PRoW Fordham-16</p> <p>High-level assessment of effects:</p> <p>Viewpoint A is located on Fossett Lane, a Protected Lane, at the point where the proposed overhead line would cross the route. Users travelling from Fordham via PRoW Fordham-16, along Fossett Lane and onwards via PRoW Fordham-19 towards West Bergholt (or reverse) would pass directly beneath the proposed conductors. The overhead line has the potential, therefore, to form a prominent and defining feature of the route, introducing large-scale transmission infrastructure into an otherwise rural valley landscape. The presence of the conductors would likely result in a substantial change to the visual experience of the route and noticeably diminish the sense of tranquillity and rural character associated with the Protected Lane and surrounding valley landscape.</p> <p>Effect: Major adverse Significant</p>
<p>Viewpoint B: Bridleway 20 / PRoW Aldham-18</p> <p>High-level assessment of effects:</p> <p>Viewpoint B is located at the intersection of Bridleway 20 and PRoW Aldham-18 within the Roman River Valley. A proposed pylon tower would be located within the adjoining arable field, with the overhead line extending across the landscape beyond. The tower has the potential to form a prominent focal point</p>

<p>within views from the public rights of way, introducing a substantial vertical structure into an otherwise predominantly rural landscape. Together with the associated conductors, the infrastructure would likely become a defining element of the view, substantially altering the visual experience of the route and adversely affecting the rural character of the Roman River Valley.</p> <p>Effect: Major adverse Significant</p>
<p>Viewpoint C: PRow Aldham-7</p> <p>High-level assessment of effects:</p> <p>Viewpoint C is located on PRow Aldham-7 looking east towards Gallows Green. The proposed overhead line would span the view from north to south, crossing the public right of way. Users of the route would pass directly beneath the conductors, experiencing the infrastructure at close range. The overhead line has the potential to be a defining feature within views across the surrounding countryside, diminishing the sense of openness and rural character currently associated with the route towards Gallows Green (or reverse).</p> <p>Effect: Major adverse Significant</p>
<p>Viewpoint D: PRow Aldham-3</p> <p>High-level assessment of effects:</p> <p>Viewpoint D is located on PRow Aldham-3 between Fordstreet and Fiddlers Wood. The proposed overhead line would cross the public right of way and be visible across a substantial section of the route. Users would approach and pass directly beneath the conductors, experiencing the infrastructure at close range within an otherwise open rural landscape. The overhead line has the potential to be a prominent feature within views and would likely interrupt long-distance views across the surrounding countryside, noticeably altering the visual experience of the route.</p> <p>Effect: Major adverse Significant</p>

- 6.2.2 On the basis of this high-level review, the additional viewpoints are considered to have the potential to experience Significant adverse visual effects arising from the proposed development. This is consistent with the findings of the N2T LVIA, which identifies Significant visual effects across a substantial proportion of the Area of Interest.
- 6.2.3 Figure 15 illustrates the distribution of visual effects identified within the N2T LVIA across the Area of Interest, together with the high-level indications of visual effect for the additional viewpoints identified through this appraisal.
- 6.2.4 The findings indicate that opportunities for close-range views of the proposed infrastructure are not limited to the representative viewpoints assessed within the N2T LVIA. Additional Public Rights of Way and Protected Lanes within the Area of Interest are also likely to experience notable changes in visual amenity, reinforcing the extent of visual effects identified across the Colne Valley landscape.

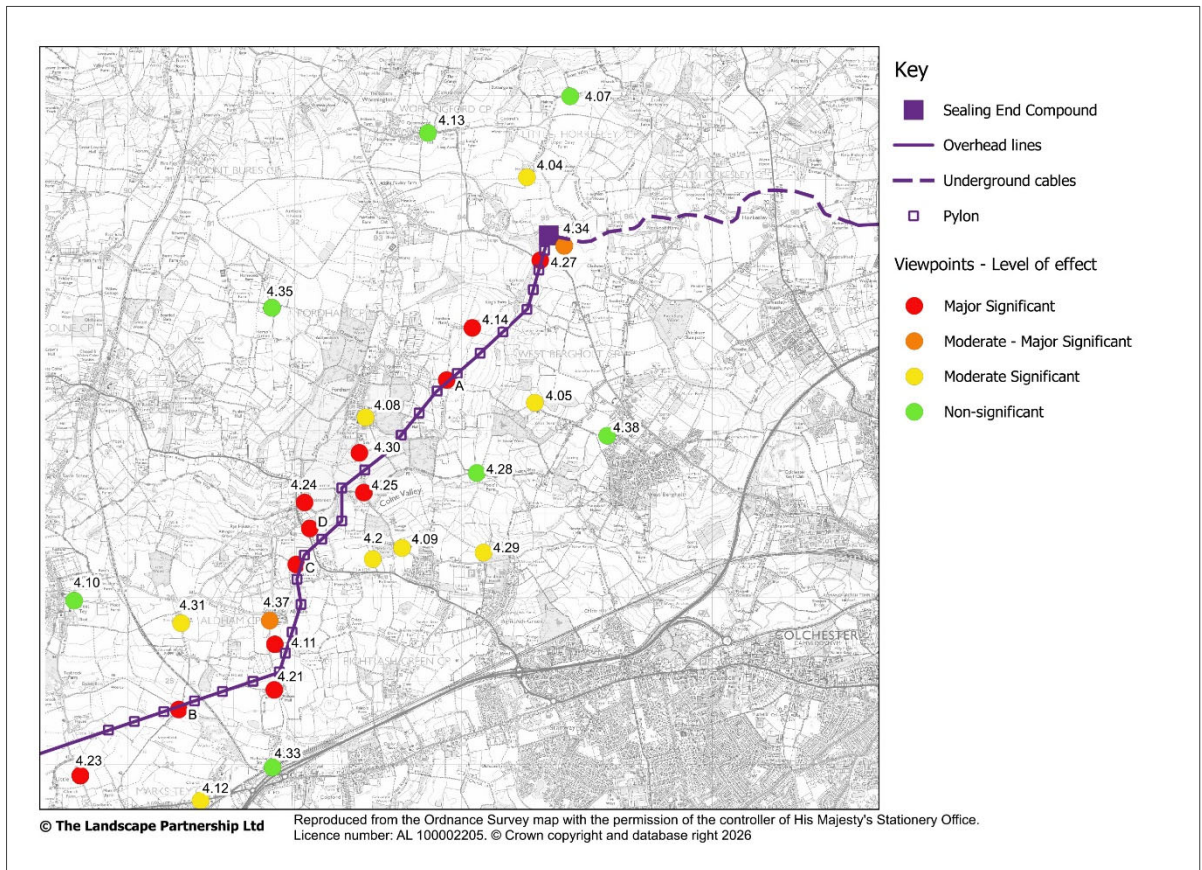


Figure 16: Distribution of visual effects

7 Review of undergrounding proposals along the Norwich to Tilbury route

7.1 Introduction

- 7.1.1 This section reviews locations elsewhere along the Norwich to Tilbury route where undergrounding has either been proposed or considered by National Grid during the development of the scheme.
- 7.1.2 The purpose of the review is not to suggest that these locations are directly comparable to the Colne Valley and Roman River corridor in terms of their landscape qualities. Rather, it is intended to examine the circumstances in which National Grid has considered or adopted undergrounding and the factors that informed those decisions.
- 7.1.3 Particular regard is given to the Waveney Valley Alternative and the Stour Valley underground cable section, as both examples provide insight into the application of NPS EN-5 and National Grid's approach to balancing landscape, heritage, recreational and environmental considerations against the use of overhead line infrastructure.

7.2 Waveney Valley Alternative

- 7.2.1 The Norwich to Tilbury Design Development Report, 2024 identified the Waveney Valley as a location where, notwithstanding the absence of a nationally designated landscape, the combination of potential landscape, heritage and recreational effects warranted further consideration of undergrounding in accordance with NPS EN-5.
- 7.2.2 The report noted: *“Whilst the Waveney Valley is not a nationally designated landscape as set out in NPS EN-5 paragraph 2.9.20, the area was formerly identified (in the local plan) as a Special Landscape Area. Effects would arise from new infrastructure in the landscape. In addition, the setting of a Grade I listed building (St Remegius Church) extends from the edge of Roydon across the valley to the agricultural hinterland and would be affected by a new overhead line. There would also be effects on an undesignated moat. The valley, including the adjacent SSSI are used extensively for recreation with a long-distance path the Angles Way (established by the Ramblers Association), crossed by the 2023 preferred draft alignment adjacent to RG087.”*
- 7.2.3 Subsequently, National Grid developed the Waveney Valley Alternative (WVA), comprising an approximately 2km section of underground cable through the Waveney Valley near Diss, together with associated cable sealing end compounds at either end of the underground section. The alternative was subject to statutory consultation and environmental assessment.
- 7.2.4 Although the WVA was not subsequently incorporated into the final Development Consent Order application, it demonstrates that National Grid considered the potential use of undergrounding within a landscape that was not nationally designated, but which still displayed sensitive attributes. In doing so, National Grid identified a combination of landscape, heritage, recreational and ecological considerations as relevant to the application of NPS EN-5 §2.9.26.
- 7.2.5 Whilst the Colne Valley and Roman River corridor differ in character from the Waveney Valley, similar categories of consideration are present in these areas, including former Special Landscape Area recognition (later proposed for redefinition as Proposed Areas of Landscape Conservation

Importance), significant landscape effects, heritage interests, promoted recreational routes and strategic ecological and green infrastructure functions.

7.3 Stour Valley

- 7.3.1 The Stour Valley underground cable section provides a useful example of a location where National Grid has adopted undergrounding as part of the proposed Norwich to Tilbury route. A review of the landscape character areas affected by this section provides an opportunity to consider whether similar characteristics and indicators of landscape sensitivity are present elsewhere along the route, including within the Colne Valley and Roman River corridor.
- 7.3.2 The findings of the N2T LVIA for the Stour Valley underground cable section and the Colne Valley and Roman River Valley overhead line section are summarised in Table 7.1 below.
- 7.3.3 The landscape value ratings presented in the table have been taken directly from the value assessment tables contained within *Document 6.13.A2 Environmental Statement Appendix 13.2 – Landscape Baseline and Assessment*, with the exception of B5a: Grove Tributary Valley and B2/B4: Roman River Corridor, for which the value ratings are derived from the appraisal presented in Section of this report.
- 7.3.4 Landscape susceptibility has not been included within this comparison, as it is intrinsically linked to the nature of the proposed development and consequently is not directly comparable between landscape character areas subject to overhead line infrastructure and those subject to underground cabling.
- 7.3.5 As landscape sensitivity is derived from a combination of landscape value and susceptibility, sensitivity ratings have likewise been excluded from the comparison. The analysis therefore focuses on landscape value and other indicators of landscape importance, including designations, planning policy recognition and strategic green infrastructure functions, which provide a more consistent basis for comparing the landscape character areas affected by the different forms of infrastructure.

Table 7.1: Summary of landscape value comparisons

Landscape Character Area	Value	Notes	Proposal
B7 Langham Farmland Plateau	Medium	Small part within Dedham Vale National Landscape	Part overhead / part underground
A7 Stour River Valley Slopes	Medium-high	Mostly within Dedham Vale National Landscape	Underground only
A8 Stour River Valley Floor	Medium-high	Entirely within Dedham Vale National Landscape	Underground only
18 Rolling Valley Farmland	High	Entirely within Dedham Vale National Landscape	Underground only
26 Valley Meadowlands	Medium-high	Mostly within Dedham Vale National Landscape	Underground only

Landscape Character Area	Value	Notes	Proposal
12 Plateau Farmlands	Medium	Small part within Dedham Vale National Landscape	Underground only
B6 Great Horkesley Farmland Plateau	Medium	Small part within Dedham Vale National Landscape	Part overhead / part underground
B5 Rochford's Farmland Plateau	Medium	Small part within Dedham Vale National Landscape	Part overhead / part underground
A5 Colne River Valley Slopes	Medium-high	Mostly within Areas of Landscape Conservation Importance Included in various Green Infrastructure Strategies (2008 onwards)	Overhead
A4 Colne River Valley Floor	Medium-high	Mostly within Areas of Landscape Conservation Importance Included in various Green Infrastructure Strategies (2008 onwards)	Overhead
B4 Great Tey Farmland Plateau	Medium	Partly within Areas of Landscape Conservation Importance	Overhead
B2 Easthorpe Farmland Plateau	Medium	Some parts included in various Green Infrastructure Strategies (2017 onwards)	Overhead
B5a Grove Tributary Valley	Medium-high	Mostly within Areas of Landscape Conservation Importance	Overhead
B2/B4 Roman River Corridor	Medium-high	Included in various Green Infrastructure Strategies (2017 onwards)	Overhead

7.3.6 Table 7.1 indicates that National Grid has adopted underground cabling within landscape character areas assessed in the N2T LVIA as being of Medium and Medium-High landscape value. The use of undergrounding within the Stour Valley is therefore not confined solely to landscapes assessed as having the highest landscape value ratings.

7.3.7 Table 7.1 demonstrates that the landscape character areas associated with the Stour Valley underground cable section comprise a range of landscape value ratings, including both **Medium and Medium-High value** landscapes. The areas subject to underground cabling are therefore not exclusively those assessed as having the highest landscape value within the N2T LVIA.

7.3.8 The table also shows that the Colne Valley and Roman River Valley landscape character areas affected by the proposed overhead line are similarly identified as Medium or Medium-High value landscapes. In addition, these areas are associated with a range of landscape policy recognitions, including proposed Areas of Landscape Conservation Importance and strategic Green Infrastructure corridors identified within local and sub-regional planning frameworks.

7.3.9 The comparison indicates that landscape value alone does not appear to explain the differing approaches adopted within the Stour Valley and the Colne Valley/Roman River Valley sections.

Landscapes assessed as being of Medium or Medium-High value occur within both the underground cable and overhead line sections of the route.

- 7.3.10** While the Stour Valley benefits from the additional protection afforded by the Dedham Vale National Landscape designation, both Table 7.1 and the analysis presented in Section 3 demonstrate that the Colne Valley and Roman River Valley are not undesignated or unrecognised landscapes. Rather, they have been consistently identified through landscape studies, planning policy and green infrastructure strategies as landscapes of particular importance that contribute to wider environmental, recreational and ecological objectives and have been consistently identified as strategic landscape corridors.
- 7.3.11** Earlier chapters of this appraisal have identified High landscape sensitivity within the A4 – Colne River Valley Floor, A5 – Colne River Valley Slopes, B5a – Grove Tributary Valley and B2/B4 – Roman River Corridor landscape character areas. A4 and A5 have been judged within the N2T LVIA as experiencing Major Significant or Moderate-Major Significant landscape effects arising from the proposed development, as have B5a and B2/B4 within this appraisal. Collectively, these findings indicate the presence of a series of a connected network of sensitive landscapes experiencing potential Major and Moderate-Major Significant effects extending through the Colne Valley and Roman River corridor.
- 7.3.12** These findings are reinforced by the visual assessment, which identifies Significant visual effects across a substantial proportion of the Area of Interest, including along a network of Public Rights of Way, Protected Lanes and recreational routes. The distribution of these effects indicates that visual effects would not be confined to a small number of isolated receptors but would be experienced across a wider area of the Colne Valley and Roman River corridor.
- 7.3.13** The findings are relevant to the provisions of EN-5, which recognise that undergrounding may warrant consideration where there is potential for widespread and significant adverse landscape and/or visual effects, including in locations outside nationally designated landscapes. In this context, the findings indicate that the Colne Valley and Roman River corridor exhibits characteristics that may warrant further consideration of feasible alternatives, including localised undergrounding as a means of reducing landscape and visual effects.

8 Analysis against EN-5: potential for widespread and significant landscape and visual effects

8.1 Introduction

- 8.1.1 This section draws together the findings of the appraisal and considers their implications in relation to the policy tests set out in National Policy Statement for Electricity Networks Infrastructure (EN-5). In particular, it considers whether the proposed overhead transmission infrastructure within the Area of Interest has the potential to give rise to widespread and significant adverse landscape and/or visual effects such that further consideration of feasible alternatives, including route refinement and localised undergrounding, may be warranted.
- 8.1.2 EN-5 establishes a strong starting presumption in favour of overhead lines for electricity transmission infrastructure. However, it also recognises that, away from nationally designated landscapes, locations may arise where there is a high potential for widespread and significant adverse landscape and/or visual impacts. In such circumstances, EN-5 indicates that the Secretary of State should be satisfied that evidence has been provided to support a decision on whether undergrounding is or is not appropriate, assessed on a case-by-case basis.
- 8.1.3 This appraisal does not seek to determine whether undergrounding should occur. Rather, it provides an evidence base to inform consideration of whether the circumstances described in EN-5 may arise within the Colne Valley and Roman River corridor.

8.2 Landscape character and sensitivity

- 8.2.1 The appraisal identifies the Area of Interest as comprising a connected series of valley, tributary valley and adjoining plateau landscapes west of Colchester. These landscapes contain a distinctive combination of river valleys, tributary valleys, rolling farmland, woodland, historic field patterns, historic settlements, rural lanes, Public Rights of Way and ecological assets.
- 8.2.2 The N2T LVIA identifies Medium-High landscape value and High sensitivity for the principal Colne Valley landscapes, namely A4 – Colne River Valley Floor and A5 – Colne River Valley Slopes. This appraisal broadly agrees with those judgements.
- 8.2.3 The review has also identified two localised landscape character areas, B5a – Grove Tributary Valley and B2/B4 – Roman River Corridor, which are considered to exhibit characteristics that differ materially from the wider plateau landscapes within which they occur. These areas contain concentrations of ecological, historic, cultural and perceptual characteristics which contribute to elevated landscape sensitivity.
- 8.2.4 As a result, High landscape sensitivity is identified across A4 – Colne River Valley Floor, A5 – Colne River Valley Slopes, B5a – Grove Tributary Valley and B2/B4 – Roman River Corridor. These areas are not isolated landscape pockets, but form part of a connected landscape framework extending through the Colne Valley and Roman River corridor.

8.3 Landscape effects

- 8.3.1 The review of the N2T LVIA indicates that the greatest landscape effects within the Area of Interest are associated with the visually sensitive valley landscapes of the Colne River corridor. Major Significant effects are identified within 0.5 km of the infrastructure within A4 – Colne River Valley Floor and A5 – Colne River Valley Slopes, reducing to Moderate Significant effects between 0.5 km and 1.5 km.
- 8.3.2 Significant landscape effects are also identified within the adjoining plateau landscapes. In addition, this appraisal indicates that the locally distinctive B5a – Grove Tributary Valley and B2/B4 – Roman River Corridor have the potential to experience significant landscape effects arising from the introduction of large-scale overhead transmission infrastructure.
- 8.3.3 Taken together, the findings indicate the potential for significant landscape effects across a series of connected and sensitive landscapes within the Area of Interest. These effects would extend across both the principal Colne Valley landscapes and locally distinctive tributary and river corridor landscapes, rather than being confined to a single isolated landscape receptor.

8.4 Visual amenity

- 8.4.1 The N2T LVIA includes 22 viewpoints within the Area of Interest, representing a range of receptors including road users and recreational users. Of these, Significant visual effects are identified at a substantial proportion of viewpoints within the Area of Interest.
- 8.4.2 The Area of Interest also contains an extensive network of Public Rights of Way, bridleways, Protected Lanes and recreational routes, including routes which provide views across the Colne Valley, adjoining plateau landscapes and Roman River Corridor. Users of these routes are likely to have a high degree of awareness of changes to the surrounding landscape, particularly where routes are valued for their rural character, tranquillity and recreational function.
- 8.4.3 The additional viewpoints reviewed as part of this appraisal indicate that opportunities for close-range views of the proposed infrastructure are not limited to the representative viewpoints assessed within the N2T LVIA. Additional Public Rights of Way and Protected Lanes within the Area of Interest also have the potential to experience notable and significant changes in visual amenity.
- 8.4.4 The findings therefore indicate the potential for widespread and significant adverse visual effects across the Area of Interest, affecting walkers, recreational users, road users and local communities. Significant visual effects would not be confined to a small number of isolated viewpoints but would be experienced across a wider network of routes and receptors within the Colne Valley and Roman River corridor.

8.5 Recognition of landscape value

- 8.5.1 The Colne Valley west of Colchester has been recognised through successive landscape studies, planning policy documents, green infrastructure strategies and local planning evidence as a landscape of particular value. Historic recognition through Special Landscape Areas and Countryside Conservation Areas is no longer part of the current planning framework, but the

studies that informed those designations provide evidence of the area's long-recognised landscape qualities.

8.5.2 More recent evidence, including landscape character assessments, green infrastructure strategies, neighbourhood planning and emerging local plan policy, continues to identify the Colne Valley and Roman River corridor as important landscape and green infrastructure resources. These studies recognise their contribution to ecological connectivity, recreation, nature recovery, landscape character and access to the countryside.

8.5.3 This evidence supports the conclusion that the Area of Interest should not be regarded as an ordinary undesignated landscape without recognised value. Rather, it comprises a connected landscape corridor whose qualities have been repeatedly identified through local and sub-regional evidence.

8.6 Comparison with other sections of the Norwich to Tilbury route

8.6.1 Review of other sections of the Norwich to Tilbury route indicates that National Grid has considered or adopted undergrounding in circumstances where a range of landscape, heritage, recreational and environmental factors are present. The Waveney Valley Alternative is relevant because undergrounding was considered in a landscape that was not nationally designated but which displayed a combination of sensitive attributes.

8.6.2 The Stour Valley underground cable section also demonstrates that undergrounding has been adopted within landscape character areas assessed in the N2T LVIA as being of Medium and Medium-High landscape value. The use of undergrounding within the Stour Valley is therefore not confined solely to landscapes assessed as having the highest landscape value ratings.

8.6.3 The comparison is not intended to suggest direct equivalence with the Stour Valley or Dedham Vale National Landscape, but rather to illustrate the range of factors that have informed routeing and undergrounding decisions elsewhere on the scheme. The Dedham Vale National Landscape designation remains an important distinction in relation to the Stour Valley. However, the comparison indicates that landscape value alone does not appear to explain the differing approaches adopted along the route, and that National Grid has had regard to a wider combination of landscape, heritage, recreational and environmental considerations.

8.6.4 Similar categories of consideration are present within the Colne Valley and Roman River corridor, including recognised landscape value, significant landscape effects, heritage interests, promoted recreational routes, ecological assets and strategic green infrastructure functions.

8.7 Overall analysis against EN-5

8.7.1 EN-5 recognises that, away from nationally designated landscapes, there may be locations where a high potential for widespread and significant adverse landscape and/or visual impacts may justify consideration of undergrounding or other feasible alternatives. The policy requires such matters to be considered on a case-by-case basis, weighing the relevant landscape, visual, environmental, technical and cost considerations.

-
- 8.7.2 The findings of this appraisal indicate that the Area of Interest contains a concentration of sensitive landscape and visual receptors. High landscape sensitivity is identified across the principal Colne Valley landscapes and within locally distinctive tributary and river corridor landscapes. Significant landscape effects are identified across a series of connected landscape character areas, and significant visual effects are identified across a substantial network of viewpoints, Public Rights of Way, Protected Lanes and recreational routes.
- 8.7.3 The evidence also demonstrates that the Colne Valley and Roman River corridor have been consistently recognised through landscape studies, planning policy documents, green infrastructure strategies and emerging local policy as valued and multifunctional landscape corridors. These characteristics contribute to the sensitivity of the Area of Interest and to the potential extent of adverse effects arising from the introduction of large-scale overhead transmission infrastructure.
- 8.7.4 Taken together, the findings indicate that the proposed overhead line has the potential to give rise to widespread and significant adverse landscape and visual effects within the Area of Interest. On this basis, there is a reasonable evidential basis for further consideration of feasible alternatives, including route refinement and localised undergrounding, in accordance with the provisions of EN-5.
- 8.7.5 This conclusion does not determine that undergrounding should be selected. Other matters, including engineering feasibility, cost, construction impacts, environmental effects and the effects of undergrounding itself, would need to be assessed by the applicant and considered by the Secretary of State. However, from a landscape and visual perspective, the appraisal indicates that the Colne Valley and Roman River corridor exhibits the type of circumstances in which EN-5 anticipates that further consideration of alternatives may be appropriate.
- 8.7.6 Taken together, the findings indicate the potential for widespread and significant adverse visual effects across the Area of Interest, affecting a range of visual receptors including walkers, recreational users, road users and local communities. The findings are therefore relevant to the considerations set out within paragraphs 2.9.24 and 2.11.6 of EN-5, which recognise that locations with a high potential for widespread and significant adverse landscape and/or visual impacts may warrant consideration of alternatives, including undergrounding.

Appendix Di

Norwich to Tilbury National Grid Pylon Project

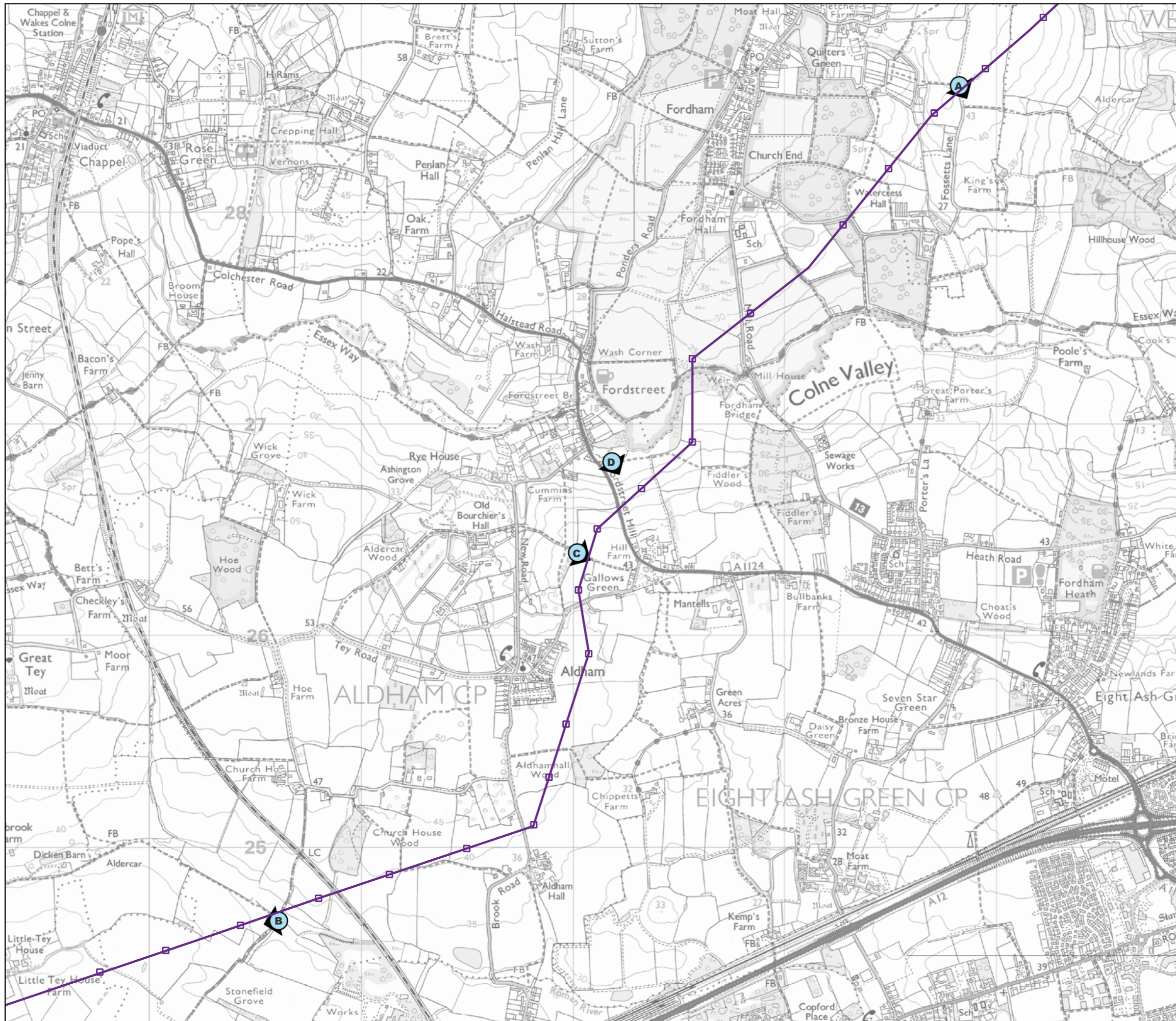
Landscape Sensitivity Appraisal:

Colne Valley




for

Essex Suffolk Norfolk Pylons

Appendix 01: Photographs



Key

-  Overhead lines
-  Pylon
-  Viewpoint



Viewpoint A; Fossetts Lane / PRoW Fordham-16



Viewpoint B; Bridleway 20 / PRoW Aldham-18

E24820
Norwich to Tilbury National Grid Pylon Project

Context Only Panorama Date: 05/06/2026
Drawn By: ZZ Checked By: VF



Viewpoint C; PRow Aldham-7



Viewpoint D; PRow Aldham-3

E24820
Norwich to Tilbury National Grid Pylon Project

Context Only Panorama Date: 05/06/2026
Drawn By: ZZ Checked By: VF

Appendix Dii

Norwich to Tilbury

High-Level Landscape Susceptibility Appraisal

for

Essex Suffolk Norfolk Pylons action group

Public consultation | 11th July 2024

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- 2 Generic impacts of overhead transmission line in the East Anglian landscape
- 3 Methodology
- 4 Findings of high-level landscape susceptibility appraisal
- 5 Summary of landscape parcels with the highest susceptibility to change
- 6 Initial overview of landscape and visual aspects of the PEIR

Appendices

- 01 Supporting figures and mapping – see N2T draft map sets
- 02 Visual presence of pylons in the landscape, when viewed at various distances

Executive summary

Introduction

National Grid Electricity Transmission (National Grid) is proposing to build c.184km of new electricity transmission infrastructure in order to reinforce the high voltage power network in East Anglia between existing substations at Norwich Main in Norfolk, Bramford in Suffolk, and Tilbury in Essex, as well as to connect new offshore wind generation. The project is known as Norwich to Tilbury.

Norwich to Tilbury meets the criteria of a Nationally Significant Infrastructure Project. As part of the Development Consent Order process there is a statutory duty to undertake public consultation.

1.3 Essex Suffolk Norfolk Pylons action group

Essex Suffolk Norfolk Pylons action group, with 35,000 supporters as of June 2024, opposes the Norwich to Tilbury AC overhead lines and short sections of undergrounding proposed by National Grid. It seeks genuine consultation on viable alternatives such as an integrated offshore grid, HVDC undergrounding and re-rating of the existing grid. All three alternatives are known to be cheaper, less environmentally damaging and more popular. The alternatives that the Essex Suffolk Norfolk Pylons action group advocates, namely an integrated offshore grid or HVDC undergrounding, would significantly reduce the extent of, or remove altogether, the harm to the landscape along the Norwich to Tilbury route.

1.4 Commission

The Landscape Partnership has been instructed by Essex Suffolk Norfolk Pylons to undertake an independent High-Level Landscape Susceptibility Appraisal (HLLSA), to identify sections of the Norwich to Tilbury corridor where pylons and/or associated infrastructure could have a particularly adverse influence on the character of the landscape or on views.

Generic impacts of overhead transmission lines in the East Anglian landscape

Pylons are tall features that can be visible over very long distances. Pylons are perceived as modern features within the landscape and tend to contrast with the existing features of the landscape in terms of their height, scale, materiality, colour and texture. The effect on the character of the landscape relates to the introduction of a new element within the landscape which is incompatible with its established character. It is not possible to screen pylons and they are then inevitably perceived as new (and even dominant) features within the landscape that introduce a strong sense of modernity.

Pylons potentially affect perceptual aspects of the landscape including the sense of rurality.

East Anglia contains large areas of gently undulating landscape with numerous small rivers and streams. This type of gently undulating landscape of low relief is particularly susceptible to being overwhelmed by large structures.

Landscape susceptibility appraisal

The HLLSA assessed the susceptibility of the different landscapes within the route corridor to change from an 400kV overhead line with associated 50m high pylons.

The findings of the landscape susceptibility appraisal were set out in a table to aid comparison and analysis.

Summary of findings

The HLLSA identified those landscape parcels with the highest susceptibility to change from the proposed electrical transmission line. As such, it is recommended that they are subject to further detailed study and analysis to ascertain whether any development of the type proposed is even appropriate within that land parcel and, if it is considered to be so, whether the scheme design should be fine-tuned in terms of whether:

- undergrounding of cables is an appropriate treatment
- the proposed alignment of cables and pylons is appropriate in terms of minimising effects on the character of the landscape
- opportunities to provide mitigation measures to integrate the development into the landscape have been maximised; this might include advanced planting or other screening techniques

It is very important to remember that landscape effects must be considered as a spectrum. There is no defined threshold that a development must reach in order to be considered acceptable. The HLLSA is a first tranche sieving exercise to identify the landscapes with the very highest susceptibility to change. Other landscapes within the study area are also likely to experience adverse effects from the introduction of pylons, some substantial, and rigours of good analysis and design in terms of alternative options, variations to layout and alignment, and best use of mitigation measures must be applied to these landscape parcels as well to ensure the development is assimilated into the landscape in an acceptable manner.

The analysis concluded that the most sensitive sections of the route would be the Dedham Vale (which is already proposed for undergrounding) and the Waveney Valley (which is being considered for undergrounding). The findings of this study suggest undergrounding would be appropriate in both cases. The study also identified the following sensitive sections of route where further study and possible undergrounding would be merited.

Norwich Main substation to Tibenham – this section of the route lies on the western edge of the Tas Valley. It crosses a rural landscape with subtle, intricate topography. The preferred route is open to public and private views and there would also be cumulative effects.

Winfarthing to Bressingham – this section of route has a higher sensitivity based on the rural nature of the landscape, the subtle topography and the potential for cumulative effects.

The Waveney Valley including the tributary valleys – this section of route is highly sensitive across several different indicators. The valley landform is sensitive to change, the preferred route is close to residential receptors in Diss and Roydon, and the Angles Way would also be affected. Undergrounding this section of route would potentially benefit large numbers of people in the locality.

Mellis to Stowupland - this section of route crosses ancient countryside within the Suffolk claylands which is considered to have a higher sensitivity to change. The area has a rural character and there are potential cumulative effects.

Gipping Valley to Belstead Brook – the route crosses three river valleys within this section and the whole segment is considered to have a higher sensitivity. South Suffolk features an undulating and

intimate landscape which would be overwhelmed by pylons of this size. Undergrounding would potentially benefit large numbers of people in Needham Market and Ipswich.

Colne Valley – the study identified higher sensitivity within the Colne Valley based on the rural character of the much of the valley, the presence of commons, and the sensitivity of the topography. The preferred route cuts across the valley.

Blackwater River Valley – the narrow Blackwater Valley was identified as having higher sensitivity. The route would cut across the valley in the vicinity of the gardens at Feeringbury Manor.

The Brain Valley to the Chelmer Valley – the narrow Brain Valley was found to be sensitive across all the indicators. The route would cut across the valley near White Notley. The preferred route would also cut across the Chelmer Valley between Great Waltham and Little Waltham. In between, the route crosses an area of gently-undulating ancient countryside which has a complex landscape pattern. Undergrounding would potentially benefit residents in White Notley, Great Waltham and Little Waltham.

Blackmore Wooded Farmland – this area contains a number of ancient woodlands on a low hill which are the surviving portions of a medieval royal forest.

Countryside between Shenfield and Billericay – this whole area has been identified as having higher sensitivity, with the ridge at the southern edge of the area being particularly sensitive to this type of development. Undergrounding would potentially benefit large numbers of people in Brentwood, Billericay and Havering's Grove.

Landscape and Visual aspects of the Preliminary Environmental Information Report

As part of this pre-application consultation process, National Grid has prepared a Preliminary Environmental Information Report (PEIR), dated April 2024. The purpose of the report is to identify likely significant effects of the Norwich to Tilbury project and so inform consultation, allowing stakeholders to have an informed understanding of the likely effects of the project.

As such, it is very important that the PEIR presents stakeholders with a full and balanced description of the effects of the whole project.

The PEIR has been prepared as part of the wider Environmental Impact Assessment (EIA) process, at a point in time when the design is still being refined. Identified significant effects should be revisited as part of this exercise in order that suitable and appropriate design measures (which might include undergrounding or wholesale realignment) and mitigation measures can be proposed to negate adverse effects or to reduce them to within acceptable thresholds.

The full findings of the EIA process will be presented in the form of an Environmental Statement (ES), which will be submitted with the application for the DCO.

Landscape and visual aspects of the project are considered at Chapter 13 of the PEIR.

Appendix 13.1 of the PIER - Landscape Baseline and Assessment - provides an overview of landscape receptors within the study area.

The Landscape Partnership makes the following initial observations regarding the preliminary assessment, based on the information provided within the PEIR.

- Given the length of the route corridor, the number of landscape units to be considered is large. The analysis is inevitably broad and in many places the judgements are generic. More,

- specific, detail will be required at the ES stage for the impacts of the development to be fully understood by those determining the DCO application.
- No assessment has been undertaken to determine the sensitivity of the landscape and various receptors considered in the assessment (neither their landscape value nor their susceptibility to change). Without this information it is not clear how the significance of effect has been calculated.
 - The presence of existing wirescapes, etc. is taken to lower the sensitivity of a landscape, rather than consideration being given to the (negative) cumulative effects that would arise.
 - The ZTV [PEIR Volume II Figure 13.8.1 to 13.8.11) demonstrates that the proposed development has the potential to influence the character of landscape and visual receptors (people) well beyond 3km, and the assessment should be extended to encompass those landscape character units beyond the study area that have the potential to be influenced by the proposed development.
 - Despite the acknowledged extensive visibility of the proposed development, a total of just 89 viewpoints have been selected to represent the experience of receptors (people) who would see the view. This equates to one representative viewpoint per 2km for the 184 km route. This is wholly inadequate to illustrate the likely effects of the proposed development.
 - It is stated for most character areas that beyond 1km “layers of vegetation including woodland and field boundary trees would reduce intervisibility with the wider LCA.” Intervisibility may be *reduced*, but this still leaves considerable scope for visibility beyond this distance, as indicated by the ZTV.
 - For many of the landscape receptors and representative viewpoints the severity of the impact on the view is acknowledged, almost as if it were an inevitable outcome. For example, the statement that “Effects on visual receptors would likely be significant (negative) within approximately 1 km of the Project” is repeated for many of the project sections. The frequency of the use of this judgement might be considered to have the effect of underplaying its consequence to the casual reader. Similarly, there is a sense that a 2km (1km plus 1km) corridor along the route of Norwich to Tilbury somehow constitutes only a small area of harm. The project includes c.159km of overhead line, with significant effects generally being acknowledged within 1km of the route.
 - Despite the judgement of significant negative harm to landscape and visual receptors, there is very limited or no discussion of what mitigation measures may or may not be appropriate.
 - There is no discussion as to whether additional areas (beyond the Dedham Vale National Landscape and the Waveney Valley) are sufficiently sensitive to change that undergrounding the route would be appropriate. Likewise, the assessment is silent on whether any other sections of the route have been considered (and rejected) for such treatment and for what reasons.
 - For the construction phase, reference is made to the need to remove various landscape elements in order to accommodate the new elements and facilitate the proposed works, e.g. sections of hedge, areas of woodland. Little information is provided as to whether such

features would be reinstated or restored and/or the length of time required to make good the damage.

- Given the close proximity of various settlements to the proposed development (for example Tacolneston, Gislegham, Aldham, and Little Waltham) it is likely that some properties could cross the residential visual amenity threshold. Such matters are not considered in the PEIR and will be reserved for the full LVIA and ES. A detailed assessment could identify a need for substantial amendments to the scheme and should be considered earlier in the design process whilst there is still an opportunity to vary the route alignment or the proposed mitigation accordingly.

1 Introduction

1.1 Norwich to Tilbury

- 1.1.1 National Grid Electricity Transmission (National Grid) is proposing to build c.184km of new electricity transmission infrastructure in order to reinforce the high voltage power network in East Anglia between existing substations at Norwich Main in Norfolk, Bramford in Suffolk, and Tilbury in Essex, as well as to connect new offshore wind generation. National Grid envisages that the project would contribute to the Government's commitment to reach net zero greenhouse gas emissions by 2050 and an ambition to connect 50 GW of offshore wind by 2030.
- 1.1.2 The east coast is already a focus for offshore wind, with a significant proportion of current and likely future offshore wind projects located there. Further new nuclear generation is proposed at Sizewell C in Suffolk.
- 1.1.3 The project is known as Norwich to Tilbury and the development comprises:
- c.159km new 400kV overhead lines
 - c.510 steel lattice pylons (some with gantries), typically 50m high with three sets of cross arms
 - four sections of new undergrounded 400kV cabling, totalling c.25km
 - six cable sealing end (CSE) compounds to connect the overhead lines to the undergrounded cables
 - a new East Anglia Connection Node (EACN) substation to the south of Lawford that would connect the energy generated by offshore windfarms and interconnectors to the transmission network
 - works at existing substations
 - permanent access roads to operate and maintain the CSEs and the substations
- 1.1.4 An alternative proposal is also being considered to underground a 2km section of the route where it passes through the Waveney Valley. If this option was implemented, it would require an additional two CSEs.
- 1.1.5 The Norwich to Tilbury overhead line would extend from the Norwich Main Substation, to the south of Norwich (which would be subject to extension works), and follow a line broadly south south-westwards through South Norfolk parallel with and to the west of the A140, crossing the Waveney Valley to the west of Diss.
- 1.1.6 From here, Norwich to Tilbury would continue southward through Mid Suffolk to the west of the A140, crossing the Gipping Valley between Stowmarket and Needham Market. It would then take a south-eastward course to meet the existing Bramford Substation to the west of Ipswich.
- 1.1.7 From Bramford, the route would continue south-westward, crossing the Dedham Valley and the Dedham Vale National Landscape before taking a course south-eastward through Tendring to meet

a new EACN substation south of Lawford. It is currently proposed that the section of the route between Raydon Airfield and the new EACN substation at Lawford is undergrounded.

1.1.8 An overhead line would follow a line from the EACN, around the northern and western sides of Colchester. A section of the route through Great Horkesley would be undergrounded. Through Braintree district, Norwich to Tilbury would follow a line west south-westward to the north of and broadly parallel with the A12, passing between Braintree and Witham. A short section would be undergrounded at Fairstead to facilitate the crossing on an existing 400kV line.

1.1.9 The route continues south-westward and the southward around the western side Chelmsford, before crossing the A12 between Margaretting and Ingatestone. It continues southward between Brentwood and Billericay and then west of Basildon, crossing the A13 to the west of Stanford-le-Hope to meet the existing Tilbury Substation, which would be subject to upgrading works. The final section, from a point to the west of Linford, would be undergrounded.

1.1.10 In doing so, Norwich to Tilbury would traverse a number of different landscape types, including:

- the farmland plateau of south Norfolk
- the Waveney Valley
- the claylands of High Suffolk
- the undulating countryside of south Suffolk
- the Dedham Vale National Landscape
- the Tendring Peninsula
- the rolling Essex claylands
- the Brentwood Hills
- the expansive open landscapes of the Thames Basin, and
- the Tilbury Marshes

1.2 Nationally Significant Infrastructure Project

1.2.1 Norwich to Tilbury meets the criteria of a Nationally Significant Infrastructure Project under the Planning Act 2008, since it would comprise more than 2km of overhead line. As such, the application for development consent is being submitted to the Planning Inspectorate. If consent for the project is awarded, this would be granted in the form of a Development Consent Order (DCO) from the Secretary for State for Business, Energy and Industrial Strategy following a public examination of the application.

1.2.2 Consultation is an important part of the DCO process. There have been two previous rounds of non-statutory consultation and National Grid has now embarked on a statutory pre-application consultation. This consultation is intended to enable everyone to comment on the proposals and allow feedback to help inform the development that is ultimately submitted to the Planning Inspectorate as a DCO application.

1.2.3 National Grid has prepared a package of information that includes:

- 2024 Project Background Document
- Preliminary Environmental Impact Report (PEIR)
- a Non-technical Summary of the PEIR

1.3 Essex Suffolk Norfolk Pylons action group

1.3.1 Essex Suffolk Norfolk Pylons action group, with 35,000 supporters as of June 2024, opposes the Norwich to Tilbury AC overhead lines and short sections of undergrounding proposed by National Grid. It seeks genuine consultation on viable alternatives such as an integrated offshore grid, HVDC undergrounding and re-rating of the existing grid. All three alternatives are known to be cheaper, less environmentally damaging and more popular.

1.4 Commission

1.4.1 The Landscape Partnership (TLP) has been instructed by Essex Suffolk Norfolk Pylons to undertake an independent High-Level Landscape Susceptibility Appraisal, to identify sections of the Norwich to Tilbury corridor where pylons and/or associated infrastructure could have a particularly adverse influence on the character of the landscape or on views.

1.4.2 It is important to note that the study does not constitute a detailed landscape sensitivity appraisal of the ability of each landscape within the Norwich to Tilbury route corridor to accommodate development of the type proposed. Given the timescales and resources available to Essex Suffolk Norfolk Pylons, a more proportionate high-level desktop appraisal has been undertaken using information gathered within the PEIR, publicly available data and the assessors' own local knowledge and experience of the landscapes of East Anglia.

1.4.3 On the basis that any pylon development of the scale proposed would be likely to have a considerable influence on any landscape, the appraisal would not focus on identifying areas with more capacity to accommodate the proposed development. Rather, it would be a first tranche sieving exercise to identify sections of the route corridor that would merit further and more detailed study to ensure the pylons and infrastructure are located so as to cause the least harm and that appropriate mitigation measures are designed and included as an integral part of the scheme to negate, or reduce to acceptable levels, any adverse effects arising from the proposed development. Such remedial measures might include realignment of the pylon runs, advanced planting to screen pylons and infrastructure, undergrounding of sections of overhead line, etc.

1.4.4 The findings of the appraisal, including any commentary and advice, will be used by Essex Suffolk Norfolk Pylons to enable them to compile an informed consultation response.

1.5 Relevant experience

1.5.1 The Landscape Partnership has been at the forefront of environmental and landscape planning in the UK for over 35 years. We are specialists in undertaking strategic landscape studies and in providing landscape planning advice, frequently within sensitive or contentious landscapes.

1.5.2 The practice's services range from large scale landscape character assessments, regional green infrastructure strategies, landscape capacity and sensitivity studies, through to site specific landscape and visual impact assessments and appraisals.

-
- 1.5.3 Its clients encompass the public, private and voluntary sectors and our team of landscape planners provide professional and impartial advice to assist at all stages of the development planning process.
- 1.5.4 The Landscape Partnership is able to advise on the protection and enhancement of landscapes, and have developed robust and rigorous methodologies to assess the potential landscape effects associated with development. Its staff provide clear analysis and are able to defend their judgements as expert witnesses.
- 1.5.5 The high-level appraisal was led by Simon Neesam, a Director of The Landscape Partnership and a Chartered Landscape Architect with over 25 years' experience. He holds a degree and a postgraduate diploma in Landscape Architecture and became a fully qualified Chartered Member of the Landscape Institute in 1994. Simon has a wide range of experience in landscape architecture and landscape planning, and has undertaken projects for private clients as well as national, regional, and local public sector bodies throughout the UK. He has carried out landscape assessments, visual impact assessments, and acted as expert witness for a variety of projects including major out-of-town retail facilities, highway schemes, renewable energy developments, landfill and mineral schemes, flood alleviations schemes, and new housing, often within sensitive landscapes or at potentially contentious locations.
- 1.5.6 Simon was supported by Simon Murdoch, Senior Landscape Architect with over 15 years' experience. Simon has played a lead role in a variety of landscape planning studies including Landscape Character Assessments, Townscape Character Studies, Environmental Statements and Historic Environment Assessments
- 1.5.7 Geographical Information System (GIS) data handling was coordinated by Nigel Cowlin Associates. Nigel Cowlin has over 30 years professional experience and has been a Chartered Member of the Landscape Institute (CMLI) for more than 20 years. Nigel is Director of Nigel Cowlin Ltd, a Landscape Institute Registered Practice specialising in landscape assessment and landscape design issues relating to planning and development. Nigel formed this company in 2011. Before this he spent six years as a Landscape Architect / Landscape Planner in two different multi-disciplinary private practice planning consultancies. His early professional experience otherwise mainly comprised a nine-year period as a Local Authority Planning Department Landscape Officer.
- 1.5.8 Nigel's professional career has a particular focus on the presentation and review of landscape assessment and landscape design aspects of development proposals within the planning system. This experience includes many development scenarios and in a wide variety of contexts, including residential schemes ranging from single house developments to large urban extensions, commercial developments, as well as renewable energy development projects. Nigel regularly undertakes Landscape and Visual Impact Assessments and Appraisals (LVIA & LVA) and also often reviews those of others. He is often involved in planning appeals and has experience as landscape and visual issues expert witness at hearings and public inquiries, where he has represented both appellants and Local Planning Authorities
- 1.5.9 In more recent years Nigel has taken a particular interest in digital mapping systems (Geographic Information Systems - GIS) and their applicability to landscape assessment work. This includes baseline constraints and designations maps preparation, landform elevation mapping, landscape
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character mapping, zone of theoretical visibility (ZTV) modelling, and mobile GIS for in the field data collection.

2 Generic impacts of overhead transmission line in the East Anglian landscape

2.1 Overview

2.1.1 The following section provides a summary of some of the landscape and visual that might derive from an electricity transmission line, with particular consideration of the influence that such a development might exert on the landscapes of East Anglia.

2.2 Transmission lines and pylons

2.2.1 Construction of transmission lines inevitably introduces new elements within the landscape. Overhead lines result in prominent and elevated new features, whilst underground cables have a more subtle impact.

2.2.2 Pylons are tall features that can be visible over very long distances. The National Grid was first established in 1928 and initially consisted of 132kv lines. Pylons are perceived as modern features within the landscape and the original design for the pylons was based quite consciously on modernist principals, it being believed that *“Over-elaboration, for whatever reason, is to be deprecated, and true adherence to the strict engineering requirements will seldom result in a structure which will offend the eye.”*¹ The steel structure of the pylons could only have been developed using modern technology, and the colour and texture (as well as the height and scale) tend to contrast with the more established features of the landscape. Pylons are sometimes described in landscape character assessments or LVIAs as detracting elements.

2.2.3 It could be argued that many land uses (e.g. agriculture) can continue below a transmission line. The effect on character then relates to the introduction of a new element within the landscape which is incompatible with its established character. The change to character can be described in terms of the scale, character and appearance of the towers, which is frequently in stark contrast to the existing elements of the landscape. It has to be acknowledged that the possibilities for minimising this effect (through screening for example) are limited due to the scale of the structure. Pylons then are inevitably perceived as new (and even dominant) features within the landscape that introduce a strong sense of modernity.

2.2.4 Whilst the landscape of East Anglia typically reflects a long-established pattern, and is still largely composed of pre-modern features such as fields, woodlands and lanes. The technology of electricity transmission has only recently been developed, and the 400 kV lines in particular utilise large towers. This is in contrast to the DNO network, much of which is located below ground or on wooden poles. It should also be recognised that the proposed 400 kV line uses towers which are typically 50m tall, whereas the 132 kV network in East Anglia uses smaller towers which are around 26-27m tall. Whilst all pylons have a certain effect on the landscape, the 50m tall structures are

¹ Annual Report of the CEB 1928 referring to the final design of the pylons [Pylons: controversial giants in the landscape | Science and Industry Museum](#)

clearly of a different scale in relation to existing features such as trees or buildings. The modern towers are also bulkier in appearance than the original 1928 models, particularly the angle towers which are used where there is a change of direction.

- 2.2.5 Consideration must also be given to the cumulative effects of transmission lines. Landscapes without existing transmission infrastructure are in a sense more sensitive because they would go from being a landscape without modern or tall structures, to being a landscape with these features. The areas of landscape which are untouched by overhead wires are finite and increasingly rare, which increases their value and sensitivity. The introduction of additional lines, however, can also have profound effects on character. Towers may come to be visible over very large swathes of the landscape and the fundamental characteristics of the landscape can alter as pylons become a key or even dominant element within the landscape. Whilst this study has focused specifically on the cumulative effects of power lines (only) there are also closely-related forms of development such as substations and battery storage sites which are changing the character of the countryside.

2.3 Height comparisons

- 2.3.1 Overhead transmission lines introduce a set of suspended wires as well as the pylon structures which support them. Compared with other types of development the pylons are of a somewhat massive scale, e.g. those proposed for Norwich to Tilbury would be 50m high. As a comparison, commercial warehouses are typically around 14m tall, and new housing in the region would typically be 9m to 12m tall.
- 2.3.2 Considering existing features within the East Anglian landscape, a mature oak tree would be 20m to 25m tall, and hybrid black poplars and some species of conifer could reach almost 30m tall. East Anglia has a high density of medieval churches, nearly all of which have church towers. Whilst the region has many fine churches the majority of the buildings are relatively small in scale. Heights of church towers are typically 15m to 30m (Offton: 14m, Coddanham: 20m, Bressingham: 22m, Dedham: 31m).
- 2.3.3 The tallest elements in the East Anglian landscape are masts and wind turbines. For example, the mast at Tacolneston is 206m high and the wind turbines at Eye Airfield are c.130m to the tip. However, wind turbines are experienced individually or in small groups, e.g. three to five in number, and not as long and continuous features. Non-the-less, they still exert a considerable visual influence on the surrounding landscape.

2.4 Visual representations of pylons in the landscape

- 2.4.1 A set of illustrations have been prepared to illustrate the visual presence of pylon towers in the landscape, when experienced at a variety of viewing distances.
- 2.4.2 The illustration diagrams show how the perceived scale of the pylon would vary depending on distance from the viewer.
- 2.4.3 The diagrams have been prepared in accordance with methodologies contained in within landscape Institute Technical Guidance Noted 06/19: Visual Representation of Development Proposals, dated 17.09.2024.

2.4.4 The diagram should be viewed at a distance of 500 – 550mm from the eye to provide an image at the same scale as the eye would see (100% scale); this equates approximately to arm length. The apparent height of the pylon decreases with distance. The heights of the pylons when superimposed into a standard 100% scale photo would vary as follows:

- at 6km: pylon would be 4.5mm in photograph
- at 5km: 5.5mm
- at 4km: 7mm
- at 3km: 9mm
- at 2km: 13.5mm
- at 1km: 27mm
- at 500m: 54mm
- at 200m: 135mm

2.4.5 The illustrations are presented at Appendix 02.

2.4.6 The height diagrams use a typical L6 suspension tower that has a standard height of 50.59m.

2.4.7 To aid comprehension, within the diagrams, the height of a pylon has been compared to a mature oak tree (which would be around 20m tall) and to a person (1.8m tall), all positioned on the horizon.

2.5 Rural countryside

2.5.1 The general public often refer to the ‘unspoilt quality’ of the landscape of East Anglia, which can be interpreted as the continuity of an established landscape pattern, and the dominance of traditional rural land-uses such as agriculture and forestry. If it is accepted that these are the typical uses of the countryside then transmission lines inevitably represent a new and contrasting feature. Whether this new feature is discordant or is capable of absorption relates to the established characteristics of the particular landscape it would be located within and the degree to which the feature would be harmed. It could even be argued that electricity transmission infrastructure has the potential to become a key characteristic of the landscape in its own right, which would indicate a significant change to the character of the landscape.

2.5.2 The qualities of countryside can be described in terms of intactness or the absence of detracting features, and the irreversibility of change (qualities which are lost forever). Rarity is also relevant since intact rural landscapes are becoming increasingly rare.

2.5.3 In contrast, some landscapes seem to be untouched by modern development, and the presence of existing infrastructure can, potentially, reduce susceptibility to change.

2.5.4 Therefore, the effects of overhead transmission lines can be described both in terms of their scale, and also in terms of their effect on the perceptual characteristics of a landscape.

2.6 Topography, scale and enclosure

2.6.1 Whilst East Anglia is sometimes described as flat it includes large areas of gently undulating landscape. There are no high hills in the region, but the land is drained by numerous rivers and

streams, which create a rolling landform. Added to this there are also areas of fenland which create expansive plains and, at a smaller scale, estuaries associated with the numerous rivers that cross the area. This type of gently undulating landscape of low relief is particularly susceptible to being overwhelmed by large structures. It has sometimes been argued that larger-scale upland landscapes are more able to accept transmission infrastructure as the pylons appear small and insignificant within these landscapes, and are often contained within a valley. Within East Anglia pylons would overwhelm the small valleys and quickly become the dominant feature of the landscape.

2.7 Holford Rules

2.7.1 Guidelines on the routing of overhead lines were first formulated in 1959 by Sir William (later Lord) Holford and became known as the Holford Rules. It is acknowledged that present day environmental assessment has a wider remit than the visual amenity that the Holford Rules concentrate on. Nonetheless, National Grid has reviewed the guidelines and concluded that they remain relevant.

2.7.2 Rule 1:

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.

2.7.3 A sub note to Rule 1 requires that designers should “Investigate the possibility of alternative routes, avoiding if possible the areas of the highest amenity value” and, importantly, that “The consideration of alternative routes must be an integral feature of environmental statements.”

2.7.4 Areas of highest amenity value include Areas of Outstanding Natural Beauty [National Landscapes], National Parks and Heritage Coasts.

2.7.5 Rule 2:

Avoid smaller areas of high amenity value, or scientific interests by deviation; provided that this can be done without using too many angle towers, ie the more massive structures which are used when lines change direction.

2.7.6 The sub note to Rule 2 notes that “Where possible choose routes which minimise the effects on the setting of areas of architectural, historic and archaeological interest including Conservation Areas, Listed Buildings, Listed Parks and Gardens and Ancient Monuments.”

2.7.7 Rule 3:

Other things being equal, choose the most direct line, with no sharp changes of direction and thus with fewer angle towers.

2.7.8 Sub note of Rule 3: “Where possible choose inconspicuous locations for angle towers, terminal towers and sealing end compounds.”

2.7.9 Rule 4:

Choose tree and hill backgrounds in preference to sky backgrounds wherever possible; and when the line has to cross a ridge, secure this opaque background as long as possible and

cross obliquely when a dip in the ridge provides an opportunity. Where it does not, cross directly, preferably between belts of trees.

2.7.10 Rule 5:

Prefer moderately open valleys with woods where the apparent height of towers will be reduced, and views of the line will be broken by trees.

2.7.11 Sub note on Rules 4 and 5: *“Utilise background and foreground features to reduce the apparent height and domination of towers from pan viewpoints”, “Minimise the exposure of numbers of towers on prominent ridges and skylines”, “Where possible avoiding cutting extensive swathes through woodland blocks and consider opportunities for skirting edges of copses and woods”, “Protecting existing vegetation, including woodland and hedgerows, and safeguard visual and ecological links with the surrounding landscape”.*

2.7.12 Rule 6:

In country which is flat and sparsely planted, keep the high voltage lines as far as possible independent of smaller lines, converging routes, distribution poles and other masts, wires and cables, so as to avoid a concentration or ‘wirescape’.

2.7.13 Sub note 6 continues the commentary on cumulative effects:

In all locations minimise confusing appearance. Arrange wherever practicable that parallel or closely related routes are planned with tower types, spans and conductors forming a coherent appearance; where routes need to diverge, allow where practicable sufficient separation to limit the effects on properties and features between the lines.

2.7.14 Rule 7:

Approach urban area through industrial zones, where they exist; and when pleasant residential and recreational land intervenes between the approach line and the substation, go carefully into the comparative costs of the undergrounding, for lines other than those of the highest voltage.

2.7.15 Sub note for Rule 7 includes:

... Alignments should be chosen after consideration of effects on the amenity of existing development and on proposals for new development. When siting substations take account of the effects of the terminal towers and line connections that will need to be made and take advantage of screening features such as ground form and vegetation.

2.7.16 Supplementary notes include:

Avoid routeing close to residential areas as far as possible on grounds of general amenity.

Where possible choose routes which minimise the effect on Special Landscape Areas, areas of Great Landscape Value and other similar designations of County, District or Local value

2.8 Horlock Rules

2.8.1 Similarly, National Grid’s Horlock Rules provide guidance regarding the siting of substations, etc.

2.8.2 Overall System Options and Site Selection

1. *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.*

2.8.3 Amenity, Cultural or Scientific Value of Sites

2. *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.*
3. *Areas of local amenity value, important existing habitats and landscape features including ancient woodland, historic hedgerows, surface and ground water sources and nature conservation areas should be protected as far as reasonably practicable.*
4. *Local Context, Land Use and Site Planning 4 The siting of substations, extensions and associated proposals should take advantage of the screening provided by land form and existing features and the potential use of site layout and levels to keep intrusion into surrounding areas to a reasonably practicable minimum.*
5. *The proposals should keep the visual, noise and other environmental effects to a reasonably practicable minimum.*
6. *The land use effects of the proposal should be considered when planning the siting of substations or extensions.*

2.8.4 Design

7. *In the design of new substations or line entries, early consideration should be given to the options available for terminal towers, equipment, buildings and ancillary development appropriate to individual locations, seeking to keep effects to a reasonably practicable minimum.*
8. *Space should be used effectively to limit the area required for development consistent with appropriate mitigation measures and to minimise the adverse effects on existing land use and rights of way, whilst also having regard to future extension of the substation.*
9. *The design of access roads, perimeter fencing, earthshaping, planting and ancillary development should form an integral part of the site layout and design to fit in with the surroundings.*

2.8.5 Line Entries

10. *In open landscape especially, high voltage line entries should be kept, as far as possible, visually separate from low voltage lines and other overhead lines so as to avoid a confusing appearance.*
11. *The inter-relationship between towers and substation structures and background and foreground features should be studied to reduce the prominence of structures from main*

viewpoints. Where practicable the exposure of terminal towers on prominent ridges should be minimised by siting towers against a background of trees rather than open skylines.

3 Methodology

3.1 Overview

- 3.1.1 The methodology for undertaking the High-Level Landscape Susceptibility Appraisal (HLLSA) was based on the process set out in *An approach to landscape sensitivity assessment – to inform spatial planning and land management* (ALSA), Natural England, June 2019², supplemented by the more recent guidance in the Landscape Institute’s *TGN 02-21: Assessing landscape value outside national designations* (ALVOND), May 2021. Reference was also made to *Guidelines for Landscape and Visual Impact Assessment*, Landscape Institute and Institute of Environmental Management and Assessment, 3rd Edition, April 2013 (GLVIA) and *Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity*, Countryside Agency and Scottish Natural Heritage, 2002.
- 3.1.2 The development of the methodology was informed by similar studies carried out by The Landscape Partnership in the past. It also took account of principles expounded in the Holford Rules (regarding the siting of pylon runs) and the Horlock Rules (regarding the siting of substations, etc.).
- 3.1.3 The European Landscape Convention³ promotes achieving “sustainable development based on a balanced and harmonious relationship between social needs, economic activity and the environment”.
- 3.1.4 The ALSA notes:
- Landscape sensitivity may be regarded as a measure of the resilience, or robustness, of a landscape to withstand specified change arising from development types or land management practices, without undue negative effects on the landscape and visual baseline and their value – such as changes to valued attributes of baseline landscape character and the visual resource. Landscape sensitivity assessment is a process that assesses the resilience/robustness of landscape character and the visual resource – and what we value - to a defined change, or changes. It can help decision makers to understand likely changes and the nature of change should particular courses of action - the development/land management scenarios – be taken forward. [page 5]*
- 3.1.5 ALSA and GLVIA adopt a similar basic approach to the assessment of sensitivity, i.e. that sensitivity is a product of:
- 1/ the susceptibility of a landscape or visual baseline to a specific change; and
 - 2/ the value of the landscape and its visual characteristics.
- 3.1.6 However, there are some important distinctions to be made in terms of how sensitivity is considered by ALSA, compared to the approach within GLVIA:

² Tudor, C, Natural England, 2014, Op Cit

³ Council of Europe (2000), European Landscape Convention, Council of Europe, Florence, October 2000

- In GLVIA terms, sensitivity, and in particular susceptibility to change, is considered in regard to a known development, whereas ALSA allows a more strategic assessment of landscape sensitivity, and it's the principle of a particular type of development change scenario that is considered.
- Within the context of spatial planning, landscape sensitivity refers to landscape character and the associated visual resource. Whereas GLVIA considers the landscape character and visual effects separately.

3.1.7 Landscape sensitivity can be considered as a measure of *“the resilience, or robustness, of a landscape to withstand specified change arising from development types or land management practices, without undue negative effects on the landscape and visual baseline and their value.”*⁴

3.1.8 Historically, there has been some confusion concerning the use of the words sensitivity and capacity, and on occasions the two terms have been used interchangeably. The ASLA notes:

Sensitivity and capacity have different meanings. When dealing with an area's sensitivity the question is, 'to what'? When dealing with an area's landscape capacity perhaps to absorb a certain amount of development without unacceptable changes to landscape character – the question generally relates to, 'how much'? Importantly, a sensitivity study will identify areas of relative sensitivity to particular development scenarios, and inform place based objectives and guidance and possibly decisions concerning environmental capacity - perhaps by way of what some might call a Landscape Capacity Assessment. The latter might help decision makers to set more detailed objectives about the amount of acceptable change within a specified area, and therefore inform a more detailed strategy regarding desired amounts of development / change.

3.1.9 The ASLA requires that the LSA process should *“enable associated decision making to be sequential, transparent and auditable.”*

3.1.10 Landscape Sensitivity Assessment should *“enable associated decision-making to be sequential, transparent and auditable.”*⁵

3.2 Landscape sensitivity

3.2.1 The sensitivity of a landscape or visual receptor is determined by combining the value afforded to the receptor with its susceptibility to change.

3.2.2 **Landscape value** is based on considerations such as landscape quality/condition; landscape fabric and rarity; scenic quality; wildlife, heritage and cultural interest; recreation value; and perceptual aspects. The presence of a landscape designation can help to identify value and reasons for a designation are usually established in a supporting study. Landscapes or features without any formal designation may also express characteristics that are valued locally. Where there is no supporting evidence base, details regarding sensitivity should typically be derived from landscape character assessments.

⁴ Tudor, C, Natural England, 2014, Op Cit

⁵ Ibid.

- 3.2.3 **Susceptibility to change** assesses the relative ability of a landscape to accommodate the changes that would result from a particular type of development. This is an integral element of the landscape assessment but one that can only be judged in the context of the generic type of development being proposed. However, it is not necessary to understand the specifics of the development to make this judgement and thus susceptibility to change can be considered as part of the baseline assessment.
- 3.2.4 This HLLSA assesses the susceptibility of the different landscapes within the route corridor to change from an 400kV overhead line with associated 50m high pylons. Given the high-level nature of the study, it considers the susceptibility of the landscape to this generic development scenario, assuming it is constructed within the defined route corridor; it does not consider the detailed location of each element of the development. Where appropriate, commentary is made regarding the presence of associated infrastructure such as sub stations.
- 3.2.5 The HLLSA does not consider the landscape value of the various landscapes within the study area. This would be a separate, further exercise. Combing this information with the corresponding susceptibility to change, using professional judgement. would give an overall landscape sensitivity.
- 3.2.6 As a broad generalisation, some initial indication of the value of a landscape can be ascertained by the presence of any landscape-related designations encompassing all or part of the particular landscape. Where relevant, the presence of such designations has been referenced in the study and is illustrated in the *Designated landscapes* map set at Appendix 01.

3.3 Areas of study

- 3.3.1 The HLLSA considers the susceptibility of the different landscapes along the Norwich to Tilbury route corridor and, in particular, a study area defined by a 3km off set either side of the proposed overhead lines and underground cables.
- 3.3.2 The importance of understanding the landscape character of all landscapes in England is recognised in the National Planning Policy Framework (NPPF) para 180, which states that planning policies and decisions should contribute to the natural environment by: *“recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland”*.
- 3.3.3 Landscape character assessment is the process that can identify these intrinsic values and unique characteristics of the diverse landscapes within in the UK. It enables landscapes to be described and understood by mapping natural, physical and cultural features in order to define different landscapes and demonstrate what makes them special. These landscape character types share similar characteristics, such as underlying geology, soil type, topography and landform, the pattern and type of land/field enclosure, historic land use, the pattern of settlements and types of building that these comprise, tree and woodland cover and the general visual experience of the area.
- 3.3.4 It is important to note that landscape character assessments can be undertaken at a range of scales. It should also be noted that boundaries are only indicative of the change between areas and therefore when working at a site scale, especially close to boundaries between character types or character areas, users should carefully identify which landscape the land parcel belongs to, based

on its characteristics. In addition, it is important to note that while drawn with a line on a map, areas close to boundaries often may be better thought of as an area of transition and may display some of the characteristics and sensitivities of both character areas.

- 3.3.5 Effects on landscape character can be both direct, i.e. on the character area/landscape type that the site is located within, and indirect, i.e. changes to characteristics or perceptions of character that occur beyond the boundary of a character area/landscape type. In addition, effects on landscape character may be positive or negative, i.e. strengthening and enhancing the characteristic patterns and features, or eroding and losing the patterns and features that contribute to landscape character.
- 3.3.6 It should be noted that given the nature, and in particular the scale, of the proposed Norwich to Tilbury project, it would be very unlikely that the addition of elements of the development to the landscape could result in a positive benefit or enhancement to its character.
- 3.3.7 Since different landscapes are defined by different physical and perceived qualities and attributes, it is likely that they will have differing resilience to a particular form of development. For example, a rural landscape could more readily accommodate a barn, without changing the character of the area, whereas other types of development could potentially result in a significant change to the character of the landscape. This overview then looks at landscape sensitivity in relation to power transmission.
- 3.3.8 To understand the effects the proposed development would have on the character of different landscapes, the landscape of the study area was divided into areas of common landscape character using the landscape types and landscape character areas defined in the following published landscape character assessments:
- South Norfolk Landscape Character Assessment, Chris Blandford Associates, 2012
 - Suffolk County Landscape Character Assessment, Suffolk County Council, updated 2011
 - Colchester Borough Landscape Character Assessment, Chris Blandford Associates, 2005
 - Tendring Landscape Character Assessment, Land Use Consultants, 2001
 - Braintree, Brentwood, Chelmsford, Maldon and Uttlesford Landscape Character Assessments, Chris Blandford Associates, 2006
 - Landscape Character and Green Belt Landscape Capacity Study for Basildon Borough Council, The Landscape Partnership, 2014
 - Thurrock Landscape Capacity Study, Chris Blandford Associates, 2005
- 3.3.9 For the purposes of this appraisal, these areas of common landscape character are referred to as *landscape parcels*.
- 3.3.10 The landscape parcels are mapped on the *District LCAs* map set at Appendix 01.

3.4 Desktop Appraisal

- 3.4.1 A desk-based study was undertaken that involved gathering and reviewing current and background information, including previous studies, environmental designations and other relevant baseline information. This included reference to:
- Natural England’s National Character Area Profiles
 - The various county and district level landscape character assessments listed above
 - DEFRA’s MAGIC Map
- 3.4.2 GIS data used for the HLLSA included OS map data, landscape-related designations, settlement, landform and hydrology data, ecology designations, habitat data, and heritage designations (both statutory and local, including Conservation Areas and Registered Parks and Gardens).
- 3.4.3 The baseline appraisal is presented as a collection of map sets that comprise Appendix 01 to the HLLSA, and which can be found at N2T draft map sets.
- 3.4.4 The assessment findings should be read in conjunction with the map sets within Appendix 01.

3.5 Susceptibility analysis

- 3.5.1 Given this HLLSA is a first tranche sieve to identify areas of the route corridor that should be subject to more detailed study, the susceptibility of each of the landscape parcels to the proposed development was assessed as a desktop exercise. The appraisal and analysis were carried out by a team of Chartered Landscape Architects who used a standard proforma to record data in a consistent manner.

3.6 Approach to assessing the susceptibility of the landscape to change

- 3.6.1 The susceptibility of each landscape parcel to the type of change proposed, i.e. a 400kV cable run with associated pylons, substations and other infrastructure development, was assessed using a pre-defined set of criteria. These criteria reflect both the national guidance in ALSA and the particular circumstances of the landscapes within the vicinity of the study area.
- 3.6.2 Each criterion was accompanied by a set of indicators of change to help guide the assessor in making judgements as to what factors should be considered to indicate a higher susceptibility to change and what factors a lower susceptibility.
- 3.6.3 Since the HLLSA is a desktop exercise, the criteria and/or the indicators used to assess them have been adapted accordingly. Some criteria that might commonly be used in LSAs to assess susceptibility to change have been omitted on the grounds that they would necessitate or require detailed assessment that would be beyond the scope of this high-level study. As such, the HLLSA does not purport to be a full and comprehensive Landscape Sensitivity Assessment. Rather it is a tool that would highlight the landscapes within the route corridor most susceptible to change in a robust and transparent manner, and thus those that would merit further and more detailed future study and analysis.
- 3.6.4 To assess each landscape’s susceptibility to change, certain assumptions were made. For the purposes of this study it was assumed that development would comprise:

- 400kV overhead lines. It is recognised that undergrounding is proposed (or under consideration) for some sections of the route. To ensure a consistent baseline approach in identifying the landscapes most sensitive to change (and thus worthy of additional mitigation such as undergrounding), it was assumed that the full length of the Norwich to Tilbury route would utilise overhead lines.
- The overhead lines would be elevated using 50m pylons.

3.6.5 It was also assumed that the development would take the course of the scheme set out in the PEIR and illustrated on the accompanying figures.

3.7 Criteria and indicators for assessing susceptibility to change

3.7.1 To reiterate, this is a high-level initial sieving exercise. The criteria have been selected as ones that can be measured as a desktop exercise, all in the knowledge that further and more detailed study, including field assessment, would be required to fine tune the appropriate design or mitigation responses.

3.7.2 As noted above and set out in ALSA, landscape sensitivity assessments, and in particular susceptibility to change appraisals, generally consider the sensitivity of a landscape unit to the principal of a particular type of development change scenario, rather than a particular development.

3.7.3 This high-level sensitivity assessment progresses a little way beyond the approach outlined in ALSA, since the current broad parameters of the proposed Norwich to Tilbury development are generally understood, and so for some of the criteria it has been possible (as highlighted below), to take into account in the assessment the distance of the proposed development from the landscape element in question.

3.7.4 For the purposes of this HLLSA, the following criteria were selected to assess the susceptibility of each landscape parcel within the study area to change.

Scale

3.7.5 The scale or grain of the landscapes within the Norwich to Tilbury corridor and the sense of enclosure they afford varies greatly, from large-scale, farmed plateau landscapes and wide open marshes, through ancient, complex enclosed countryside, to the more intimate, contained and small scale valleys.

3.7.6 Indicators of higher susceptibility to change include:

- Intimate enclosed landscapes
- Small-scale field pattern
- Human-scale elements

3.7.7 Indicators of lower susceptibility to change include:

- Vast or large-scale landscapes
- Planned landscapes

3.7.8 In undertaking the analysis, particularly reference has been made to the following sources of information:

- Appendix 01: Landform and landcover map set
- Ordnance Survey 1:25,000 mapping
- Geograph⁶

Topography

3.7.9 Many of the topographical features that are traversed by the Norwich to Tilbury route corridor have an east-west bias, having been influenced by the rivers and other water courses that generally flow in an eastward direction to meet the North Sea.

3.7.10 The route corridor has a broadly north-south orientation. As a result, valleys and ridges that have an east-west orientation would be particularly susceptible to any change that cut across them.

3.7.11 Indicators of higher susceptibility to change include:

- Irregular, complex or distinctive landform, e.g. hills and ridges, steep slopes, narrow valleys
- River valleys - particularly those with an east-west bias.

3.7.12 Indicators of lower susceptibility to change include:

- Simple landform e.g. wide plain or plateau

3.7.13 In undertaking the analysis, particularly reference has been made to the following sources of information:

- Appendix 01: Landform and landcover map set
- Ordnance Survey 1:25,000 mapping

Landcover pattern

3.7.14 Whilst arable agriculture is the predominant landcover within the route corridor, other land uses include pasture, woodland, quarries, historic parklands, commons, nature reserves, settlements (of various scales) and industrial and commercial enterprises.

3.7.15 Indicators of higher susceptibility to change include:

- Semi-natural habitats
- Complex or irregular landscape
- Ancient field patterns
- Ancient woodlands
- Historic landscapes, e.g. parkland
- Historic features, e.g. halls, moats, medieval churches, ponds, hundred lanes

⁶ <https://www.geograph.org.uk/>, accessed 06.06.2024

3.7.16 Indicators of lower susceptibility to change include:

- Simple, regular or uniform landscape
- Modern field patterns
- Modern elements e.g. major roads
- Developed or previously developed land

3.7.17 In undertaking the analysis, particularly reference has been made to the following sources of information:

- Appendix 01: Habitat map set
- Appendix 01: Designations map set
- DEFRA's MAGIC map
- Ordnance Survey 1:25,000 mapping
- Ordnance Survey Six inch maps (first and second editions)
- Suffolk Historic Landscape Characterisation
- Essex Historic Landscape Characterisation

Settlement pattern and density

3.7.18 The Norwich to Tilbury route corridor would encompass what is essentially a 'settled landscape'. Whilst man's influence is more apparent in some areas than others, almost all the landscapes have a settled quality – that is, there are few, if any, areas that could be described as wild or very remote. However, this does not detract from the strong rural countryside character that pervades. Within the study area there are examples of ancient organic landscapes and more recent planned landscapes.

3.7.19 Indicators of higher susceptibility to change include:

- Historic settlement pattern which is still legible within the modern landscape
- Settlement pattern which relates to landscape features e.g. to a river or a green
- Rural areas

3.7.20 Indicators of lower susceptibility to change include:

- Modern forms of development, e.g. housing estates, airfields, industrial development, caravan parks
- Urbanised areas

3.7.21 In undertaking the analysis, particularly reference has been made to the following sources of information:

- Appendix 01: PROW & Settlement Areas map set
- Ordnance Survey 1:25,000 mapping

- Ordnance Survey Six inch maps (first and second editions)
- An atlas of rural settlement – English Heritage
- An historical atlas of Suffolk – Dymond and Martin

3.7.22 Consideration has been given to the proximity of the proposed development to areas of settlement, by reference to offset buffers illustrated on The Landscape Partnership's figures.

Openness to public view

3.7.23 The ZTV within the PEIR suggests that the pylons would be potentially visible from most points within a 3km buffer of the centre line of the route. Local and specific ground truthing would be required to confirm the presence of any screening elements and to assess the full effect of any changes.

3.7.24 Indicators of higher susceptibility to change include:

- Presence of visual receptors using (in approximate hierarchical order):
 - Promoted viewpoints
 - Promoted routes
 - Public Rights of Way
 - National cycle routes
 - Roads

3.7.25 Indicators of lower susceptibility to change include:

- Absence of potential visual receptors

3.7.26 In undertaking the analysis, particularly reference has been made to the following sources of information:

- Appendix 01: PROW & Settlement Areas map set
- Ordnance Survey 1:25,000 mapping
- Sustran's map of the National Cycle Network

3.7.27 Consideration has been given to the proximity of the proposed development to potential visual receptors at private viewpoints, by reference to offset buffers illustrated on The Landscape Partnership's figures.

3.7.28 A good indication of the visual presence of the proposed 50m high pylons, at various viewing distances, can be achieved through reference to the pylon height illustrations attached at Appendix 02.

Private views

3.7.29 The ZTV suggests that the pylons would be potentially visible from most points within a 3km buffer of the centre line of the route. Local and specific ground truthing would be required to confirm the presence of any screening elements and to assess the full effect of any changes.

3.7.30 Indicators of higher susceptibility to change include:

- Presence of visual receptors within (in approximate hierarchical order):
 - Settlements
 - Scattered settlements
 - Occasional, individual properties

3.7.31 Indicators of lower susceptibility to change include:

- Absence of potential visual receptors

3.7.32 In undertaking the analysis, particularly reference has been made to the following sources of information:

- Appendix 01: PROW & Settlement Areas map set
- Ordnance Survey 1:25,000 mapping

3.7.33 Consideration has been given to the proximity of the proposed development to potential visual receptors at private viewpoints, by reference to offset buffers illustrated on The Landscape Partnership's figures.

3.7.34 As noted in relation to private views above, a good indication of the visual effects of the proposed 50m high pylons, at various viewing distances, can be achieved through reference to the height comparison illustrations attached at Appendix 02.

Cumulative effects of wirescapes

3.7.35 Since the proposed Norwich to Tilbury must connect into existing infrastructure at Norwich and Tilbury, as well as into substations at intermediary points along its route, it is inevitable that sections would be located in close proximity to existing lines (referred to here as wirescapes) and associated infrastructure.

3.7.36 This in turn would result in a build-up of effect on landscape and visual receptors as the quantum of wirescapes in the landscape or view is increased.

3.7.37 Indicators of higher susceptibility to change include:

- Presence, extent and quantum of existing wirescapes and associated infrastructure

3.7.38 Indicators of lower susceptibility to change include:

- Absence of existing wirescapes and associated infrastructure

3.7.39 In undertaking the analysis, particularly reference has been made to the following figures:

- Appendix 01: Other Power Lines map set

3.7.40 Consideration has been given to the proximity of the proposed development to existing wirescapes, by reference to offset buffers illustrated on The Landscape Partnership's figures.

3.8 Overall assessment of susceptibility to change

- 3.8.1 Narrative commentary was made as to how each landscape parcel would perform against the defined indicators of change for each of the specific criteria of susceptibility. These comments were recorded on the summary form (see Table 4.1). This allowed the judgements made for each criterion to be viewed in a transparent, comparable and consistent manner for each landscape parcel.
- 3.8.2 Professional judgment was used to make an overall assessment of each landscape parcel's susceptibility to landscape change.
- 3.8.3 Given the purpose of the exercise was to identify landscapes *most* sensitive to change, and thus particularly worthy of further analysis, the report does not report the overall relative sensitivities of all landscape parcels within the study area. Rather, it highlights those landscape parcels that are likely to have the highest susceptibility to change.

3.9 Recommendations

- 3.9.1 It is recommended that at least those landscape parcels that have been found to have a higher susceptibility to change be subject to further and detailed analysis to determine whether:
- any development of the type proposed within the landscape parcel is appropriate
 - undergrounding of the section of the route is appropriate [NB: the PEIR notes that three sections of the route already merit such treatment on landscape grounds (including the Dedham Vale, an area within Great Horkesley and Tilbury Marshes), and that consideration is also being given to whether the section through the Waveney Valley should also be undergrounded]
 - there are options to reduce adverse effects through realignment of the route corridor
 - there is potential to mitigate likely adverse effects through mitigation measures, which might include such treatments as advance planting or other screening method
- 3.9.2 It is very important to remember that landscape effects must be considered as a spectrum. There is no defined threshold that a development must reach in order to be considered acceptable. The HLLSA is a first tranche sieving exercise to identify the landscapes with the very highest susceptibility to change. Other landscapes within the study area are also likely to experience adverse effects from the introduction of pylons, some substantial, and rigours of good analysis and design in terms of alternative options, variations to layout and alignment, and best use of mitigation measures must be applied to these landscape parcels as well to ensure the development is assimilated into the landscape in an acceptable manner.
- 3.9.3 Further, the landscape parcels considered in the susceptibility appraisal are necessarily broad and in places extensive. As such, it is quite likely that there are variations in susceptibility within a parcel itself, with some areas of the parcel being more capable of accommodating the proposed development than others. Such areas should be identified and addressed in the emerging design.

4 Landscape susceptibility appraisal

4.1.1 The findings of the landscape susceptibility appraisal are set out in Table 4.1 below.

Table 4.1

Landscape Character Type/ Landscape Character Area	Scale	Landform	Landcover pattern	Settlement pattern and density	Public views	Private views	Cumulative effects	Overall
South Norfolk								
B1: Tas Tributary Farmland Swardeston Swainsthorpe Flordon Wreningham Hapton Tacolneston Bunwell	Small tributary valleys and the upper Tas Valley. Small-scale enclosed landscapes	Gentle valley slopes	Ancient irregular enclosures, small commons Predominantly arable with small woods. Unimproved grasslands associated with tributary valleys. Species-rich calcareous fen at Flordon Common Complex pattern	Rural area Historic settlement pattern. Dispersed settlement pattern, small villages and hamlets, numerous churches, outlying farms. Roman road, halls, moats. More recent elements include railway, 400kv line, substation and solar farm	Boudicca Way (within 2km) Dense network of lanes and PROW in upper Tas Valley	Villages and hamlets Within 1km of Swainsthorpe Scattered development along lanes e.g. Forncett St Peter	Existing 400kv line leading south from Norwich Main	Medium-High
D1: Wymondham Settled Plateau Farmland	Small woods in Mulbarton and Flordon. Medium-sized fields. Longer distance views from plateau edge. Medium-scale	Low plateau. Land falls gently at edges towards streams	Ancient irregular enclosures Arable with small woods Relatively simple pattern	Rural area, lanes with hedges Historic settlement pattern with some addition Housing estates at Mulbarton, solar farm, small industrial estate Railway and A11 further away	Network of lanes and PROW	Villages and hamlets Within 1km of Mulbarton Scattered development along lanes e.g. Fundenhall	Some potential intervisibility with exiting 400kv line	Medium
E1: Ashwellthorpe Plateau Farmland Tacolneston	Larger fields. Undulating landform with small brooks creates medium-scale landscape	Plateau falling at edges towards streams	Mainly early enclosure with some late enclosure of commons Boundary loss in the vicinity of Banyard's Hall	Rural area Historic settlement pattern of small villages and lanes remains intact Telcom mast	Dense network of PROW and lanes around Carleton Rode, Tacolneston and Ashwellthorpe	Smaller villages and hamlets Within 1km of Forncett End Within 2km of Tacolneston	Some potential intervisibility with existing 400kv line (outside area)	Medium-High
E2: Great Moulton Plateau Farmland Tibenham Winfarthing	Open, more expansive landscape in Tibenham. Smaller fields creating more enclosure in Winfarthing	Flat	Mainly early enclosure with some late enclosure of commons Large arable fields in Tibenham Smaller fields, hedges and hedgerow trees in Winfarthing Relatively simple rural landscape	Dispersed settlement pattern. Roman road, moated hall sites, turnpike road Disused airfields at Tibenham and Fersfield, railway, few other modern elements	Dense network of PROW and lanes	Lightly settled	Existing 400kv line to the east running in parallel direction. Around 4km away	Medium
B4: Waveney Tributary Farmland Shelfhanger Haywood Roydon	Medium and small-scale fields. Small tributary valleys. Some longer views from slopes. Overall medium-scale	Almost flat	Semi-natural habitats Shelfhanger Meadows SSSI Frenze Beck County Wildlife Site	Rural area, roman road, moated sites Historic settlement pattern still intact	Boudicca Way (3-5km away) Network of PROW and lanes	Hamlets and dispersed settlement Within 1km of Winfarthing	Existing 400kv line to the east running in parallel direction. 2-4km away.	Medium-High

Landscape Character Type/ Landscape Character Area	Scale	Landform	Landcover pattern	Settlement pattern and density	Public views	Private views	Cumulative effects	Overall
A5: Waveney Rural River Valley Roydon	Intimate, small-scale fields, enclosure from woodland	Shallow valley	Semi-natural habitats – fen, river, carr Developed land, A road	Round tower church at Roydon Modern development at Diss, Roydon and Scole	Angles Way - crossed by proposed route	Larger settlements of Diss and Roydon Within 1km of Roydon Within 2km of Diss	132kv line just over 1.2km to the east 400kv line 4km to the east	Medium-High
Babergh & Mid Suffolk								
31 - Wooded valley meadowlands and fens Wortham	Narrow riparian corridor	Shallow valley	Semi-natural habitats - Unimproved grassland, carr	Farmland and woodland	Not widely accessible, but the landscape type is crossed by the Angles Way	Not generally settled but some properties at Denmark Bridge c.1km from route	132kv line within 1km of proposed route Different sizes of pylon are likely to create a confused appearance Landscape begins to be dominated by pylons	Medium-High
19 - Rolling valley farmlands and furze Two instances of this type (north and south) Palgrave Burgate Creting St Peter	Small side valleys and tributary valleys, small-scale field pattern	Shallow valley, small tributary valleys	Semi natural habitats – acid grassland and heath at Wortham Ling SSSI	Historic settlement pattern still legible, minor expansion of Palgrave A14 in the south	Registered Common Land and nature reserve with car park at Wortham Ling National Cycle Route 30	Lightly settled Isolated dwellings within 1km of proposed route	132kv line within 2km of proposed route Different sizes of pylon are likely to create a confused appearance Landscape begins to be dominated by pylons	Medium-High
3 - Ancient plateau claylands Two instances of this type (north and south) Burgate Stowupland Stonham Earl Barking Willisham Somersham Bramford	Simple plateau landform with larger fields. Moderately open, creating larger-scale landscape	Burgate, Gislingham, Barking, Willisham - simple plateau landform Stonham Earl - promontory landform	Boundary loss from irregular coaxial fields in Burgate and Gislingham, surviving greens Semi-natural habitats - Unimproved grassland, deciduous woodland, Ancient & Semi-Natural Woodland at Duchess Wood and Barking Woods Historic lanes	Rural Distinctive green-side villages and isolated farms/cottages Halls, moats More recent elements comprise airfields, and electricity lines. A143, railway and 132kv line in the north. Wattisham Airfield and Elmsett Airfield in the south. Existing lines converging on Bramford substation (located at the edge of the area).	Network of public rights of way, commons, green lanes and lanes Dense network of public footpaths around Barking Tye, Willisham Tye, Ringshall Stocks and Great Bricett	Villages and isolated farms/cottages Within 2km of Palgrave Isolated dwellings within 1km of proposed route Within 1km of Gislingham	Parallel to 132kv line in Burgate/Mellis 400kv line 2-3km to east Lines converging on Bramford Substation Bramford Substation, East Anglia THREE converter station, Brook Farm battery storage (50MW)	Medium
10 - Plateau claylands Gislingham Finningham	Moderately open landscape, varied field size including some large arable fields, some enclosure from trees and hedges. Larger-scale landscape	Smooth landform Dove tributaries and upper reaches of the River Gipping	Co-axial fields north of Mendlesham (pre-dating parish boundary), ancient irregular enclosures, boundary loss Historic lanes	Rural Intact historic settlement pattern Halls, moats	Dense network of public rights of way and lanes	Gislingham, Finningham and Mendlesham Green within 1km Mendlesham and Cotton within 2km	400kv line 1-2km to the east	Medium-High

Landscape Character Type/ Landscape Character Area	Scale	Landform	Landcover pattern	Settlement pattern and density	Public views	Private views	Cumulative effects	Overall
Wickham Skeith Mendlesham		create gentle folds in the landscape		Railway and 400kv line cut through landscape, otherwise few modern elements		Isolated farms and cottages within the countryside		
26 - Valley meadowlands Creeting St Peter Badley	Mid-sized valley, some enclosure from woodland, medium-small scale	Mid-sized valley (Gipping)	Semi-natural habitats - unimproved grassland, deciduous woodland in valley floor	Generally undeveloped Factories adjacent to Stowmarket Railway	Gipping Valley River Path National Cycle Route 51 Public footpaths following valleys	Not generally settled	lines converging on Stowmarket substation 132kv and 400kv lines running north-south Proposed route runs parallel to 132kv line Mast within Badley	
17 - Rolling valley claylands Badley	Intimate within tributary valleys, small woods, lanes, small-scale landscape	Minor valley (Gipping tributary) creating complex landform Valley-sides and promontory at Badley Hill	Generally arable on valleysides, meadow within minor valley, small woods, lanes with some outlying farms and halls. Complex pattern of rural land uses	Existing 132kv lines	Dense network of PROW and lanes	The valley sides are lightly settled Urban area of Needham Market within 1km of proposed route	Proposed route runs parallel to 132kv line	
18 - Rolling valley farmlands Offton Chattisham Stratford St Mary	Intimate valleys creates sense of enclosure which is supplemented by woodland. Small-scale landscapes Dedham Vale is wider, medium-scale	Small valleys associated with the Somersham watercourse, Belstead Brook and Spring Brook	Ancient, irregular enclosures Mosaic of arable, unimproved grassland, woodland, hamlets, moats, outlying farms. Intricate landcover pattern Ancient & Semi Natural Woodland at Middle Wood, Offton	Historic settlement pattern of small villages/hamlets situated within the valley. Road follows the course of the valley Existing 132kv line	Dense network of PROW and lanes	Small villages in upper part of valley, larger villages closer to Ipswich Offton and Somersham within 1km of the route Bramford and Sproughton within 2km Views possibly hidden by landform	Proposed route runs parallel to 132kv line	
1 - Ancient estate claylands Copdock and Washbrook Wenham Parva	Plateau offers some long views creating sense of larger scale	Plateau	Ancient, irregular enclosures and co-axial fields (pre-dating parish boundaries) in Wenham Parva and Chattisham Historic lanes	Historic settlement pattern intact Halls, moats More recent elements comprise dismantled railway, A12, existing transmission lines and former airfield at Raydon A12 follows route of Roman road, but features modern highway engineering	National cycle route 1 Network of public rights of way and lanes	Village, hamlet and dispersed settlement Capel St Mary 2-3km from the proposed route Isolated properties within 1km of the route	The landscape type is crossed by two existing 132kv lines 400kv line 2-3km to the north-west Landscape begins to be dominated by pylons	

Landscape Character Type/ Landscape Character Area	Scale	Landform	Landcover pattern	Settlement pattern and density	Public views	Private views	Cumulative effects	Overall
Colchester								
A8: Stour River Valley Floor	Medium-scale, enclosure from valley-sides	Vale	Meadows (improved and unimproved grassland), arable, historic mill (Dedham Mill)	Rural area, farmland, historic mill, lock Few modern elements except A12	St Edmunds Way, Stour Valley Path	Little settlement within valley floor beyond historic watermills and occasional farm	No other lines within this area	
A7: Stour River Valley Slopes	Intricate landscape but with views across Dedham Vale. Medium-scale	Steep valley side on southern edge of vale	Woods, villages, farmland Complex pattern	Historic villages Historic settlement pattern still legible Few modern elements except A12	Network of lane and public rights of way. Several Public Rights of Way Stour Valley Path less than 2km from the pylons at closest point	Village of Dedham and hamlet of Dedham Heath Isolated farms and cottages along lanes	No other lines within area	
B6: Great Horkesley Farmland Plateau	Small holdings create enclosure along roads, some larger scale fields	Plain	Late enclosure, planned landscape. Small holdings	Small holdings, ribbon development of C19/C20 origin	Network of lanes and PROW	Residential properties within a few hundred meters of the line Scattered settlement along roads Horkesley Heath around 1km from the line	No other lines within area	
B7: Langham Farmland Plateau	Plain. Enclosure from hedges and settlements. Medium scale	Plain	Settlement, former airfield, solar farm	Settled. Later ribbon development in Langham	Rights of Way within 1 and 2km of the site	Residential properties in Langham less than 2km from the line	No other lines within area Solar farm	
B5: Rochfords Farmland Plateau Pylons located in south-eastern corner	Hedgerow loss, some longer views, perception of larger scale	Stream creates gentle fold in the landscape	Ancient landscape, organic field patterns, surviving common at Fordham, former airfield largely returned to agriculture	Intact historic settlement pattern, few modern elements beyond disused airfield and railway	Network of lanes and PROW Several PROW within 2km Preferred route crosses National Cycle Route 13 in vicinity of Fordham	Hamlets and isolated farms Small village of Fordham within 1km of the preferred route Wormingford 2-3km from the route Some isolated dwellings within 1km of the preferred route	No other lines within area	
A5: Colne River Valley Slopes	Some longer views from slopes, complex landform, medium-scale	Tributary valley and main valley, pronounced, complex landform	Some early enclosures, commons, woodland, predominantly agricultural	Intact historic settlement pattern, few modern elements	Proposed route crosses large commons Network of public footpaths and lanes	Sparsely settled but Fordham Hall and Watercress Hall within 1km of the route	No other lines within area	
A4: Colne River Valley Floor	Enclosure from riverside trees, woodlands and valley-sides	Narrow floodplain within small valley	Commons (old unimproved grasslands), agricultural with some woodland	Intact historic settlement pattern, historic watermill, few modern elements	Large common Essex Way	Lightly settled Properties at Fordstreet within 1km	No other lines within area	

Landscape Character Type/ Landscape Character Area	Scale	Landform	Landcover pattern	Settlement pattern and density	Public views	Private views	Cumulative effects	Overall
B4: Great Tey Farmland Plateau	Relatively small fields, enclosure from woodland, medium scale	Plateau	Organic field patterns, small woods, fruit farm, railway	Small villages, isolated hall and farms. Historic settlement pattern still evident, with some C20 addition	Essex Way, public footpaths, byway, lanes and A-road	Small village of Aldham within very close proximity of the proposed route Properties at Sallows Green and outlying farms within 1km of the proposed route Eight Ash Green within 2km of the proposed route	No other lines within area 400kv line to the west of the area	
B2: Easthorpe Farmland Plateau	Plateau is broken up by trees and hedges, few long distance views, medium-scale	Plateau. Roman River creates gentle fold in the landscape	Predominantly agricultural with some settlement Crossed by railways and busy roads	Area to north of Marks Tey is sparsely settled. Road network centred on roman roads Historic settlement pattern still present across much of the area. Modern development centred on the A12 corridor	Essex Way (adjacent to proposed route), PROW, lanes and A-roads, railways	Marks Tey located 1km to the south Scattered properties along A120 within 1km of proposed route	No other lines within area Mast at Great Domsey Farm	
Tendring								
7A: Bromley Heaths Ardleigh	Plain. Enclosure from hedges, trees, and settlements. Medium scale	Plain	Settled landscape Late enclosure of heathland, planned landscape Predominantly arable but some horticulture and sand and gravel pits	Relatively recent settlement pattern Modern elements including greenhouses Small holdings. Ribbon development of C19/C20 origin A12 Railway	Network of roads and public rights of way	Village of Ardleigh within 1km of the route Isolated properties within 1km of the route	Several 132kv lines converging on Lawford substation Mast at Badley Hall Solar farms	
6B: Ardleigh Valley System Ardleigh	Reservoir enclosed by trees immediately under route. Intimate valley to south. Medium-small scale	Minor valley Upper part of the valley flooded by reservoir (submerging the landform)	Reservoir surrounded by trees, organic pattern	Little settlement within valley Reservoir and A120 are modern elements	Lanes and A120 to the south of the proposed route	Limited settlement within valley	132kv line 4km to south but unlikely to be intervisible	
Braintree								
B19: Langley Green Farmland Plateau	Trees and hedges provide some enclosure, some long-distance views, medium-large scale	Part of larger plateau landscape, slight fall towards Blackwater Valley	Arable farmland, historic lanes, mix of irregular enclosures and rectilinear enclosures, few modern land uses	Sparsely settled, dispersed settlement pattern	Essex Way (to north of route), network of lanes and PROW	Sparsely settled, hamlet of Surrex within 1km of the route, some outlying farms within 1 to 2kms of the route	No other lines within area	

Landscape Character Type/ Landscape Character Area	Scale	Landform	Landcover pattern	Settlement pattern and density	Public views	Private views	Cumulative effects	Overall
A9: Blackwater River Valley Constable drawings of Feering	Intimate, small scale	Small valley	Mix of agriculture and woodland Few modern elements beyond water treatment works and small reservoir	Sparsely settled, isolated halls	Valley has limited accessibility Garden at Feeringbury within several hundred meters of the proposed route Proposed route crosses public footpath	Properties at Littlebury within a few hundred meters of the pylons Otherwise not generally settled	No other lines within area	
B18: Silver End Farmland Plateau	Some hedges and small woods. Larger scale	Plateau	Predominantly arable. Large quarry at Silver End Boundary loss within Kelvedon/Coggeshall	Generally sparsely settled. C20 development at Silver End Crossing Temple	Network of PROW. Sparse road network, but including well-used routes	Large village of Silver End within 1km of the proposed route Some isolated farms within 1km of the proposed route	Existing 400kv line 3-4km to the north of the proposed route Solar farm in White Notley	
A10: Brain River Valley	Intimate, small-scale	Small valley Proposed route crosses the valley	Fields and woodland on the valley side Few modern elements beyond railway and water treatment works	Villages and hamlets located within the valley. The settlement pattern relates to the landform Historic settlement pattern intact Halls Roman villa site near White Notley Hall	Essex Way	Small villages and isolated dwellings White Notley within 1km of the proposed route Black Notley within 3km of the proposed route Potential screening from landform	33kv line (wooden poles) Overhead wires associated with railway Existing 400kv line located 2-3km to the north	
B17: Terling Farmland Plateau	Medium-sized fields. Hedges and small woods break up plateau	Gently undulating, smooth landform. Land drained by streams	Predominantly agricultural Deciduous woodlands	Historic settlement pattern generally intact but some expansion and modern road development around Great Leighs Roman Road Halls and moats	Essex Way Network of public rights of way and lanes A road and unclassified roads	Village and some dispersed settlement Village at Great Leighs within 1km of the proposed route Otherwise sparsely settled/more distant views	Proposed route crosses 400kv and 132kv lines. Awkward crossing of existing 400kv line which would require underground cable and sealing end compounds	
Chelmsford								
A6: Upper Chelmer River Valley	Intimate, small-scale	Gentle valley landform	Complex pattern including isolated halls and deer parks as well as more recent uses such as small housing estates and a golf course	Some expansion of villages	Saffron Trail, Essex Way Network of PROW, B-road and C-roads Little Waltham Meadows Nature Reserve Golf course	Villages, hamlets and isolated dwellings Great Waltham and Little Waltham within 1km of route Properties at Minnow End directly underneath proposed route	No other lines within area	
B15: Pleshey Farmland Plateau	Medium-sized fields, some enclosure from trees and hedges. Medium-scale	Plateau Small valley associated with	Arable, small broadleaved woodland at Bushy Wood	Scattered farmsteads Intact	Saffron Trail Dense network of PROW	Lightly settled	No other lines within area	

Landscape Character Type/ Landscape Character Area	Scale	Landform	Landcover pattern	Settlement pattern and density	Public views	Private views	Cumulative effects	Overall
		the Chignall Brook	Irregular field patterns, few modern elements		C-roads and lanes	Hamlet of Broad's Green within a few hundred meters of the proposed route		
B20: Writtle Farmland Plateau	Some boundary loss creates more open, larger-scale landscape	Gently undulating landscape; heights range from 30-73m AOD River Can and Roxwell Brook create gentle folds within the landscape	Arable, grassland, streams and riparian vegetation, college, residential development and gardens Severe boundary loss in places Sand and gravel pit	Historic settlement pattern prevails across much of the area except around Writtle where there has been modern expansion Moats, winding lanes	Centenary Circle within a few hundred meters of the proposed route Network of public rights of way, green lanes and lanes throughout most of the area A-roads and C-roads	Village of Writtle within 1km of the proposed route Isolated dwellings in the countryside within 1km of the proposed route	No other lines within area	
F7: Blackmore Wooded Farmland	Enclosed by woodland, intricate, small-scale landscape but with some longer views to south	Low hill (93m AOD) sloping gently to minor valleys creating complex landform	Semi-natural ancient woodlands associated with Writtle Forest	Historic settlement pattern prevails across much of the area except around Margaretting. A12 present in the south	Centenary Circle within 1km of the route Network of PROW and lanes Hylands and golf course within 1km of route A roads, C-roads and lanes	Sparsely settled Margaretting within 1km of the proposed route Houses on Nathan's Lane in very close proximity to proposed route	No other lines within area	
Brentwood								
F10: Heybridge Wooded Farmland Shared with Chelmsford Ingatestone Stock Mountnessing	Small woods, hedges and riverside trees create some enclosure. Hedgerow loss creates larger-scale landscape.	Encompasses the upper reaches of the Wid Valley. Broad shallow valley rising to low ridge. Heights range from 40-95m AOD	Arable farmland, small woods, stream, winding lanes Ancient & Semi Natural Woodland at Harespring Wood, Wid Wood, Clapgate Wood, Cock Wood Ancient irregular enclosure. C20 boundary loss	Rural Dispersed settlement pattern, moated manors, church-manor complexes Few modern elements beyond water treatment works, railway and existing 132kv line	PROW, lanes and C-roads	Village of Stock is 2-3km from the proposed route Isolated properties close to the proposed route	132kv line converges on proposed route Mast at Temple Wood	
F14: Ingrave and Herongate Wooded Farmland	Hedgerow loss and higher elevation create larger-scale landscape	Part of low hill capped by sands and gravels (Bagshot Formation). Steep scarp slope on southern side	Arable and small deciduous woodlands	Little modern development but some C20 expansion of settlement at Havering's Grove Organic patterns, halls, moats Existing pylons, water treatment works	Dense network of public rights of way and green lanes. Minor roads	Residential properties at Havering's Grove and Blind Lane within 1km of the proposed route Herongate and Ingrave 2-3km from the proposed route	Proposed route runs parallel to existing 132kv line	

Landscape Character Type/ Landscape Character Area	Scale	Landform	Landcover pattern	Settlement pattern and density	Public views	Private views	Cumulative effects	Overall
G1: Horndon Fenland Pylons located at eastern edge of area	Large fields with little enclosure Large-scale landscape	Expansive drained fen Dunton Hill in the east	Co-axial field pattern thought to date from Iron Age/Anglo-Saxon era Golf course Highways land	Some modern development including housing estates and industrial estate at West Horndon, railway and wind turbine on Dunton Hill	PROW, A-roads and railway	Village of West Horndon located 2-3km to the west, otherwise sparsely settled	Proposed route is within 1km of an existing 132kv line. Route runs parallel to existing line Two separate 132kv lines Wind turbine Fundamental change in character as pylons become a dominant element	
Basildon								
11: West Billericay Wooded Farmlands	Small woods and hedges create some enclosure	Broad ridge of higher ground shelving gently to the north Complex landform	Complex landcover pattern including arable farmland and small woods, small common Ancient & Semi Natural Woodland at Frith Wood, Bluntswall Wood and James's Wood Pre-18 th century irregular enclosures, co-axial fields, 20 th century boundary loss Some land use change – golf course, small holdings	Rural Moated manor house Some ribbon development	Queens Park Country Park 1-2km from the route PROW, A road, C road	The urban area of Billericay is within 1km of the proposed route Views from private properties in Havering's Grove	Route would be seen in conjunction with existing 132kv line (in neighbouring character area) Different size towers would create visual confusion	
12: Burstead Sloping Farmland	Expansive views over Thames Basin. Large-scale landscape	Ridgetop and scarp	Predominantly arable, small common, paddocks Severe boundary loss	Historic settlement pattern prevails across much of the area Some 20 th century development in the countryside e.g. ribbon development at Noak Hill Masts (to east)	Public rights of way, including a green lane Equestrian centre A road, C-roads	Occasional outlying farm, housing at Noak Hill within 3km of the proposed route	Proposed route is within 1km of an existing 132kv line (in neighbouring character area). Route runs parallel to existing line Confusion of different sized towers Landscape begins to be dominated by pylons	
13: Dunton Settled Claylands	Open, large-scale landscape	At the edge of large drained fen	Ancient co-axial fields Deterioration of field boundaries Paddocks Land use change	Moated manor, church-manor complex Small holdings and isolated development in the countryside. Extensive development to east Existing 275kv line	B road and C road with pavement. Some PROW	Isolated development in the countryside within 1km of the proposed route Caravan site Hotel, Wedding Venue	Proposed route is within 1km of an existing 132kv line (in neighbouring character area). Route runs parallel to existing line	

Landscape Character Type/ Landscape Character Area	Scale	Landform	Landcover pattern	Settlement pattern and density	Public views	Private views	Cumulative effects	Overall
Thurrock								
B1: Sticking Hill Rolling Farmland/ Wooded Hills	Open, large-scale landscape	Skirts edge of Langdon Hills Low ridge	Co-axial field pattern thought to date from Iron Age/Anglo-Saxon era Pattern is still legible with some later land use change also evident Highways land	Some C20 expansion of Horndon and Orsett Pylons	Nature Discovery Park Some PROW Golf course Road network	Villages, otherwise sparsely settled Horndon on the Hill is within 1km of the proposed route Orsett is within 2km of the proposed route	Proposed route crosses and then runs parallel to existing 132v line Solar farm and substation	
D4: White Crofts/ Orsett Heath Urban Fringe	Fragmented landscape, few long distance views	Low lying, artificially modified	Considerable land use change Highways land	Dominated by A13 C20 at Southfields	Golf course, some PROW, road network including well-used roads	Houses at Southfields within 1km of the route	Two 400kv lines in close proximity	
D5: Linford/ Buckingham Hill Urban Fringe	Fragmented landscape, few long distance views	Low lying, disturbed landform	Quarry, disused pit, former landfill site, golf course, housing estates	Modern forms of development	Some PROW including Byway Golf course	Linford within 1km of proposed route (but may not have views), otherwise sparsely settled	Two 132kv lines and one 400kv line in close proximity Already dominated by pylons	
D6: Chadwell Escarpment Urban Fringe	Long views, part of large scale landscape	Small escarpment	Grassland, paddocks, gardens, small disused pits, isolated development	Historic lanes, some historic settlement with isolated 20 th century development in the countryside	Minor roads, railway	Isolated dwelling in the countryside	Existing lines converging on Tilbury substation	
D7: West Tilbury Urban Fringe	Little enclosure, large scale	Low lying, rising gently to the west	Large arable fields, housing estate, industrial estate, railway, sand and gravel pit	Strong influence from pylons (forming key characteristic of the landscape)	C roads, lanes and some public rights of way	East Tilbury within close proximity	Existing lines converging on Tilbury substation Solar farm, mast	
C5: Tilbury Marshes	No enclosure, large scale	Plain	Arable, mineral workings, post-industrial, port, substation, sewage works	Strong influence from pylons (forming key characteristic of the landscape) Modern development	England Coast Path Registered Common Land C-road Few public footpaths on marshes	No settlement within marshes	New cable sealing end compound adding to existing substation infrastructure. Already a highly modified landscape	

5 Summary of findings of susceptibility to change analysis

5.1 Landscape parcels within the Norwich to Tilbury route corridor with the highest susceptibility to change

5.1.1 The HLLSA found that the following landscape parcels were likely to have highest susceptibility to change from the proposed electrical transmission line. As such, it is recommended that further detailed study and analysis is undertaken to ascertain whether any development of the type proposed is even appropriate within that land parcel and, if it is considered to be so, that the scheme design is fine tuned in terms of whether (in descending order of application):

- undergrounding of cables is an appropriate treatment
- the proposed alignment of cables and pylons is appropriate in terms of minimising effects on the character of the landscape
- opportunities to provide mitigation measures to integrate the development into the landscape have been maximised; this might include advanced planting or other screening techniques.

5.1.2 The land parcels with the highest susceptibility to change are illustrated at Appendix 01 on the Susceptibility Map Set.

Braintree District, LCA A10: Brain River Valley

5.1.3 Describes the narrow valley of the River Brain, which flows south-eastwards from Braintree to Witham. The preferred route cuts across the valley from east to west.

Suffolk County, LT 18: Rolling valley farmlands

5.1.4 Represented within southern Suffolk within the Gipping, Stour and Brett Valleys, and also within the smaller tributary valleys which are associated with these rivers. The route crosses the *Rolling valley farmlands* in several places including within the Dedham Vale.

Suffolk County, LT 19: Rolling valley farmlands and furze

5.1.5 Found in the Fynn Valley, the upper Gipping Valley, in discontinuous parts of the Waveney Valley and in the Hundred River valley. The type is distinguished by light soils which support remnant heathland. The preferred route crosses the *Rolling valley farmlands and furze* in the Waveney Valley and the Gipping Valley.

5.1.6 High susceptibility to change was also found to be likely in the following landscape parcels, and a similar level of further detailed analysis and design is recommended as that noted above.

South Norfolk District, LCA B1: Tas Tributary Farmland

5.1.7 This character area covers an extensive area of gently undulating landscape drained by the River Tas and its tributaries. The character area stretches southwards from the Norwich Southern Bypass all the way to the sources of the various streams on the clayland plateau.

South Norfolk District, LCA A5: Waveney Rural River Valley

- 5.1.8 Includes the gently shelving slopes on the northern side of the Waveney Valley and the part of the floodplain which falls within South Norfolk District. The town of Diss is located within this character area.

Suffolk County, LT 31 - Wooded Valley Meadowlands and Fens

- 5.1.9 The Landscape Type describes the valley meadowlands and fens which are found within some of the larger river valleys, including the Waveney Valley. The meadowlands and fens tend to be found within a narrow band in the floodplain and form part of a wider valley landscapes. The character type is defined chiefly by the distinctive land uses which it encompasses, and the vegetation communities it contains.

Suffolk County, LT 17 - Rolling Valley Claylands

- 5.1.10 These landscapes are found in the upper reaches of many of the Suffolk river valleys. The landscape type includes the Rattlesden River and the other western tributaries of the River Gipping upstream of Needham Market. The landscapes include complex valley topography.

Colchester Borough, LCA A7: Stour River Valley Slopes

- 5.1.11 Found on the southern side of the Dedham Vale and included within the Dedham Vale National Landscape. Small tributary valleys are identified as sub-types.

Colchester Borough, LCA A4: Colne River Valley Floor

- 5.1.12 Descriptive of the narrow floodplain of the Colne Valley, upstream of Colchester. Generally unsettled but with some historic bridges and watermills.

Braintree District, LCA B17: Terling Farmland Plateau

- 5.1.13 Expanse of slightly elevated countryside between the Brain Valley and the Chelmer Valley. Pre-C18 enclosures, small ancient woodlands and winding lanes. The River Ter creates some topographical interest in the centre of the area.

Chelmsford Borough, LCA F7: Blackmore Wooded Farmland

- 5.1.14 Slightly elevated countryside to the south-east of Chelmsford, including ancient woodlands within the former Writtle Forest and Hylands Park.

Brentwood Borough, LCA F14: Ingrave and Herongate Wooded Farmland

- 5.1.15 Elevated, sparsely-settled countryside to the south-east of Brentwood. The land falls steeply to the south of Billericay Road towards Bulphan Fen and the wider Thames Basin.

-
- 5.1.16 The next highest susceptibility to change was recorded for the following landscape parcels:

Suffolk County, LT 10 - Plateau Claylands

- 5.1.17 Comprising a larger area of countryside to the north of the River Gipping. The landscape has an ancient field pattern including co-axial fields and some former open fields on the better drained land. The poorly-drained areas of the clay plateau are covered with numerous extant or former greens.

Suffolk County, LT 26 - Valley Meadowlands

- 5.1.18 Found mainly within south and south-east Suffolk (within the valley floors). The preferred route crosses this type as it occurs within the Gipping Valley.

Colchester Borough, LCA A5: Colne River Valley Slopes

- 5.1.19 Relating to the Colne Valley (but not including the floodplain). The character area includes an extensive area of common land at Fordham which would be crossed by the preferred route.

Chelmsford Borough, LCA A6: Upper Chelmer River Valley

- 5.1.20 Extending upstream from Chelmsford to the sources of the river. The preferred route crosses the valley in the vicinity of Little Waltham / Great Waltham.

Basildon Borough, LCA 11: West Billericay Wooded Farmlands

- 5.1.21 Part of a ridge of higher ground which extends from Brentwood through Billericay towards Stock. The area retains a rural settlement pattern. The preferred route touches the western edge of the character area.

South Norfolk District, LCA B4: Waveney Tributary Farmland

- 5.1.22 A broad area of gently undulating landscape drained by tributary streams. The area retains a rural character.

Colchester Borough, LCA A8: Stour River Valley Floor

- 5.1.23 Comprising the valley floor landscapes within the Dedham Vale National Landscape.

Braintree Borough, LCA A9: Blackwater River Valley

- 5.1.24 Describing the gentle landform of the Blackwater Valley which includes a narrow floodplain. Plantations of cricket bat willow are a common feature within the valley. The preferred route crosses the Blackwater Valley near Ferringbury Manor Gardens.

Brentwood Borough, LCA F10: Heybridge Wooded Farmland

- 5.1.25 The character area encompasses a ridge of higher ground which includes the village of Stock as well as the upper reaches of Wid Valley, which includes Ingatestone Hall.

South Norfolk District, LCA D1: Wymondham Settled Plateau Farmland

- 5.1.26 An extensive plateau landscape to the north-west of the Tas Valley. The character area is predominantly rural but also includes the larger villages of Mulbarton and Hethersett and the town of Wymondham. The preferred route crosses the south-eastern edge of the character area.

South Norfolk District, LCA E1: Ashwellthorpe Plateau Farmland

- 5.1.27 An area of small villages and hamlets with extensive areas of farmland. The area includes some late enclosure of former greens.

Suffolk County, LT 3 - Ancient Plateau Claylands

- 5.1.28 The type relates to the northern part of Suffolk, where it is considered that the ancient landscape pattern is most evident. The landscape type includes surviving greens and a characteristic dispersed

settlement pattern. The preferred route veers around Mellis Common and would have quite an extensive impact on this landscape type.

Basildon Borough, LCA 12: Burstead Sloping Farmland

- 5.1.29 Encompassing an area of gently undulating higher ground which falls away steeply to the south of Little Burstead towards the River Crouch. Forming part of a large area of ancient planned landscape with co-axial field boundaries. The preferred route crosses the scarp slope within this area.

5.2 Sections of the Norwich to Tilbury project with the most susceptibility to change

- 5.2.1 The analysis concluded that the most sensitive sections of the route would be the Dedham Vale (which is already proposed for undergrounding) and the Waveney Valley (which is being considered for undergrounding). The findings of this study suggest undergrounding would be appropriate in both cases. The study also identified the following sensitive sections of route where further study and possible undergrounding would be merited.
- 5.2.2 Norwich Main substation to Tibenham – this section of the route lies on the western edge of the Tas Valley. It crosses a rural landscape with subtle, intricate topography. The preferred route is open to public and private views and there would also be cumulative effects.
- 5.2.3 Winfarthing to Bressingham – this section of route has a higher sensitivity based on the rural nature of the landscape, the subtle topography and the potential for cumulative effects.
- 5.2.4 The Waveney Valley including the tributary valleys – this section of route is highly sensitive across several different indicators. The valley landform is sensitive to change, the preferred route is close to residential receptors in Diss and Roydon, and the Angles Way would also be affected. Undergrounding this section of route would potentially benefit large numbers of people in the locality.
- 5.2.5 Mellis to Stowupland - this section of route crosses ancient countryside within the Suffolk claylands which is considered to have a higher sensitivity to change. The area has a rural character and there are potential cumulative effects.
- 5.2.6 Gipping Valley to Belstead Brook – the route crosses three river valleys within this section and the whole segment is considered to have a higher sensitivity. South Suffolk features an undulating and intimate landscape which would be overwhelmed by pylons of this size. Undergrounding would potentially benefit large numbers of people in Needham Market and Ipswich.
- 5.2.7 Colne Valley – the study identified higher sensitivity within the Colne Valley based on the rural character of the much of the valley, the presence of commons, and the sensitivity of the topography. The preferred route cuts across the valley.
- 5.2.8 Blackwater River Valley – the narrow Blackwater Valley was identified as having higher sensitivity. The route would cut across the valley in the vicinity of the gardens at Feeringbury Manor.
- 5.2.9 The Brain Valley to the Chelmer Valley – the narrow Brain Valley was found to be sensitive across all the indicators. The route would cut across the valley near White Notley. The preferred route would also cut across the Chelmer Valley between Great Waltham and Little Waltham. In between the route crosses an area of gently-undulating ancient countryside which has a complex landscape

pattern. Undergrounding would potentially benefit residents in White Notley, Great Waltham and Little Waltham.

- 5.2.10 Blackmore Wooded Farmland – this area contains a number of ancient woodlands on a low hill which are the surviving portions of a medieval forest.
- 5.2.11 Countryside between Shenfield and Billericay – this whole area has been identified as having higher sensitivity, with the ridge at the southern edge of the area being particularly sensitive to this type of development. Undergrounding would potentially benefit large numbers of people in Brentwood, Billericay and Havering’s Grove. Notwithstanding the above analysis, as noted at Section 4, it is very important to remember that that landscape effects must be considered as a spectrum. There is no defined threshold that a development must reach in order to be considered acceptable. The HLLSA is a first tranche sieving exercise to identify the landscapes with the very highest susceptibility to change. Other landscapes within the study area are also likely to experience adverse effects from the introduction of pylons, some substantial, and rigours of good analysis and design in terms of alternative options, variations to layout and alignment, and best use of mitigation measures must be applied to these landscape parcels as well to ensure the development is assimilated into the landscape in an acceptable manner.
- 5.2.12 Further, the landscape parcels considered in the susceptibility appraisal are necessarily broad and in places extensive. As such, it is quite likely that there are variations in susceptibility within a parcel itself, with some areas of the parcel being more capable of accommodating the proposed development than others. Such areas should be identified and addressed in the emerging design.

6 Initial overview of Landscape and Visual aspects of the PEIR

- 6.1.1 As part of this pre-application consultation process, National Grid has prepared a Preliminary Environmental Information Report, dated April 2024. The purpose of the report is to identify likely significant effects of the Norwich to Tilbury project and so inform consultation, allowing stakeholders to have an informed understanding of the likely effects of the project.
- 6.1.2 As such, it is very important that the PEIR presents stakeholders with a full and balanced description of the effects of the whole project.
- 6.1.3 The PEIR has been prepared as part of the wider Environmental Impact Assessment (EIA) process, at a point in time when the design is still being refined. Identified significant effects should be revisited as part of this exercise in order that suitable and appropriate design measures (which might include undergrounding or wholesale realignment) and mitigation measures can be proposed to negate adverse effects or to reduce them to within acceptable thresholds.
- 6.1.4 The full findings of the EIA process will be presented in the form of an Environmental Statement (ES), which will be submitted with the application for the DCO.
- 6.1.5 Landscape and visual aspects of the project are considered at Chapter 13 of the PEIR.
- 6.1.6 Appendix 13.1 of the PEIR - Landscape Baseline and Assessment - provides an overview of landscape receptors within the study area.

6.1.7 For each receptor, an assessment has been made to demonstrate “*the extent and level of effects likely to occur because of the Project*”.

6.2 Landscape character

6.2.1 The landscape character of the study area is described, in outline, at the national, regional and district/county scale. It is the district/county scale which is the most useful since this provides the most detail.

6.2.2 The study area for landscape character is 3km either side of the cable run (and 1km for the undergrounded sections). The ZTV [PEIR Volume II Figure 13.8.1 to 13.8.11) demonstrates that the visibility of the proposed development, even allowing for screening elements such as topography and key blocks of vegetation, extends well beyond 3km.

6.2.3 Whilst the presence of the proposed development would reduce with distance, the *Visual presence of pylons in the landscape* diagrams at Appendix 2 clearly demonstrate that at 3km distance, the pylons would be perceived as 9mm high in a view.

6.2.4 As such, the proposed development has the potential to influence the character of landscapes well beyond the study area, and the assessment should be extended to encompass those landscape character units beyond the study area that have the potential to be influenced by the proposed development, e.g. those on higher ground such as D4 - Tiptree Ridge (Essex).

6.2.5 A description of the key characteristics of each of the landscape units is provided, but no assessment has been undertaken to determine the sensitivity of the receptor (either its value or its susceptibility to change). Without this information it is not clear how the significance of effect can be calculated.

6.2.6 A preliminary assessment of the effect of the proposed development on each of district/county level landscape units has been undertaken for both the construction phase and the operational phase, with results presented in a tabulated form in Table A13.1.3.

6.2.7 The Landscape Partnership makes the following initial observations regarding the preliminary assessment, and based on the information provided within the PEIR.

- Given the length of the route corridor, the number of landscape units to be considered is large. The analysis is inevitably broad and in many places the judgements are generic. More, specific, detail will be required at the ES stage for the impacts of the development to be fully understood by those determining the DCO application.
- For many of the landscape units the severity of the impact on landscape character is acknowledged, almost as if it were an inevitable outcome. For example, a judgement of “*The effect on the LCA would be significant (negative) within approximately 1 km of the Project, and not significant elsewhere in the LCA*” is repeated for 11 out of the 70 different landscape units. The frequency of the use of this judgement might be considered to have the effect of underplaying its consequence to the casual reader. Similarly, there is a sense that a 2km (1km plus 1km) corridor along the route of Norwich to Tilbury somehow constitutes only a small area of harm. A judgement of “*The effect on the LCA would be significant (negative) within approximately 1 km of the Project, and is less likely to be significant elsewhere in the LCA*” is

repeated for 21 out of the 70 different landscape units, leaving the possibility of significant effects beyond 1 km very much open.

- It is stated for most character areas that beyond 1km *“layers of vegetation including woodland and field boundary trees would reduce intervisibility with the wider LCA.”* Intervisibility may be reduced, but this still leaves considerable scope for visibility beyond this distance, as indicated by the ZTV. It is acknowledged elsewhere in the PEIR that vegetation does not necessarily prevent longer views: *“Although a well-wooded landscape, from the elevated plateau there are frequent longer views”* (Volume I Para 13.6.5). The discussion of significant effects is therefore too generalised.
- Despite the judgement of significant negative harm, there is very limited or no discussion of what mitigation measures may or may not be appropriate. It is understood that mitigating the impacts caused by the introduction of pylons and overhead wires would be hard or not possible; however, there could be measures to reduce adverse effects during the construction period.
- There is no discussion as to whether additional areas (beyond the Dedham Vale National Landscape and the Waveney Valley) are sufficiently sensitive to change that undergrounding the route would be appropriate. Likewise, the assessment is silent on whether any sections of the route have been considered (and rejected) for such treatment and for what reasons.
- For the construction phase, reference is made to the need to remove various landscape elements in order to accommodate the new elements and facilitate the proposed works, e.g. sections of hedge, areas of woodland. Little information is provided as to whether such features would be reinstated or restored and/or the length of time required to make good the damage.
- The presence of existing wirescapes, etc. is taken to lower the sensitivity of a landscape, for example of LCA C1: Yare Tributary Farmland with Parkland (South Norfolk): *“The Project would be introduced into a landscape which is currently influenced by other man-made features including existing transmission and distribution infrastructure, small settlements, and major transportation corridors”* rather than consideration being given to the (negative) cumulative effects.
- The assessment within Essex includes a mix of county-level and district-level LCAs, through district level assessments are available throughout the county.

6.3 Landscape-related designations

- 6.3.1 The preliminary assessment makes reference to effects on the landscape of the Dedham Vale National Landscape (AONB) but does not make reference to the importance attributed to its setting.
- 6.3.2 The Dedham Vale National Landscape Partnership has prepared a Position Statement, dated January 2024, to provide guidance to local planning authorities, landowners and other interested parties when considering the impact of development and land management proposals which lie outside the AONB but within its ‘setting’.

6.3.3 The National Landscape Partnership considers the setting to the AONB to be “*the area within which development and land management proposals, by virtue of their nature, design, scale, siting, materials and colour have the potential to result in substantial impacts, positive or negative, on the natural beauty and special qualities of the AONB.*”

6.3.4 The Statement notes the need to consider the impact of proposals within the setting of an AONB is “*enshrined in the National Planning Policy Framework, Planning Practice Guidance, National Policy Statements for Energy, the Countryside and Rights of Way Act 2000 and in adopted Local Plans covering the Dedham Vale AONB*”.

6.3.5 The statutory Dedham Vale AONB and Stour Valley Management Plans recognise that “*nationally designated landscapes sit within a wider countryside setting, which not only enhances the value of these landscapes and the experience of being in them, but also delivers wildlife and access benefits*”.

6.3.6 Appendices 1 and 2 of the Statement summarises some of the policy context.

Planning Practice Guidance

6.3.7 Planning Practice Guidance notes:

The Planning Practice Guidance provides more detail about development within an AONB setting. It confirms that the statutory duty applies to proposals located outside of AONB boundaries, as they might have an impact on their setting or protection.

6.3.8 It continues:

The PPG goes on to state that: Land within the setting of these areas often makes an important contribution to maintaining their natural beauty, and where poorly located or designed development can do significant harm. This is especially the case where long views from or to the designated landscape are identified as important, or where the landscape character of land within and adjoining the designated area is complementary. Development within the settings of these areas will therefore need sensitive handling that takes these potential impacts into account.

National Policy Statements for Energy - Developments outside nationally designated areas

Overarching National Policy Statement for Energy (EN-1)

6.3.9 §5.10.8 of EN1 states:

The duty to have regard to the purposes of nationally designated areas also applies when considering applications for projects outside the boundaries of these areas which may have impacts within them. The aim should be to avoid harming the purposes of designation or to minimise adverse impacts on designated areas, and such projects should be designed sensitively given the various siting, operational, and other relevant constraints.’

National Policy Statement for Electricity Networks Infrastructure (EN5)

6.3.10 §2.11.4 of EN5 notes that there is “*a strong presumption in favour of undergrounding new overhead transmission lines, within nationally designated landscapes i.e. National Park, Broads, or Areas of Outstanding Natural Beauty*”.

6.3.11 §2.11.5 of EN5 states “Away from these protected landscapes, and where there is a high potential for widespread and significant landscape and visual impacts, the Secretary of State should also consider whether undergrounding may be appropriate, now on a case by-case basis, weighing the considerations outlined above”.

6.3.12 At Appendix 3, the Position Statement notes:

The setting of the Dedham Vale AONB has no defined geographical borders. The location, design, scale, materials and colour of a proposed development or land management activity will determine how it impacts the natural beauty and special qualities of the AONB.

A very large development may have an impact even if a considerable distance from the AONB boundary. Adverse impacts might not be visual. The special qualities of the Dedham Vale AONB include tranquillity. A development which is noisy may well adversely impact tranquillity even if not visible from the AONB.

6.3.13 Examples of adverse impacts will include:

- *Blocking or the interference of views out of the AONB particularly from public viewpoints*
- *Blocking or the interference of views of the AONB from public viewpoints outside the AONB*
- *Loss of tranquillity through the introduction of lighting, noise, or traffic movement*
- *An abrupt change to landscape character*
- *Loss of biodiversity, particularly species of importance within the AONB*
- *Loss of features of historic interest, particularly if these are contiguous with features within the AONB*

6.4 Visual assessment

6.4.1 Appendix 13.2 – Visual Baseline and Assessment, provides an overview of visual receptors within the study area.

6.4.2 Appendix 13.2 describes the “extent of theoretical visibility of the Project within the study area and provides an assessment of effects on visual receptors (people) during construction and operation / maintenance”. It also describes the representative viewpoints that have been used to inform the assessment of effects on visual receptors, including the reasons for their selection.

6.4.3 The first section describes the theoretical visibility of the project, with reference to the Zone of Theoretical (ZTV). As noted above, the ZTV demonstrates that the proposed development would have an almost blanket visibility within the 3km study area. The visibility also extends well beyond 3km in many places.

6.4.4 The Landscape Partnership makes the following initial observations regarding the preliminary assessment, and based on the information provided within the PEIR.

- Despite the acknowledged extensive visibility of the proposed development, a total of just 89 viewpoints have been selected to represent the experience of receptors (people) who would

see the view. This equates to one representative viewpoint per 2km for the 184 km route. This is wholly inadequate to illustrate the likely effects of the proposed development.

- No assessment has been undertaken to determine the sensitivity of the receptor. Without this information it is not clear how the significance of effect has been calculated.
- For many of the representative viewpoints the severity of the impact on the view is acknowledged, almost as if it were an inevitable outcome. For example, the statement that “*Effects on visual receptors would likely be significant (negative) within approximately 1 km of the Project*” is repeated for many of the project sections. The frequency of the use of this judgement might be considered to have the effect of underplaying its consequence to the casual reader. Similarly, there is a sense that a 2km (1km plus 1km) corridor along the route of Norwich to Tilbury somehow constitutes only a small area of harm. For other sections the significant effects are considered to extend to 1.5km, which equates to a 3km wide corridor.
- Despite the judgement of significant negative harm, there is very limited or no discussion of what mitigation measures may or may not be appropriate. It is understood that mitigating the impacts caused by the introduction of pylons and overhead wires would be hard or not possible; however, there could be measures to reduce adverse effects during the construction period.

6.4.5 The *Visual presence of pylons in the landscape* diagrams at Appendix 02 show that the apparent height of the pylons would be 27mm at 1km and 13mm at 2km. It is not explained clearly why 1.5km has been chosen as the threshold for significant effects in the PEIR, and without explanation it appears to be arbitrary.

Residential Visual Amenity

6.4.6 The planning system is designed to act in the public interest when making planning decisions. Nevertheless, effects on private interests are considered by planners in the *planning balance*. This includes weighing effects on Residential Amenity.

6.4.7 Residential Amenity comprises a range of visual, aural, olfactory and other sensory components. Development can cause effects on one or more components of residential amenity, for example effects of noise, dust, access to daylight, vibration, shadow flicker, outlook and visual amenity.

6.4.8 In this context, Residential Visual Amenity means: “*the overall quality, experience and nature of views and outlook available to occupants of residential properties, including views from gardens and domestic curtilage*”. Residential Visual Amenity is one component of residential amenity.

6.4.9 It is common knowledge that no one has “*a right to a view.*” This includes situations where a residential property’s outlook / visual amenity is judged to be ‘significantly’ affected by a proposed development, a matter which has been confirmed in a number of appeal / public inquiry decisions.

6.4.10 The assessment of the effects on Residential Visual Amenity is undertaken in accordance with the relevant guidance published by the Landscape Institute (*Technical Guidance Note 2/19 - Residential Visual Amenity Assessment (RVAA)*). In this process the assessment of magnitude and significance is followed by a judgement on whether the Residential Visual Amenity threshold has been reached.

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- 6.4.11 It is important to note that Judgements formed in respect of Residential Visual Amenity should not be confused with the judgement regarding residential amenity, because the latter is a planning matter. Nor should the judgement therefore be seen as a ‘test’ with a simple pass or fail. The final judgement regarding effect on Residential Amenity (which to greater or lesser extent may be informed by the judgement in respect of Residential Visual Amenity) is a planning matter and requires weighing all factors and likely effects (positive as well as negative) in the planning balance.
- 6.4.12 The threshold for effects on Residential Visual Amenity is quite high and has not been formally defined. However, examples which have crossed the threshold include:
- ever-present and unavoidable feature which will significantly detract from the quality of the views, or
 - dominating and encroaching feature that would become the main focus of views of the residents going about their daily lives.
- 6.4.13 Given the close proximity of various settlements to the proposed development (for example Tacolneston, Gislingham, Aldham, and Little Waltham) it is likely that at least some viewpoints could cross the residential visual amenity threshold.
- 6.4.14 Such matters are not considered in the PEIR and will be reserved for the full LVIA and ES. A detailed assessment could identify a need for substantial amendments to the scheme and should be considered earlier in the design process.

Appendix Diii

Norwich to Tilbury

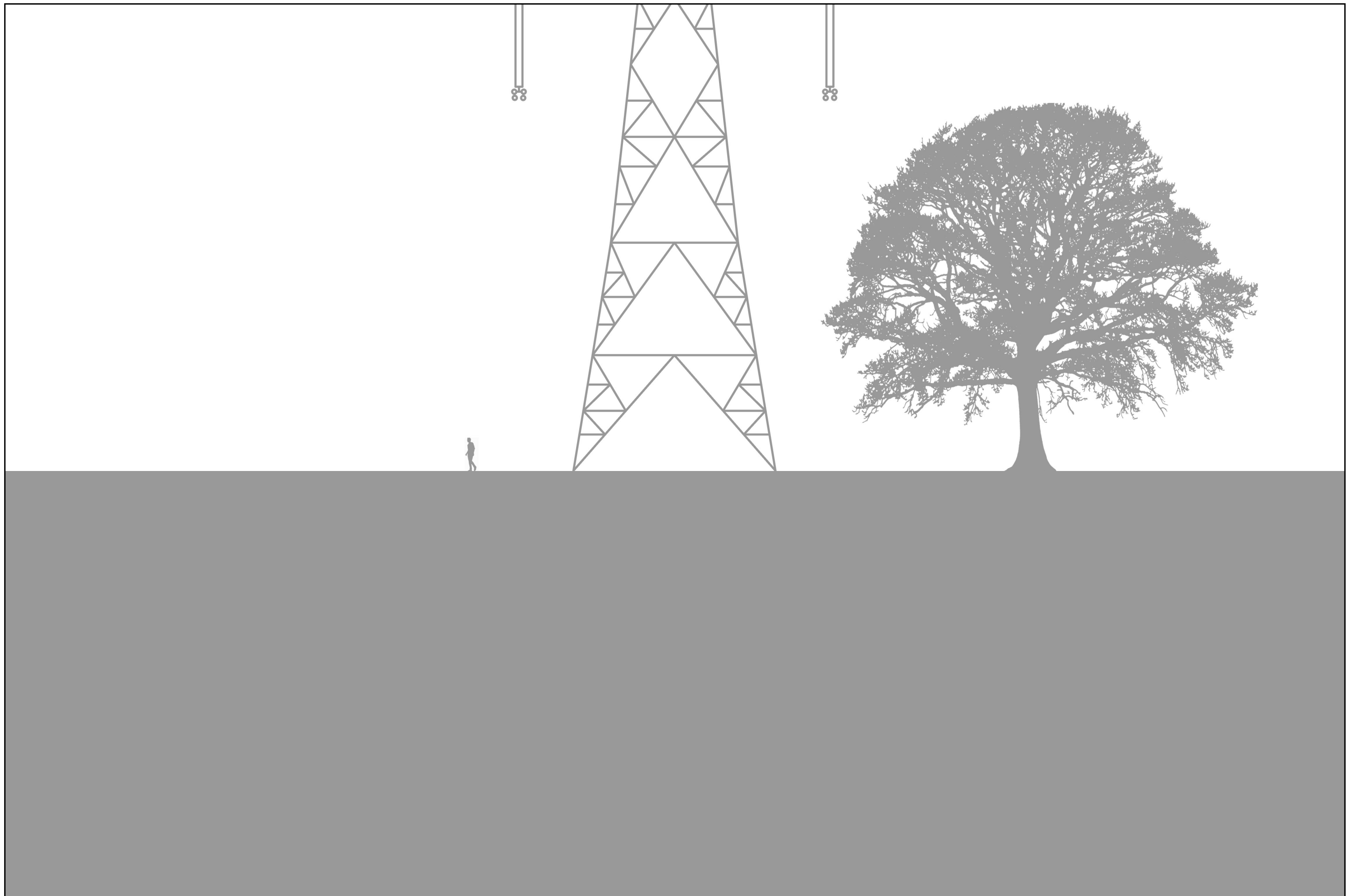
High-Level Landscape Susceptibility Appraisal

for

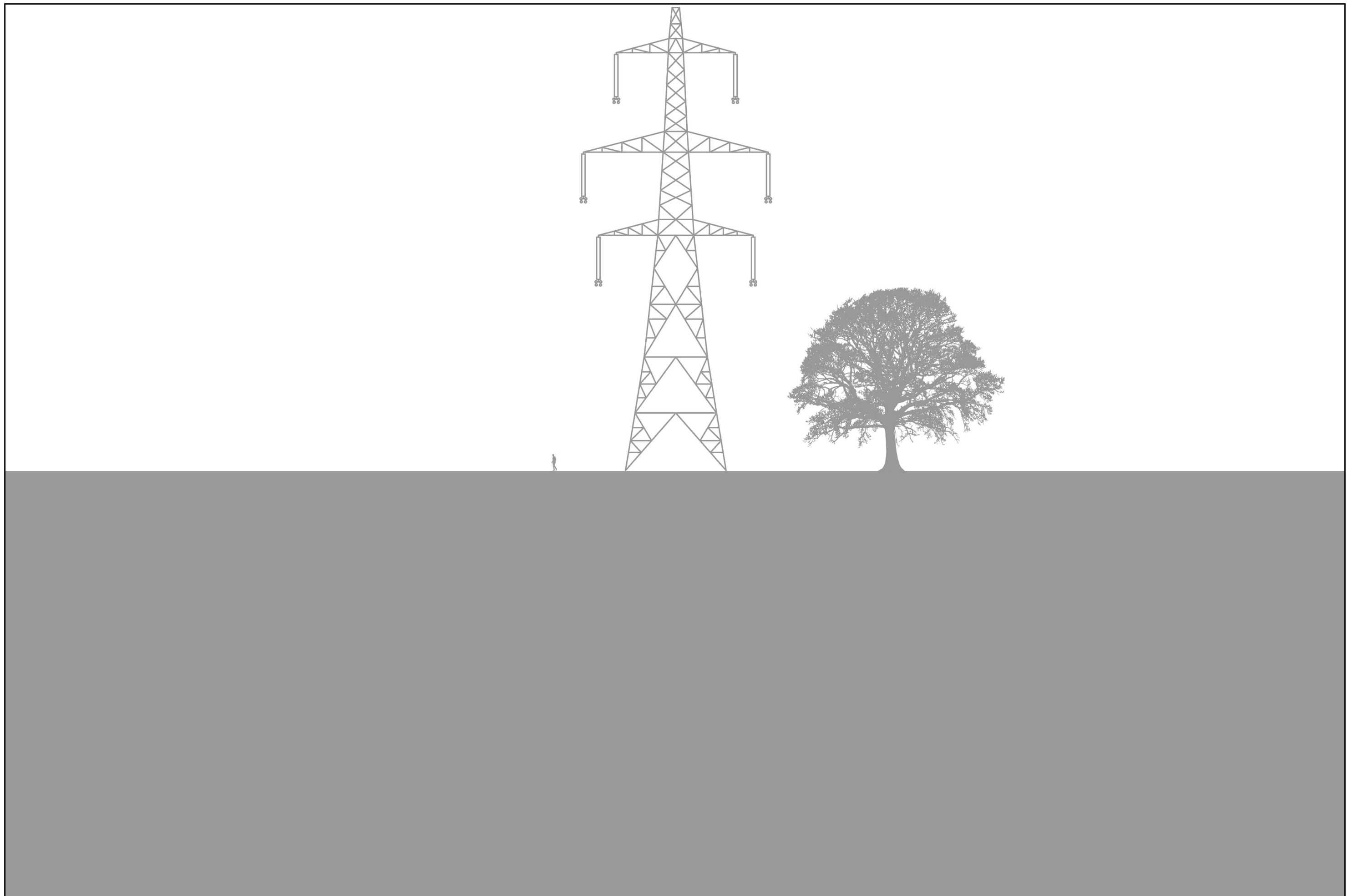
Essex Suffolk Norfolk Pylons action group

Public Consultation | July 2024

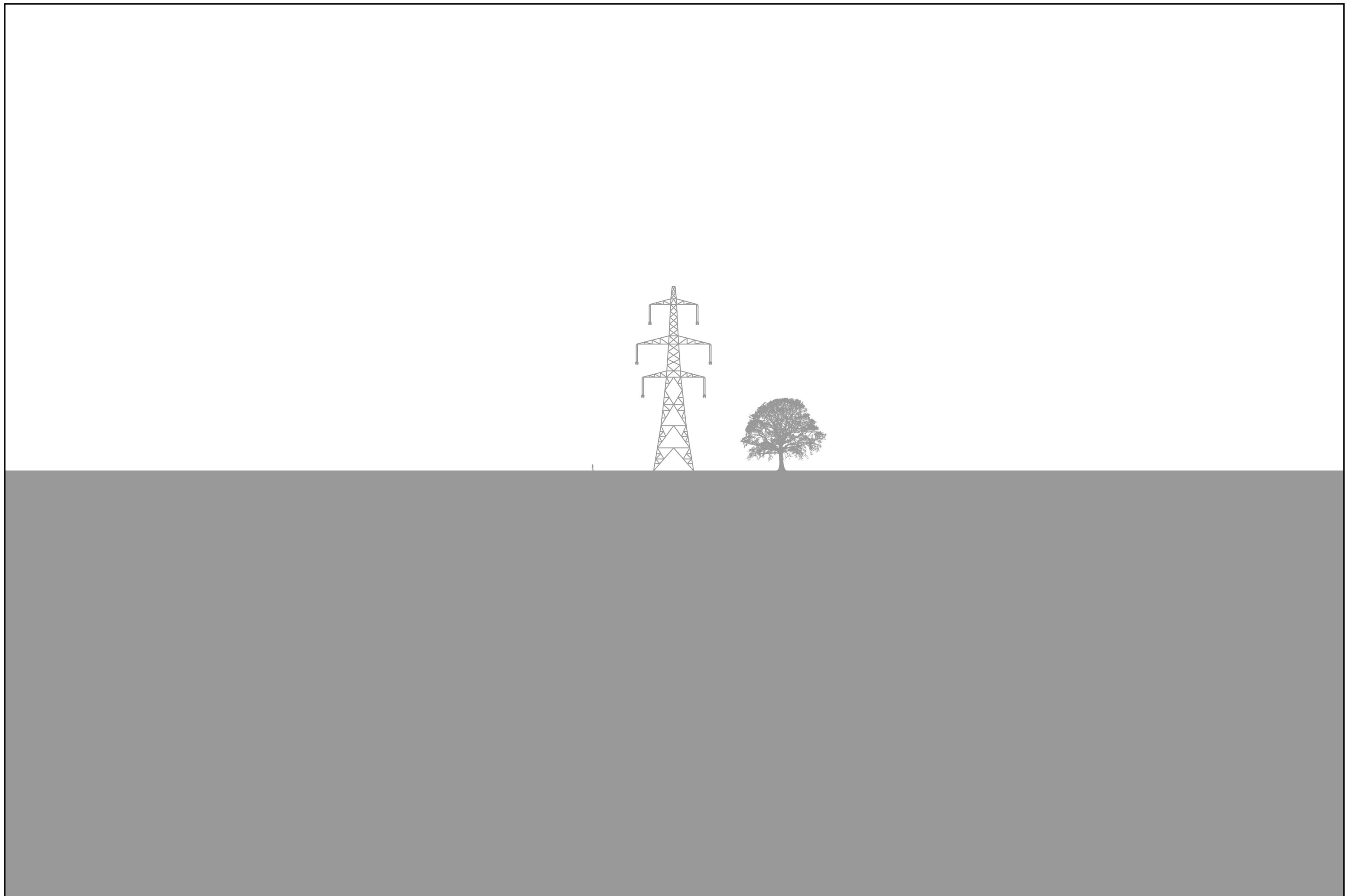
Appendix 02: Visual presence of pylons in the landscape,
when viewed at various distances



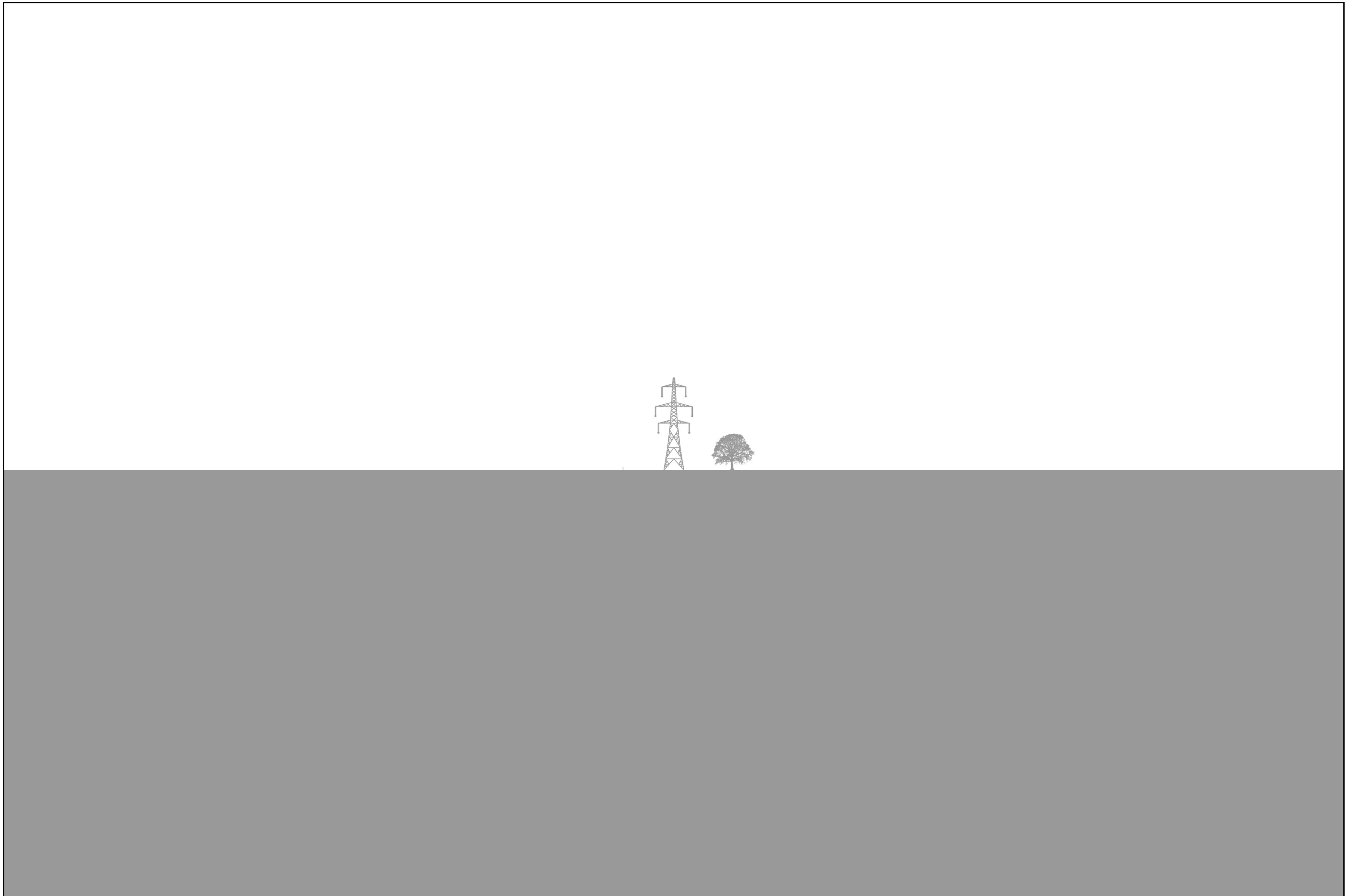
**Pylon as appreciated when viewed at 100m distance
(50m high pylon, 20m high tree, 1.8m high person)**



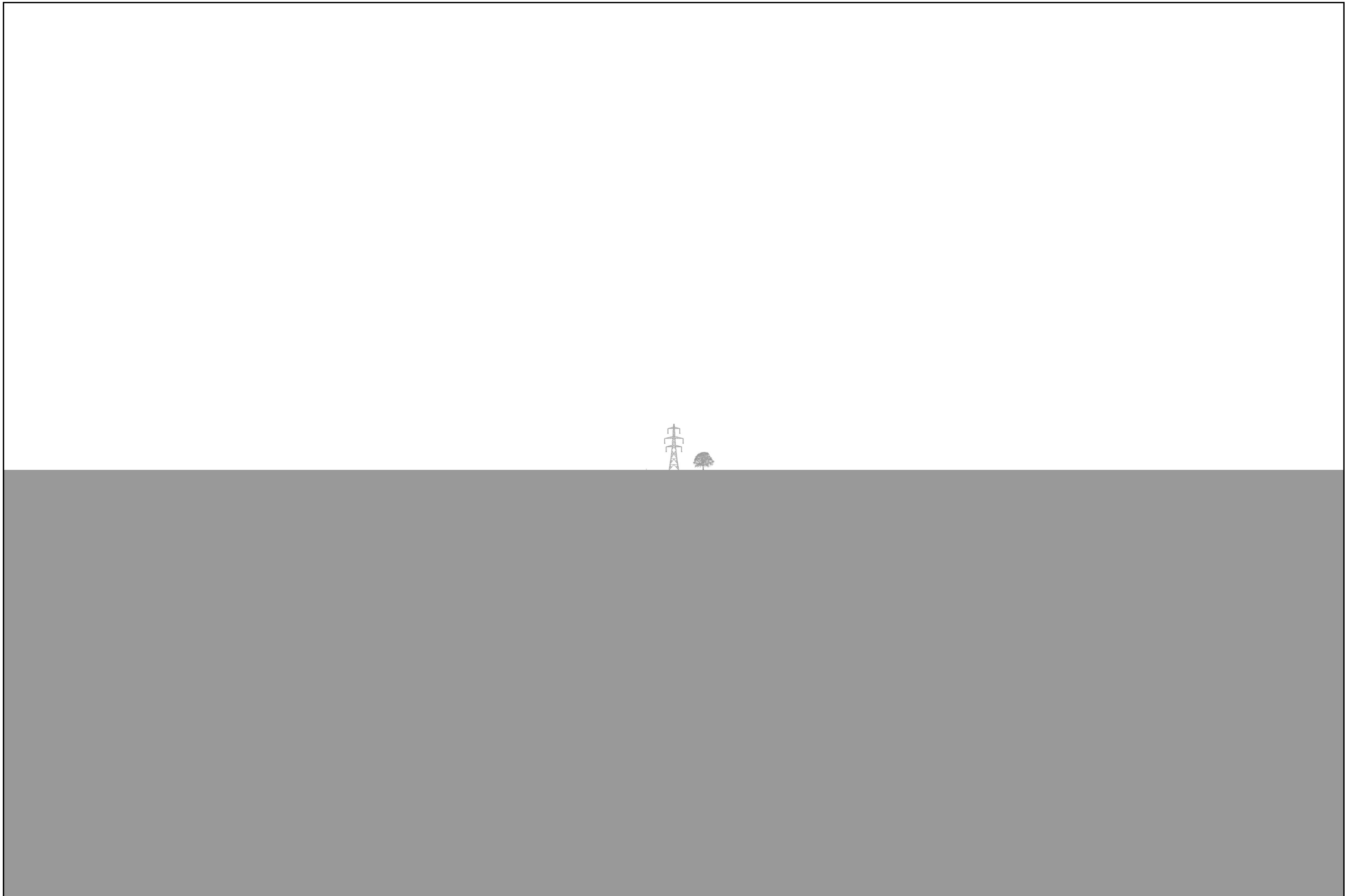
**Pylon as appreciated when viewed at 200m distance
(50m high pylon, 20m high tree, 1.8m high person)**



**Pylon as appreciated when viewed at 500m distance
(50m high pylon, 20m high tree, 1.8m high person)**



**Pylon as appreciated when viewed at 1km distance
(50m high pylon, 20m high tree, 1.8m high person)**



Pylon as appreciated when viewed at 2km distance
(50m high pylon, 20m high tree, 1.8m high person)



**Pylon as appreciated when viewed at 3km distance
(50m high pylon, 20m high tree, 1.8m high person)**



Pylon as appreciated when viewed at 4km distance
(50m high pylon, 20m high tree, 1.8m high person)



Pylon as appreciated when viewed at 5km distance
(50m high pylon, 20m high tree, 1.8m high person)



**Pylon as appreciated when viewed at 6km distance
(50m high pylon, 20m high tree, 1.8m high person)**

Appendix E

Colne Valley: Fordham & Aldham

'Comments on Document: 8.5.8 Applicants Response to Issue Specific Hearing 2 Action Points'

Response from Wakes Colne Parish Council – 5th June 2026

Wakes Colne Council does not support the applicant's proposal to move the pylon route westwards across the Colne Valley. In our view, this alternative alignment offers no significant advantage over the route currently proposed and would simply transfer adverse impacts from one part of the valley to another.

There is no clear evidence that a western route would reduce landscape, visual, environmental or heritage impacts. On the contrary, it would introduce a new range of concerns while failing to address the fundamental issue of placing large-scale overhead transmission infrastructure within the Colne Valley. The route would be longer, requiring additional infrastructure and associated works, increasing both environmental disturbance and overall harm.

The western alignment would also affect sensitive heritage assets, including the setting of the Chappel Viaduct and other historic features that contribute to the special character of the valley. The open nature of the landscape in this area would mean that pylons remain highly visible across a wide area, creating landscape and visual effects comparable to those associated with the applicant's preferred route.

The Parish Council is not persuaded by suggestions that the western route is preferable in landscape and visual terms. Such assertions have not been supported by robust evidence. Rather than reducing harm, the proposal would merely relocate impacts onto different communities, landscapes and heritage assets without delivering any meaningful planning or environmental benefit.

For these reasons, the Parish Council does not support the applicant's proposal. The western route offers no compelling improvement over the current alignment and should not be considered a preferable alternative.

Wakes Colne Parish Council – 5th June 2026

Appendix F

9/6/26

Chappel Parish Council does not support the applicant's proposal to move the pylon route westwards across the Colne Valley.

The Parish of Chappel is located in the heart of the Colne Valley which enjoys a regional reputation for being a 'ribbon' of outstanding natural beauty. The valley is of course shared with our neighbouring parishes of Wakes Colne, White Colne, Aldham and Eight Ash Green. The A1124 is the main artery through the above villages from the A12 and Essex County Council Highways had previously designated this as 'The scenic route through the Colne Valley' with appropriate highway signage at the A12 junction.

The proposed alternative alignment offers no significant advantage over the route currently proposed and would simply transfer adverse impacts from one part of the valley to another. There is no clear evidence that a western route would reduce landscape, visual, environmental or heritage impacts. On the contrary, it would introduce a new range of concerns while failing to address the fundamental issue of placing large-scale overhead transmission infrastructure within the Colne Valley.

The route would be longer, requiring additional infrastructure and associated works, increasing both environmental disturbance and overall harm. The western alignment would also affect sensitive heritage assets, including the setting of the Chappel Viaduct (Grade II Listed) and other historic buildings that contribute to the special character of the valley. The open nature of the landscape in this area would mean that pylons remain highly visible across a wide area, creating landscape and visual effects comparable to those associated with the applicant's preferred route.

The Parish Council is not persuaded by suggestions that the western route is preferable in landscape and visual terms. Such assertions have not been supported by robust evidence. Rather than reducing harm, the proposal would merely relocate impacts onto different communities, landscapes and heritage assets without delivering any meaningful planning or environmental benefit. For these reasons, the Parish Council does not support the applicant's proposal. The western route offers no compelling improvement over the current alignment and should not be considered a preferable alternative.

If this proposed route was to be considered Chappel Parish Council would expect a full consultation for our residents, so that their views can be considered and taken into account.

Kind regards,

██████

████████████████

Chappel Parish Clerk & Responsible Financial Officer
Chappel Parish Council

████████████████

Appendix G

Appendix: The Requirement for Good Design

Revision: 1

Date: 10 June 2026

Response to Section 3 of [REP4-300] 8.4.10.1 (Applicant’s Comments on PEA Appendix D The Requirement for Good Design [REP3-132])

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Introduction

Having reviewed Section 3 of “*Document: 8.4.10.1 Applicant’s Comments on Pylons East Anglia Response to ExQ1*” [REP4-300], PEA stands by all the points made in PEA submission “*Appendix D The Requirement for Good Design*” [REP3-132]. PEA therefore respectfully requests that the ExA gives the points raised in [REP3-132] full consideration.

To reduce the amount of repeated content, this submission focusses on new information and additional issues that came to light within the Applicant’s comments in [REP4-300]. Unfortunately, the Applicant’s response has done little to address the fundamental issues raised in PEA submission [REP3-132], or to alleviate the concerns raised. There are still many unanswered questions.

Valid options have not been fully explored and evaluated, and anomalies still exist in the Applicant’s submitted material. For example, from reviewing [REP4-300], significant inconsistencies are apparent between the underground HVDC construction data presented for this project and that for other projects. Such data is critically important when assessing different alternatives. In addition, as demonstrated by other developers, the need for haul roads can be eliminated with underground HVDC and this report discusses how this would result in a very significant reduction in the impact. This again is a factor that should feature in the evaluation of different options. PEA continues to maintain that the HMT Green Book is the correct tool for evaluating options and this includes the Natural Capital element, as referenced in the National Policy Statements. Issues that fall under the headings “*Routeing through a National Landscape*” and “*Offshore coordination*” are examples of areas where greater priority should be given to the potential to “*avoid*” and “*reduce*” harm.

PEA maintains the stance it has taken on the importance of independent design reviews. These can bring a diverse range of skills, expertise and perspectives to all stages of project’s development cycle, with significant benefits to the outcome. The need for independent design reviews is also included in the Design Principles for National Infrastructure published by the National Infrastructure Commission in 2020 and as referenced in both the 2023 and 2025 versions of the Overarching National Policy Statement for Energy (EN-1).

Discussion in this report is mostly based on the Applicants stated need for a HVDC alternative to have a 6 GW capacity. PEA has subsequently discovered information indicating that for a HVDC alternative only 4 GW is required. This is discussed in the main PEA submission for Deadline 5 and in the final section of this report “*HVAC and HVDC capacity*”.

Independent design reviews

The Applicant states the following:

- (page 15) *“The design development of the Project commenced prior to the publication of the Advice on Good Design (published by the Planning Inspectorate) and the introduction of design champions and design principles taking into account the Design Principles for National Infrastructure (published by the National Infrastructure Commission) that is now referred to within footnote 102 in NPS EN-1 (2024) as recommended guidance. As such, the design of the Project was not shaped by the above guidance from the outset”.*
- (page 17) *“It is noted that there is not a mandatory requirement to appoint an independent design review panel for Nationally Significant Infrastructure Projects.”*
- (page 24) *“National Policy Statements EN-1 and EN-5 (2024) do not impose a requirement for applicants to undertake a design review by an independent design review panel.”*

PEA document [REP3-132] however highlights the following for example:

- The NIC “Design Principles for National Infrastructure” report was published in February 2020 and therefore significantly in advance of the project inception in 2022.
- There was therefore sufficient time for the advice to be applied to the Norwich to Tilbury project before it became embedded in the 2023 Overarching National Policy Statement for Energy (EN-1) and in the associated “Energy National Policy Statements, Appraisal of Sustainability - Appendices Supporting Evidence Volume I”.
- In various pre-application meetings, the Planning Inspectorate provided Section 51 (s51) advice to the Applicant that related to the NIC guidance on issues such as the use of design champions and design panels. For example, at the s51 meeting with the Planning Inspectorate held on 30 January 2023, the Applicant was reminded of the NIC guidance, including that relating to design champions and design panels.
- The need to be “Independent” is one of the 10 design review principles endorsed by the Planning Inspectorate¹.
- The NIC guidance was clear in that *“design review panels should be set up for every nationally significant infrastructure project”*.

1

https://assets.publishing.service.gov.uk/media/67603830cfbf84c3b2bcfa6d/Achieving_good_design_in_Nationally_Significant_Infrastructure_Projects.pdf

The infrastructure organisations quoted as examples in [REP3-132] strongly embraced the NIC guidance from early on. It is noted in fact that National Highways also reference advice on independent design reviews from the Design Council in 2019.

The Design Council's report underlines the importance of independence. "Independent" is one of the ten fundamental principles of Design Review, and under this heading it states: *"It is conducted by people who are unconnected with the scheme's promoters and decision makers, and it ensures that conflicts of interest do not arise"*.

The Applicant states the following on page 34: *The Advice Note does not mandate independent design review panels for Nationally Significant Infrastructure Projects (NSIPs); rather, it identifies a range of mechanisms through which good design outcomes may be achieved. Independent design review is one such mechanism, but not a requirement, and the choice of mechanism should be proportionate to the type of infrastructure and the scope for design influence. The non-statutory advice also applies across all NSIPs, including, for example, airports, reservoirs and nuclear power stations – contexts where there may be a clear end-user interface or architectural outcomes that warrant bespoke design review. By contrast, the proposed Project comprises operational infrastructure with no public access and no requirement for reinstated public realm. On this basis, the Applicant continues to consider that a dedicated independent design review panel is not necessary."*

In the first section of [REP3-132] PEA quoted the following from Section 4.7.1 of the Overarching National Policy Statement for Energy, EN-1 (2023 & 2025): *"...high quality and inclusive design goes far beyond aesthetic considerations. The functionality of an object – be it a building or other type of infrastructure – including fitness for purpose and sustainability, is equally important"*.

In doing so, PEA attempted to highlight that independent design reviews should consider all aspects of the design and not only the form and appearance. It is therefore vital that the independent input starts as early as possible in the development cycle to inform the design. If carried out at the end it would largely be limited to aesthetic considerations and, even with this, scope would be limited because most of the decisions would have been made. PEA also makes the point in its report that *"The use of independent design reviews can also help to build meaningful and constructive engagement with communities. It is after all the public who will interact with and ultimately pay for the resulting infrastructure"*. Even though, as stated by the Applicant, it is *"operational infrastructure with no public access"* the public will extensively interact with the infrastructure as part of their daily lives.

The Applicant uses terms such as “*detailed design*” and “*post consent*” many times but these apply at the end of the process. The key issues are how concepts are formulated and developed.

Independent design reviews are not only of key importance in achieving good design. By bringing in a diverse range of skills, expertise and perspectives, the process can also provide visibility, engagement, transparency and confidence. Independent design reviews simply represent best practice in achieving good design.

Land take

As the quoted figure appeared high, attention was drawn to the width of the HVDC construction swathe referenced in Section 3 (pp. 29-30) of the Applicant’s document 8.4.10.1 [REP4-300].

The Applicant refers to an illustrative construction swathe width of 85 m for a 6 GW HVDC group of cables and comparisons were then made with a corresponding 120 m width for the HVAC alternative. A very simplistic assessment indicates little correlation between the resulting swathe width ratio of 71% (85/120) and the ratio for the number of cables along the width of 33% (6/18), based on 6 cables for HVDC & 18 cables for HVAC. As a result, a more detailed assessment was made. The findings follow:

HVDC trench width and depth

- Both the width and the depth of the HVDC trench shown in the Applicants drawing “Figure C.1” in Annex C of document “8.5.3 Applicant’s Written Summary of Oral Submission and Response to Action Points for Issue Specific Hearing 1 [REP1-139]”², are significantly larger than the reference material consulted.
- As the Applicant’s assessment was made assuming a splayed excavation extending from the base of the trench, the trench depth can also be a significant factor in the determining the resulting trench width.
- Comparison was made with the May 2025 PEIR data supplied by the Applicant for the Eastern Green Link 3 (EGL 3) and Eastern Green Link 4 (EGL 4) Project^{3, 4}.
- The EGL 3 and EGL 4 project consists of two separate 525 kV, 2 Gigawatt (GW) High Voltage Direct Current (HVDC) links and is therefore a very relevant example.

² <https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN020027-001974-8.5.3%20Applicant's%20Written%20Summary%20of%20Oral%20Submissions%20and%20Response%20to%20Action%20Points%20for%20Issue%20Specific%20Hearing%201.pdf>

³ pp. 15-16 <https://www.nationalgrid.com/document/559126/download>

⁴ pp. 17-18 <https://www.nationalgrid.com/document/559126/download>

- In a like-for-like comparison three 2 GW cable pairs of the type used in the EGL 3 and EGL 4 project are needed to produce the stated Norwich to Tilbury capacity of 6 GW.
- The EGL 3 and EGL 4 project is also a contemporaneous example as the project is currently at the pre-application stage, having completed the statutory consultation.
- Information relating to other examples was then consulted to help verify the findings.

The options investigated are outlined below. These are numbered A1 to A4 for the HVAC versions and D1 to D3 for the HVDC versions. The baseline options are A1 and D1 as these are the HVAC and HVDC versions presented by the Applicant for the Norwich to Tilbury project.

A1: HVAC underground trench as specified by the Applicant for the Norwich to Tilbury project in [REP1-003]⁵ (1:1 slope angle).

A2: HVAC underground trench as specified by the Applicant for the Norwich to Tilbury project in [REP1-003], but with the slope angle changed from 1:1 to 1:2.

A3: HVAC underground trench as specified by the Applicant for EGL 3&4 (1:2 slope angle).

A4: HVAC underground trench as specified by the Applicant for EGL 3&4, but with the trench depth matched to the HVDC trench specified by the Applicant for the Norwich to Tilbury project in [REP1-139].

D1: HVDC underground trench as specified by the Applicant for the Norwich to Tilbury project in [REP1-139].

D2: HVDC underground trench as specified by the Applicant for EGL 3&4 but with a slope angle of 1:1 to match the slope angle specified by the Applicant for the Norwich to Tilbury project HVAC underground trench in [REP1-003].

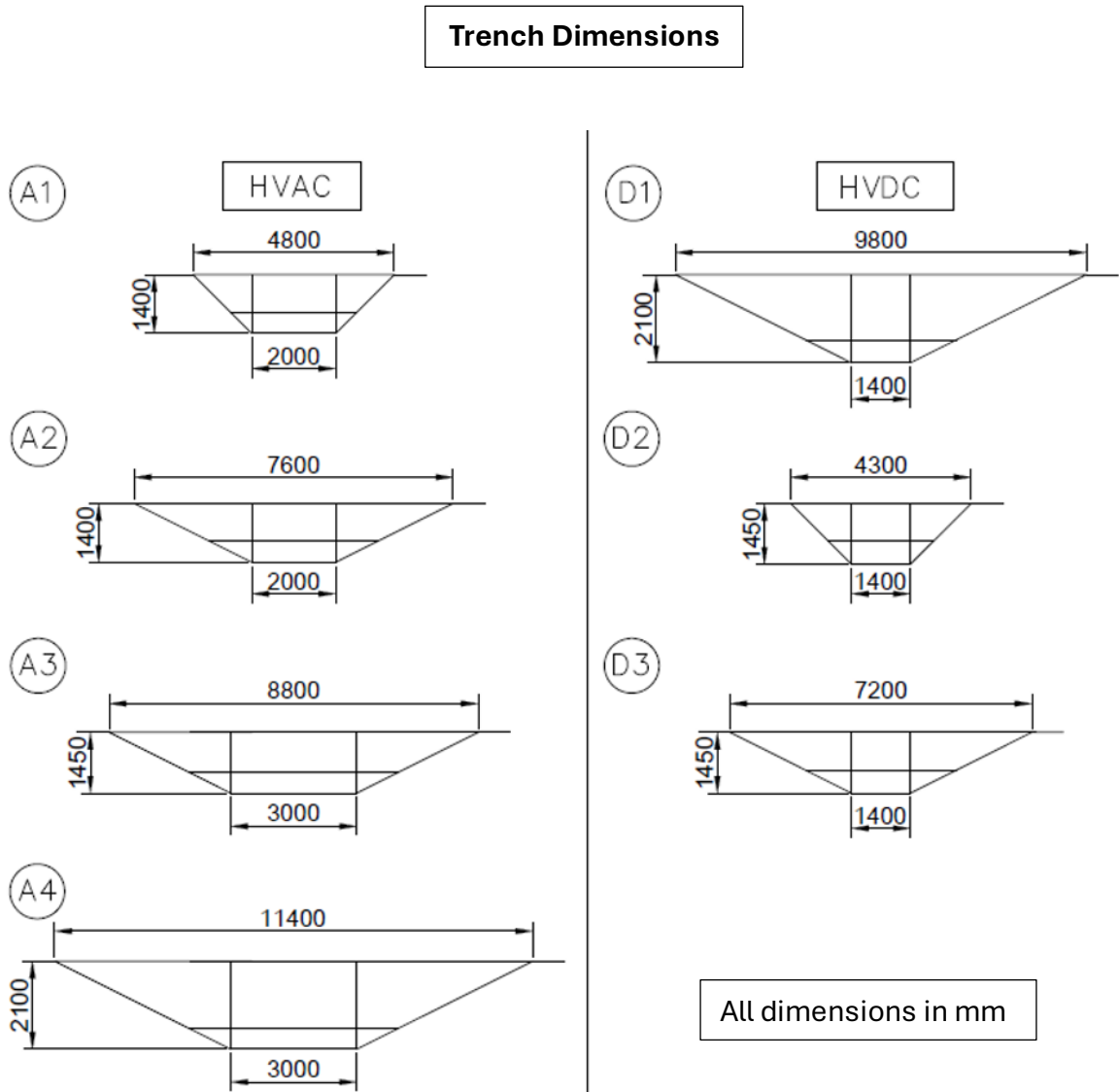
D3: HVDC underground trench as specified by the Applicant for EGL 3&4, with a slope angle of 1:2.

The key dimensions are provided in the following table. A column for the cross-sectional area was added as this parameter is very relevant to the volume of material that would need to be excavated.

⁵ https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN020027-001472-2.6.1%20Errata%20Design%20and%20Layout%20Plans%20-%20Subs%20and%20Cables_Revision%20B.pdf

Option	Trench Dimensions			Cross-sectional Area (m ²)
	Width at surface (m)	Width at base (m)	Depth (m)	
A1	4.80	2.00	1.40	4.76
A2	7.60	2.00	1.40	6.72
A3	8.80	3.00	1.45	8.56
A4	11.40	3.00	2.10	15.12
D1	9.80	1.40	2.10	11.76
D2	4.30	1.40	1.45	4.13
D3	7.20	1.40	1.45	6.24

These options are represented in the following scale drawing of the trench sections:



The following points are highlighted:

- For the Norwich to Tilbury project, the Applicant states the HVAC trench width at the base to be 2000 mm. The corresponding dimension for the EGL 3&4 project HVAC trench width is 3000 mm.
- For the Norwich to Tilbury project, the Applicant states the HVAC trench depth to be 1400 mm. The corresponding dimension for the EGL 3 &4 project HVAC trench depth is 1450 mm, and therefore very similar.
- For the Norwich to Tilbury project, the Applicant states the HVDC trench depth to be 2100 mm. The corresponding dimension for the EGL 3&4 project HVDC trench depth is 1450 mm.
- Therefore, the HVAC and HVDC trench depths for the EGL 3&4 project are identical, but for the Norwich to Tilbury project the HVDC trench depth is significantly deeper than the HVAC version.
- For the Norwich to Tilbury project, the Applicant states the HVDC trench width at the surface to 9800 mm. The corresponding dimension quoted for the EGL 3&4 project is 1400 mm. However, the EGL information does highlight that if the excavation is splayed to eliminate the risk of collapse, the surface width could extend to approximately 7400 mm, assuming a slope angle of 1:2. As the trench width calculates at 7200 mm, with a 1:2 slope angle and a 1400 mm base width⁶, for accuracy and consistency this figure has been used in this document instead of the approximate figure of 7400 mm quoted for the EGL 3&4 project.
- There are also discrepancies in the excavation slope angle. The information from the EGL 3&4 project assumes a slope angle of 1:2 for splayed excavation of both the HVDC and HVAC trenches. The Norwich to Tilbury project assumes a 1:1 slope angle for the HVAC option but a 1:2 slope angle for the HVDC option, greatly increasing the effective trench width.
- The considerably deeper trench specified for the Norwich to Tilbury HVDC alternative combined with a much shallower slope angle leads to the substantially greater trench width at the surface.
- The cross-sectional areas of the different trench options relate directly to volume of material that would need to be excavated. As can be seen from both the calculated cross-sectional areas and drawings, there are very significant differences between the options. For example, the cross-sectional area of D1, the HVDC underground trench presented by the Applicant for the Norwich to Tilbury project is a factor of 2.85 greater than D2. D2 has the same trench width at the base as D1, but with a slope angle of 1:1

⁶ $(2 \times 1450) + 1400 + (2 \times 1450) = 7200$

to match the slope angle specified by the Applicant for the Norwich to Tilbury project HVAC underground trench.

- Even if a 1:2 slope angle was required, as shown in D3, the cross-sectional area of D1 would still be a factor of 1.89 greater. This would also be an unfair comparison unless comparing against HVAC options with the same slope angle.

These points raise a number of questions:

- Why would the HVDC trenches for the Norwich to Tilbury project be 50% deeper than the HVDC trenches for the EGL 3 and EGL 4 Project when the capacity of the cable pair in each trench is the same, noting that with the splayed excavation an increased depth leads to increased width?
- Why for the Norwich to Tilbury project would the HVDC trenches be 50% deeper than the HVAC trenches, noting that for the EGL 3 and EGL 4 Project the depths of HVDC and HVAC trenches are identical?
- Why is there a significant discrepancy between the HVAC trench base widths for the two projects?
- Why are there discrepancies between the proposed excavation slope angles, noting the significant impact this has on trench width and therefore construction impact?

These issues are very significant to the trade-offs between the options and the harm caused. This arises for example from the impact on land take, the amount of material that needs to be excavated and the amount of material that needs to be brought in.

For example, if the HVAC trench base width for the Norwich to Tilbury project was increased from 2000 mm to 3000 mm to align with EGL 3&4, and the excavation angle was changed from 1:1 to 1:2 to align with both EGL 3&4 and the current HVDC trench drawing for Norwich to Tilbury, the width at the surface would increase from 4800 mm to 8800 mm, as represented in option A3. This is significantly greater than the current dimension of 7000 mm between the Norwich to Tilbury HVAC trench centres.

Consequently, this would require substantial widening of the already extensive HVAC construction and permanent swathes, not only to accommodate the much greater width of the six trenches but also the corresponding increase in soil stockpiles that would result from the considerable additional volume of excavated material. If, in addition, as per EGL 3&4, the HVAC and HDVC trench depths were made the same and these equated to the 2100 mm figure quoted by the Applicant for Norwich to Tilbury HVDC trenches, the HVAC trench width at the surface would extend to 11400 mm, as represented in option A4. The effect would therefore be profound.

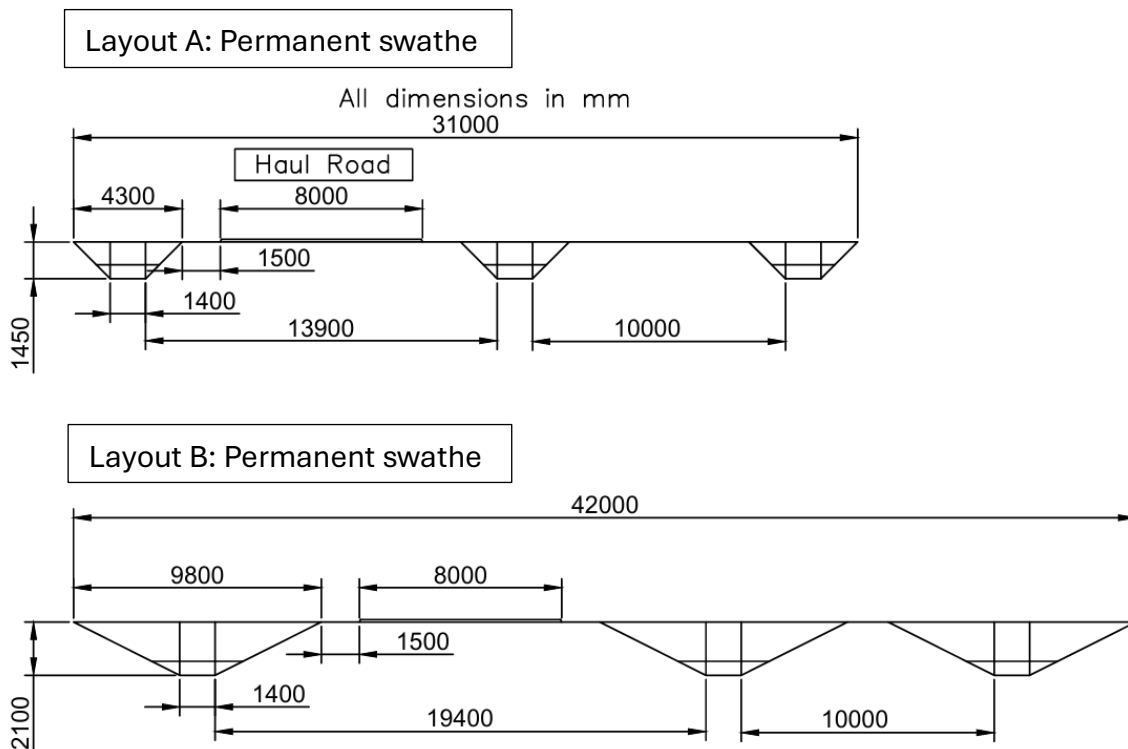
The following drawing was produced to illustrate the impact on the permanent swathe if the trench profile was changed from:

D1: HVDC underground trench as specified by the Applicant for the Norwich to Tilbury project in [REP1-139]

To:

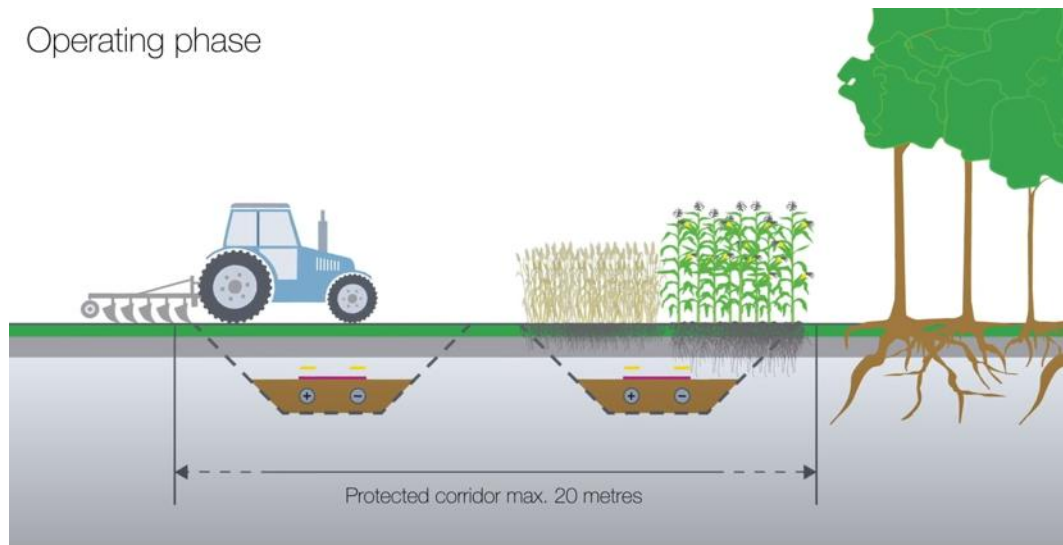
D2: HVDC underground trench as specified by the Applicant for EGL 3&4 but with a slope angle of 1:1 to match the slope angle specified by the Applicant for the Norwich to Tilbury project HVAC underground trench in [REP1-003]

The dimensions used for the lower drawing, “Layout B”, are those relating to the permanent swathe in [REP1-139], and therefore the “D1” trench profile. In the upper drawing, “Layout A”, the trench profile was changed to “D2”, and the left-hand trench was moved correspondingly closer to the centre trench, while respecting the stated dimensions for the haul road and the associated margins. The two drawings are to the same scale. As the “D2” trench profile uses the HVDC underground trench dimensions specified by the Applicant for EGL 3&4 but with the Norwich to Tilbury project HVAC trench angle of 1:1, this is considered a very relevant example.



As can be seen, this results in a substantial reduction in the width of the permanent swathe and, due to the considerable reduction in material stockpiles, there would be corresponding reductions in the construction swathe. To verify the data, other examples were cross-referenced.

A video from TenneT⁷, showing the laying of a 2 GW, 525 kV HVDC underground cable, states a depth of 1.3 to 1.5 m. This therefore aligns well with the depth of 1.45 m used in “Layout A”. The video also shows a protected corridor of 20 m for two trenches, as captured in the following image. It would seem reasonable therefore to assume a protected corridor of 30 m for three trenches. This is therefore very close to the 31 m shown in “Layout A”. If the EGL 3&4 haul road width of 7m had been used in this layout, the figure would be 30 m.



Some examples show less separation between the trenches. For example, National Grid Factsheet: High Voltage Direct Current Electricity – technical information⁸, indicates 3 to 4 m between trenches, compared with the minimum of 10 m used in Layouts A and B.

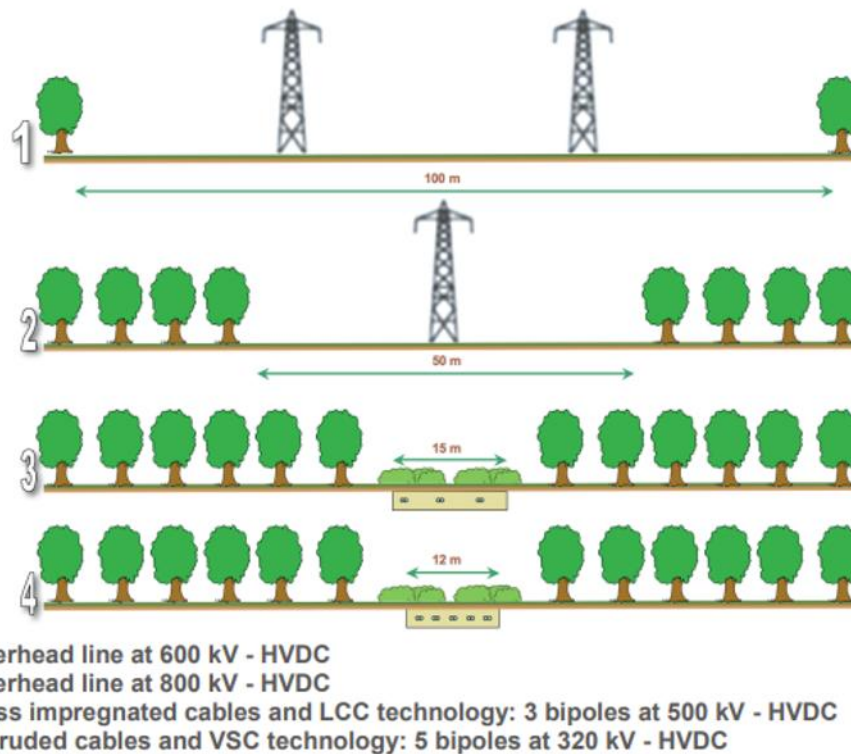
Information from EuropaCable⁹ shows a protected corridor of 15 m for three HVDC trenches, as copied in the following image. Even accepting that this relates to a capacity of 5 GW instead of 6 GW, it represents a corridor significantly narrower than that shown in “Layout A”.

⁷ <https://www.youtube.com/watch?v=FjPFpJnOUrg>

⁸ <https://www.nationalgrid.com/sites/default/files/documents/13784-High%20Voltage%20Direct%20Current%20Electricity%20%E2%80%93%20technical%20information.pdf>

⁹ [https://europacable.eu/wp-content/uploads/2021/01/Introduction to HVDC Underground Cables October 2011 .pdf](https://europacable.eu/wp-content/uploads/2021/01/Introduction%20to%20HVDC%20Underground%20Cables%20October%202011.pdf)

3) Possible layouts to fulfill HVDC 5 GW power transmission requirements



As illustrated in the TenneT video, underground HVDC cables can be installed without the need to construct haul roads. The TenneT video shows the use of re-usable “wooden beams or metal plates”. Similar techniques have been used on the Shetland HVDC link project¹⁰. The viability of this option is assisted by the much lower material requirement than the equivalent underground HVAC cable construction. In the case of Norwich to Tilbury the cable requirement for instance would be reduced by two thirds.

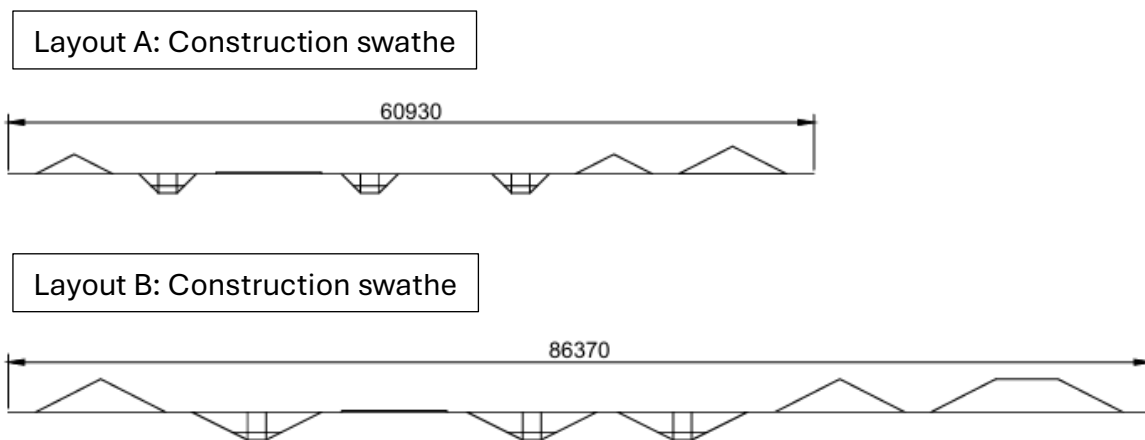
Further work was undertaken to assess the width of the construction swathe. To ensure consistency with the Applicant’s drawing the following was applied:

- The Applicant’s “Figure C.1” drawing was replicated to verify assumptions and provide a scale reference.
- The degree of compaction for the stockpiles in the Applicant’s HVDC drawing was calculated and the same assumptions applied to the PEA drawing.
- The angle of repose used by the Applicant has been applied (calculated at approximately 27 degrees).
- The stockpile height limit of 2500 mm used by the Applicant has been applied.
- The distances between features have been maintained.

¹⁰ <https://www.ssen-transmission.co.uk/news/news--views/2021/7/shetland-hvdc-link-project-onshore-cable-installation-gets-underway/>

- The haul road width of 8 m from the Applicant’s drawing in [REP1-139] has been used.

The resulting overall construction widths for “Layout A” and “Layout B” are shown below. As can be seen, “Layout A”, the PEA version the Applicant’s drawing “Figure C.1”, indicates a HVDC construction swathe that is approximately 25 m narrower. Considering that both layouts are representing HVDC schemes of the same capacity this is a very significant difference. If, as is the case with other HVDC schemes, a haul road is not required the width of “Layout A” could be reduced even further, noting that a haul width of 8 m has been allowed for.



Haul road construction

The very significant construction impact that would result from the haul roads required for the current HVAC proposal is illustrated in the Pylons East Anglia Ltd submission “Appendix G - Treasury Green Book” [REP2-056]. This is therefore an impact that could be completely avoided with a HVDC solution.

The specified haul road width of 8 m is greater than the width of two motorway lanes, which are typically 3.65 m wide¹¹. This road would essentially run from Norwich to Tilbury.

For purposes of this assessment the total haul road length was assumed to be the route length of 181km. It is likely though to be longer than this as, for example, in some places the haul roads required for HVAC undergrounding run parallel to those required for the OHL construction.

¹¹ <https://www.standardsforhighways.co.uk/tses/attachments/by-attachment-id/210ff1ed-4a73-466f-ad7c-45936d121fce?inline=true>

To construct the haul roads the ground needs to be excavated to a depth of between 200 and 490 mm, according to the figures supplied by the Applicant for the statutory consultation. The Applicant's drawing states that the finished surface is to be a minimum of 50 mm above ground level. This removal of this volume of material therefore needs to be considered in addition to the aggregate brought in to construct the haul roads.

Assuming the depth of the haul roads to be the average of the figures supplied by the Applicant for the statutory consultation, the volume of material that would need to be excavated for the haul roads alone was calculated at 401,820 m³. With an assumed density of 1,600 kg/m³, this equates to a mass of 642,912 tonne.

The volume of aggregate that would be required for the haul roads was calculated at 474,220 m³. With an assumed density of 1,600 kg/m³, this equates to a mass of 758,752 tonne.

This, therefore, results in a combined material volume of 876,040 m³ purely associated with the haul roads. For visualisation purposes this translates to a cube with sides of approximately 95 m. The combined material mass is approximately 1.4 million tonnes.

These calculations are based on the average depth as calculated from the range of options provided by the Applicant. If the worst-case depth had been used instead the figures would be approximately 50% larger.

Cable ploughing, as suggested by PEA in previous submissions, would also remove the need for haul roads.

Considering the vast amount of material required, there would clearly be significant carbon emissions associated with the haul roads on their own. This brings into question the assessment of the carbon emissions for the whole project as proposed, as PEA has seen no comparison of the carbon emissions of alternatives.

Land take calculations

The Applicant states the following in Section 3 (pp. 29-30) of document 8.4.10.1 [REP4-300]:

“With regard to high voltage direct current (HVDC), 7.18 2022 - Corridor and Preliminary Routeing and Siting Study [APP-356] states that ‘HVDC onshore cables have advantages over AC cables having significantly less land take, and therefore somewhat lower environmental impact.’ (paragraph 1.3.11). However, this comment only applies where HVDC onshore cables are used over a long distance, which is their typical use”.

Calculations performed by the Applicant relating to the reduction in temporary land take are then outlined and the Applicant then concludes that the “additional land take

required for HVDC converter stations is only balanced in land take terms with a Project length of 25.7 km”.

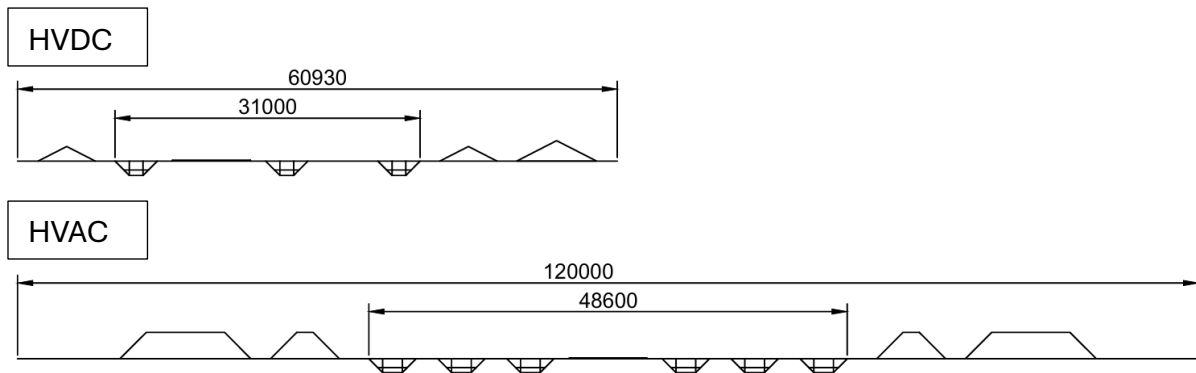
It is very important to highlight initially that the HVDC solutions proposed by PEA, whether they be onshore or offshore, have always applied to the full length of the Norwich to Tilbury route. This assumption was implicit in the Green Book work carried out by PEA [REP2-056] and the point has been reiterated. For example, in the “Deadline 2 Submission from Pylons East Anglia Ltd” [REP2-054], the following is stated: “*We have never asked for HVDC undergrounding only in the Dedham Vale. That misrepresents our position. We are fully aware that HVDC for short distances is impractical and that HVDC is a long-distance solution well suited to the entire route from Norwich to Tilbury, ideally without a break.*”

It is noted though that the Applicant’s calculations show that the land take is balanced “*with a Project length of 25.7 km*”. This is a relatively short distance and is close to the figure of 21 km quoted by the Applicant for the HVAC underground sections, noting also for example that in the Dedham Vale NL that the length is effectively increased by a double width section required to accommodate the wide HVAC swathe. If the calculation is repeated with the reduced HDVC construction swathe of 61 m, as suggested in this report, the figure at which the land take is balanced reduces to 15.2 km.

The calculations become even more meaningful though if the permanent swathe is considered in the calculations in addition to the temporary land take/construction swathe.

For a project with a length of 181 km and a permanent HVDC swathe of 41 m, the land take is 163 ha less than that for a 50 m HVAC permanent swathe (in both the OHL and underground sections). If the HVDC permanent swathe is instead 31 m (or potentially less), as suggested in this report, the land take is 344 ha less than that for a 50 m HVAC permanent swathe. The resulting reductions in the permanent swathe land take would therefore substantially outweigh the 90 ha figure quoted by the Applicant in [REP4-300] for the combined area of the converter stations and compounds needed to accommodate the 6 GW capacity. Also, the 90 ha figure quoted by the Applicant refers to the construction land take. This figure for the converter stations permanent land take will be lower.

The following figure has been produced to show PEA HVDC drawing “Layout A” and the corresponding features from the Applicant’s HVAC drawing in [REP1-003] are replicated below it to the same scale. In both drawings the construction and permanent swathes have been dimensioned.



This clearly demonstrates, for same transmission capacity, the huge difference between both the construction and permanent swaths of underground HVAC and HVDC options and therefore the resulting impact.

Sensitivity to changes

One observation from this assessment is that, when compared on a like-for-like basis, underground HVAC displays much greater sensitivity to any changes than the HVDC equivalent. This could for example be in response to any changes that might be found to be necessary during construction. If, say, the excavation depth needs to be increased due to ground conditions, the impact would be more than double due to it applying to 6 trenches compared with 3 for the HVDC equivalent. This has a direct impact not only on the permanent swathe but also on the construction swathe, due to the corresponding increase in the size of the soil stockpiles. In locations such as the Dedham Vale NL where the route is heavily constrained, the implications are manifest. As the proposals currently stand the HVAC underground route is split in a section resulting in a total width that is more than twice the typical 120m open cut construction swathe. The greater sensitivity of HVAC to any changes could have profound implications.

Project delivery

On page 24, the Applicant indicates that there would be a deliverability risk with HVDC based alternatives due to constraints in the HVDC market. However, this is clearly not the case with adequate planning. This is demonstrated, for example, by the other HVDC projects currently being delivered in Europe and indeed the Applicant selecting HVDC for the EGL projects.

In para 5.0.3 of the “Eastern Green Link 3 & 4 Strategic Option Report 2024”¹² the Applicant states: “The required capacity HVDC links over the proposed distance have comparable capital costs, but much lower lifetime costs than the alternative onshore AC option in this case. It is also recognised that delivery of an onshore solution with a

¹² <https://www.nationalgrid.com/document/151426/download>

long route length, carries much higher delivery risk than the HVDC reinforcement proposals (EGL3 and EGL4) that are currently being progressed. The use of overhead lines is not considered to be feasible because they cannot be delivered by the required 2030 timescale.” The reverse argument has therefore been applied to the EGL3 and EGL4 project.

The Applicant makes numerous references to constraints relating to the supply of HVDC circuit breakers, even though PEA has not questioned this assertion. The Applicant does however agree with PEA that HVDC circuit breakers are not required for point to point HVDC connections. This is an important point because options that PEA has previously suggested for consideration as alternative solutions are point to point HVDC connections. Key options are listed below:

- A. Multiple 2 GW HVDC point to point links between Norwich to Tilbury. These could be either onshore or offshore or a combination of both.
- B. Continuing the two 2.9 GW HVDC Hornsea 3 circuits to Tilbury, as this would deliver half the stated 6 GW requirement with just two pairs of HVDC cables.
- C. Combine the power from the North Falls and Five Estuaries Offshore Windfarms using a 2GW offshore converter platform so that the power is delivered at or near to Tilbury via a single pair of HVDC cables. This option is discussed later in this document in relation to the Government funded Offshore Coordination Support Scheme (OCSS).
- D. Maintain a separate onshore connection for the HVDC Tarchon Energy Interconnector but connect at or near to Tilbury via a single pair of HVDC cables.

These options lead to numerous permutations. In some cases, a combination of options is required to meet the stated capacity requirements.

For example: Option A could deliver the full stated required capacity of 6 GW on its own. An offshore variant of Option A, “Offshore 1”, was presented by the Applicant in the June 2023 Norwich to Tilbury “Strategic Options Backcheck and Review” as an option that was considered to “meet the project need”.

Option B could be used with Option C and D to deliver the required capacity to Tilbury without the need for a new Norwich to Tilbury circuit.

A reduced capacity version of Option A could be used with Option C and D to deliver the required capacity to Tilbury. The corresponding reduction in the number of cables would reduce the cost and the impact.

In all cases the existing 400 kV Norwich to Tilbury overhead line would provide the local interconnections.

There are likely to be other viable options/permutations that PEA is not aware of as PEA does not claim to have extensive expertise in this area.

Articles quoted both by PEA and the applicant indicate that the direction of travel is towards HVDC offshore grids. It is also clear that developing the HVDC circuit breakers with the required duty is progressing rapidly. HVDC point to point connections could become an element of such a grid when the technology is sufficiently mature.

The urgent need for the project is referred to many times by the Applicant. Arguably delivery of the Tilbury project would be faster if the scheme was not so hugely unpopular. By the Applicant's own admission, the plans are controversial. In the "Essex webinar - Norwich to Tilbury targeted consultations" held on 17 March 2025 the project was described as "*controversial*" in the opening statement from the Applicant. This was echoed in a BBC report on 18 March 2025 where the scheme was described as "*hugely controversial*"¹³.

Potentially, a scheme that was more acceptable to the region would not have required a second non-statutory consultation phase and therefore saved a year of elapsed time. It would also be far less susceptible to risks of delay resulting from judicial reviews.

MPs in Essex and Suffolk have made comparisons between the Norwich to Tilbury proposals and the construction a large Anglian Water pipeline project in the region¹⁴. The comment was that they have been overwhelmed with concerns from constituents relating to the Norwich to Tilbury project but have received very little feedback relating to the water pipeline project. This is very relevant as the construction of a large water pipeline has similarities to underground HVDC.

Routeing through a National Landscape

The substantial weight that should be given to the conservation and enhancement of the natural beauty in National Landscapes/AONBs is highlighted in both the 2023 and 2025 versions of EN-1 (para 5.10.32).

In relation to the Dedham Vale National Landscape, the Applicant states: "*It should be noted that routeing through a National Landscape is not in conflict with NPS EN-1 or EN-5.*"

While, if taken in isolation, this statement is not incorrect it does not go far enough. The NPSs do not stand in isolation. They stand in a framework that includes the Electricity Act 1989, and the Countryside and Rights of Way Act 2000 (as amended by the Levelling-up and Regeneration Act 2024).

Schedule 9 of the Electricity Act 1989 requires the following:

¹³ <https://www.bbc.co.uk/news/articles/ckg19gveq0wo>

¹⁴ <https://www.anglianwater.co.uk/environment/investing-in-the-future-of-water>

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 archaeological 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.

(2) In considering any relevant proposals for which his consent is required under section 36 or 37 of this Act, the Secretary of State shall have regard to--

(a) the desirability of the matters mentioned in paragraph (a) of sub-paragraph (1) above; and

(b) the extent to which the person by whom the proposals were formulated has complied with his duty under paragraph (b) of that sub-paragraph.

(3) In this paragraph--

"building" includes structure;

"relevant proposals" means any proposals--

(a) for the construction or extension of a generating station of a capacity not less than 10 megawatts, or for the operation of such a station in a different manner;

(b) for the installation (whether above or below ground) of an electric line; or

(c) for the execution of any other works for or in connection with the transmission or supply of electricity.

(4) The Secretary of State may by order provide that sub-paragraph (3) above shall have effect as if for the capacity mentioned in paragraph (a) there were substituted such other capacity as may be specified in the order.

(5) This paragraph and paragraph 2 below extend to England and Wales only.

Key paragraphs therefore include:

“(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 archaeological 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.”

Concerns relating to the statutory the duty in section 85 of the CROW Act 2000 are discussed in [REP4-358] submitted on behalf of the Dedham Vale Society. The submission quotes the following, for example:

“In exercising or performing any functions in relation to, or so as to affect, land in an area of outstanding natural beauty [now National Landscape] in England, a relevant authority ... must seek to further the purpose of conserving and enhancing the natural beauty of the area of outstanding natural beauty.”

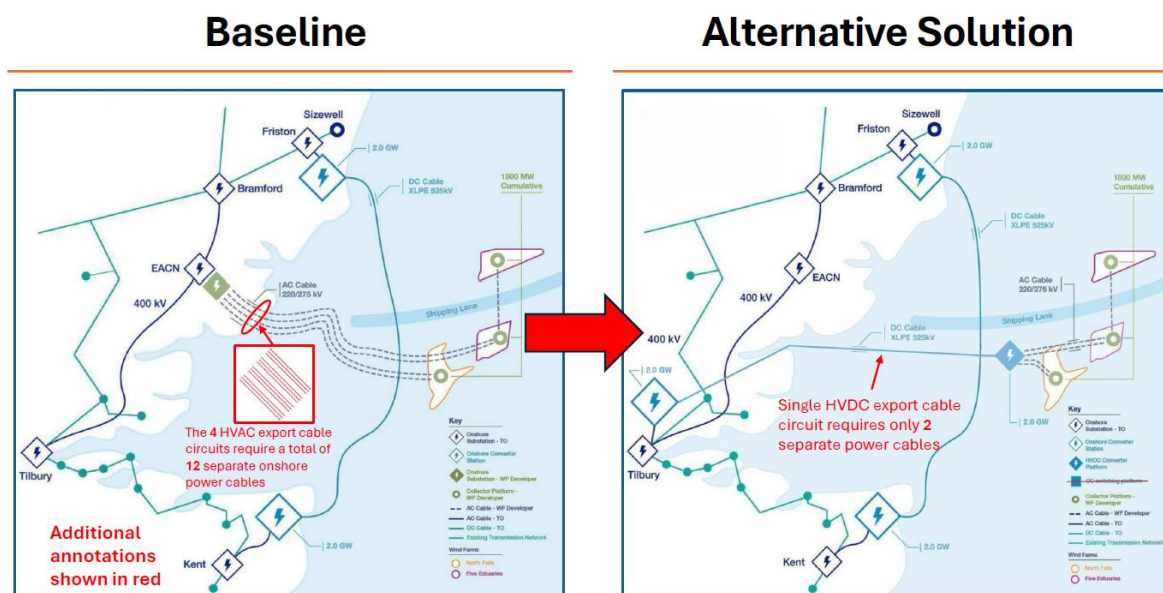
Offshore coordination

In Appendix D “The Requirement for Good Design” [REP3-132], PEA highlights the importance of offshore coordination, as recognised in EN-1 and EN-5, and that, despite the acknowledged benefits, there is no offshore coordination within the Norwich to Tilbury project.

PEA produced a concept to illustrate how this could be achieved for North Falls and Five Estuaries windfarms, but there has been no engagement from either the Applicant or the wind farm developers. As more details are provided in previously referenced PEA report, “OCSS Review”¹⁵, the proposal is only briefly outlined here.

The proposal was built on the work carried out as part of the cancelled Government funded OCSS study. The OCSS study was intended to rectify the highly undesirable radial connections planned for the North Falls and Five Estuaries windfarms. As the key limitations of the originally proposed OCSS scheme were due to the plans to connect into Sea Link, this element was completely removed from PEA suggested alternative.

In the following diagram from the PEA report, the schematic under the heading “Baseline” shows the current radial connection plans for connecting the North Falls and Five Estuaries windfarms. The PEA suggested alternative is shown under the heading “Alternative Solution”.

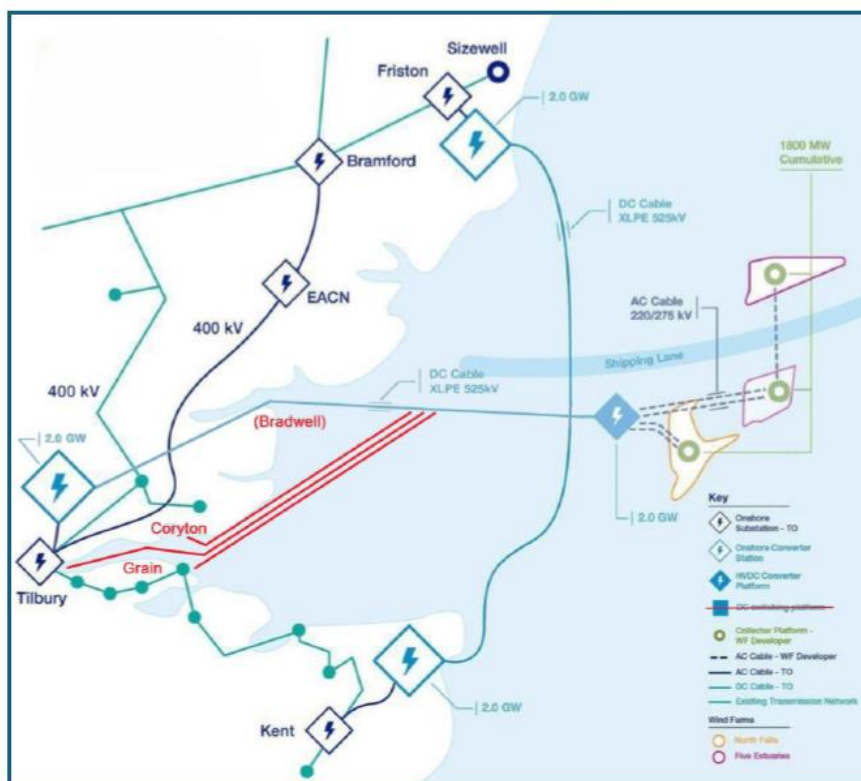


As can be seen by employing a small amount of offshore coordination it is possible to greatly reduce the number of cables and enable power to be delivered closer to demand. Also, by connecting at or near to Tilbury, dependency on the Norwich to Tilbury

¹⁵ “OCSS Review_C” <https://drive.google.com/file/d/1wAKcVFtsK2ewaBhF90W8gJ0TrdLiNOEH/view>

project is removed. This has significant project planning advantages as it would mean that construction of the North Falls and Five Estuaries windfarms could progress independently of the Norwich to Tilbury project. A direct connection could also increase system resilience.

A further version of the “Alternative Solution” schematic was produced for “PEA report “Modelling Requests”¹⁶ to illustrate a range of alternative land fall points that could be explored. The options are denoted by the red lines and text added to the figure. The aim is to minimise overall harm. For example, brownfield sites should be prioritised for the location of converters and substations.



The building blocks required are currently being employed as the standard design for such infrastructure in Europe (as discussed in the “OCSS Review” report).

All the illustrations used have been derived from the Arup OCSS report¹⁷, with adaptation and annotation as necessary for this report.

¹⁶ “Modelling Requests, Rev. A, March 2025”
<https://drive.google.com/file/d/1XtALTecpWS4SYIK89fUPosuY8Qo2C3dt/view>
¹⁷ <https://www.nationalgrid.com/document/152786/download>

Alternatives

[REP3-132] from PEA highlights how the Applicant committed to a single option for the Norwich to Tilbury project, from the Inception Meeting on 4 April 2022 to the Planning Statement [APP-085] in August 2025, as recorded in the Section 51 advice documents.

On 18 July 2022 a group of MPs known as Offshore Electricity Grid Task Force (OffSET), met with the Applicant to question why a fully offshore high voltage direct current (HVDC) option was not being explored. It took approximately 3 months for the Applicant to respond with further information in a letter dated 11 October 2022, as provided in Appendix “EAG OffSET response 11.10.22 updated Jan 2023 .pdf”¹⁸. The Applicant then updated the letter in January 2023 to correct significant cost errors. This would therefore indicate that from the outset the Applicant did not have a formulated HVDC offshore proposal, despite having already discounted this alternative. It was also confirmed in a letter to James Cartlidge MP dated 30 September 2022 that the Applicant did not consult on offshore options.

In response to the land sterilisation issues highlighted by PEA in [REP3-132]:

“As shown in [AS-065] the proposed site for the EACN substation is centred on an area of Grade 1 BMV land. It is also an area which also holds valuable mineral reserves, including silica sand, as demonstrated at the nearby Martells Quarry site.”

A map in [AS-065] demonstrates how this was apparent from the Agricultural Land Classification (ALC) maps.

The Applicant states:

“During route optioneering the impacts on agricultural land, including on agricultural land-take (such as sterilisation) and on agricultural activities / operations, as far as was understood based on the data available at the time, were a consideration in the route selection process...”

On the contrary these issues would have been apparent if the ALC maps had been consulted. 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.”*¹⁹ The 2023 Energy National Policy Statements: Appraisal of Sustainability - Appendices Supporting Evidence Volume I provides similar advice: *“Strategic scale (1:250,000) Agricultural Land Classification (ALC) mapping is available used as an aid in the planning process and for decision making. The purpose of ALC was to map the agricultural land quality across E&W to a common standard, to ensure*

¹⁸ “EAG OffSET response 11.10.22 updated Jan 2023 .pdf”

¹⁹ <https://naturalengland-defra.opendata.arcgis.com/datasets/Defra::provisional-agricultural-land-classification-alc-england/about>

scarce, high quality land could be protected from loss to development through the planning system.”

The Applicant also states: *“Given the predominance of BMV agricultural land within East Anglia and the geographical extent and scale of the Project, it has not been possible to avoid both temporary and permanent effects on this resource. The permanent loss of BMV land is considered necessary on the basis that there is urgent need for critical national priority (CNP) Infrastructure such as the Project. The routeing and siting selection process confirms that there are no other suitable sites of poorer agricultural quality that can accommodate the Project.”*

The *“predominance of BMV agricultural land within East Anglia and the geographical extent and scale of the Project”* is an important aspect in considering alternatives. For example, by following the mitigation hierarchy an offshore HVDC link would enable the BMV agricultural land to be avoided to the largest degree. The same argument applies for avoiding many of the other harms along the route include those relating to the Dedham Vale National Landscape and the many heritage assets throughout the region that would be significantly impacted.

The National Policy Statements allow underground and sub-sea alternatives to be considered. The 2011 version of EN-5, which applied at the inception of the project, states in 2.8.4: *“...wherever the nature or proposed route of an overhead line proposal makes it likely that its visual impact will be particularly significant, the applicant should have given appropriate consideration to the potential costs and benefits of other feasible means of connection or reinforcement, including underground and sub-sea cables where appropriate”*²⁰

EN-5 2023 states in 2.9.14: *“Where the nature or proposed route of an overhead line will likely result in particularly significant landscape and visual impacts, as would be assessed through landscape, seascape and visual impact assessment, the applicant should demonstrate that they have given due consideration to the costs and benefits of feasible alternatives to the overhead line. This could include – where appropriate – re-routing, underground or subsea cables and the feasibility e.g. in cost, engineering or environmental terms of these...”*. The corresponding paragraph 2.9.14 in EN-5 2025 is very similar.

In the section on Costs in [REP3-132] it is noted that Ofgem, as the economic regulator, has previously made it clear that financial costs are not the only consideration. Ofgem does not always approve the lowest cost option. Various quotes that expand on this were included in that section of [REP3-132].

²⁰ <https://assets.publishing.service.gov.uk/media/65a79559867cd800135ae9a2/1942-national-policy-statement-electricity-networks-en5-withdrawn.pdf>

HM Treasury Green Book

On page 31 it is stated: *“The Applicant acknowledges the position of Pylons East Anglia and repeated request for HM Treasury Green Book Analysis. The Applicant has consistently reiterated its position that that the Treasury Green Book is not relevant to its projects. It therefore rejects the entirety of the analysis referred to in this comment.”*

As acknowledged by the Applicant, PEA has made its views very clear on the relevance of the HM Treasury Green Book to this project and that without full reference to it any options appraisal process is incomplete. This view has applied since the early stages of the project and includes Opinion from Lord Charles Banner KC in July 2023.

The Green Book is also referenced in the recent submission from the Dedham Vale Society, submitted by Richard Buxton Solicitors, Cambridge [REP4-358].

PEA submission [REP3-132] highlights that the government’s guidance on Enabling a Natural Capital Approach (ENCA), which is one of the key tools within the Green Book, is referenced in National Policy Statement EN-1. Section 4.6.16 in both the 2023 and 2025 versions of EN-1 states: *“Applicants should make use of available guidance and tools for measuring natural capital assets and ecosystem services, such as the Natural Capital Committee’s ‘How to Do it: natural capital workbook’, the government’s guidance on Enabling a Natural Capital Approach (ENCA), and other tools that aim to enable wider benefits for people and nature”*. The Green Book is therefore relevant to the National Policy Statements.

The “Appraisal of Sustainability” report for the 2023 National Policy Statements for Energy endorses *“Alignment with HM Treasury Green Book principles” when “conducting strategic options appraisal”*. This is to *“help ensure that development proposals are approached in a holistic way that optimises the social / public value and will help ensure a joined-up approach to development”*.

The Green Book is also relevant to the planning process. PEA submission “Appendix G - Treasury Green Book” [REP2-056] provides examples of where the Green Book has been referenced in planning decisions and responds to other points relating to the Green Book made by the Applicant during the examination process.

On a practical level, PEA also found the Green Book analysis that it carried out to be very informative, even to the extent that the work helped inform responses to this submission. It is therefore disappointing that the Applicant *“rejects the entirety of the analysis”* rather than engaging with PEA on the subject.

HVAC and HVDC capacity

In numerous instances the Applicant states in the response that the total capacity of a HVDC alternative would need to be 6 GW. For example, on page 23: “...to achieve the 6 GW needed on Norwich to Tilbury, three sets of these HVDC systems would be required, with a minimum of three converters at each end of the connection”.

However, for the Eastern Green Link 3 & 4 project, where the Applicant is promoting a HVDC solution, the Applicant states the following in the “Review of recommended technology option” section of the Eastern Green Link 3 & 4 Strategic Options Report 2024²¹:

5.0.1 The largest capacity AC technology option that can be used on NGET’s transmission system consists of two 3,465 MW transmission circuits that are supported on a single set of towers (6930 MW double circuit capacity). The largest HVDC capacity systems that can currently be accommodated on our transmission system are 2,000 MW HVDC cables.

5.0.2 Power flows on AC transmission system circuits cannot be controlled to the same extent as can be achieved using HVDC connections. This lower level of controllability can result in higher power flows particularly during transmission system fault conditions. Taking account of the potential for higher power flows that could be expected, therefore to provide the potential equivalent capacity, the AC option would need to consist of a high capacity (6,930MW) double circuit route to meet any high loading during fault conditions.

5.0.3 The required capacity HVDC links over the proposed distance have comparable capital costs, but much lower lifetime costs than the alternative onshore AC option in this case. It is also recognised that delivery of an onshore solution with a long route length, carries much higher delivery risk than the HVDC reinforcement proposals (EGL3 and EGL4) that are currently being progressed. The use of overhead lines is not considered to be feasible because they cannot be delivered by the required 2030 timescale. Consequently, an option using overhead line technology is not considered to meet the identified need for additional transmission system capacity and therefore, was discounted.

This therefore demonstrates that two 2 GW HVDC circuits have a combined capacity equivalent to a “high capacity (6,930MW) double circuit route”. This is due to the “lower level of controllability” with AC systems that “can result in higher power flows particularly during transmission system fault conditions”.

²¹ <https://www.nationalgrid.com/document/151426/download>

Consequently, it follows that two 2 GW HVDC circuits, delivering a total capacity of 4 GW, would similarly provide the equivalent capacity to the 6 GW HVAC solution proposed by the Applicant the Norwich to Tilbury project.

As this would require two sets of HVDC systems instead of the three quoted by the Applicant for the Norwich to Tilbury project, the implications are very significant in terms of cost, land take, harms, deliverability etc. There would for example be two converters at each end of the connection instead of three. By only requiring two cable trenches the land take from the cable swathe would be significantly less than that discussed earlier in this document and the comparison with the HVAC alternative even more stark. It could also potentially enable other permutations for the required network reinforcement.

Appendix Gi

11th October 2022

Updated January 2023

██████████,
Chair Offshore Electricity Grid Task Force,

Dear Sir Bernard,

National Grid Electricity Transmission (NGET) response to questions raised by Offshore Electricity Grid Task Force (OffSET) meeting of Monday 18 July 2022 East Anglia Green Energy Enablement Project (East Anglia GREEN)

Thank you for taking the time to organise the meeting with OffSET on the 18th July. We found this meeting helpful in understanding the questions that OffSET have raised and we are pleased to provide a written response as requested. This response provides further information on the fully offshore high voltage direct current (HVDC) option to deliver our East Anglia GREEN proposal. Also included are responses to other questions asked by OffSET in the meeting.

We appreciate that this is a lot of information, and the project team would be happy to have a round table meeting with you to talk through the technical detail if this would be helpful.

We do understand that people have strong opinions about our proposals, and it is of utmost importance to us that we build a strong relationship with the communities where we need to develop new connections and understand their concerns/thoughts on our proposals. Integral to this is a good working relationship with you, other elected representatives and all stakeholders including the public.

We take our responsibilities in supporting delivery of the Government's targets for enhancing energy security, reducing cost to consumers and achieving zero carbon goals very seriously and are committed to delivering the network reinforcements required to achieve this transition to a new energy system to a high standard and in a timely manner. We recognise the need for cleaner greener energy to be transported to our homes and businesses so that we can secure low cost, sustainable secure energy in the medium term.

Under the terms of its licence, NGET is required to provide an efficient, economic, and co-ordinated transmission system in England and Wales. The transmission infrastructure needs to transport electricity safely and securely from and to customers. As customer requirements change, we must ensure that the transmission system remains capable of accommodating the changing needs of society. NGET welcomes the ongoing public and policy debate, championed by OffSET, about how we can best meet the future energy needs of the country and ensure the provision of a sustainable transmission system for the future in accordance with the requirements of our licence.

It is important to note that in cases such as this where there is a potential for NGET to require a Development Consent Order (DCO) to deliver nationally important infrastructure, Parliament has provided a framework for consultation and engagement. There is also national guidance on consultation with which NGET (unless there is proper reason) will comply. NGET is happy to assist Offset in its understanding of the need for the project and how that need can potentially be met in a way which is consistent with NGET's important statutory duties. Any such explanation is not and is not meant to be part of or to replace these requirements and/or guidance.

It is also important to note that at this stage of the potential project, the processes of consideration and preliminary determination are always evolving and iterating as the knowledge about the project, and the potential areas in which it will be sited, grows and or alters. In addition, previous preliminary assumptions and/or decisions are the subject of constant checking and backchecking as part of the consideration and engagement process. Any description of the assessment and rationale for non-final decisions (particularly at non-statutory stages of a potential project) must be understood in that context. There can be no settled view at this stage of the process. The duty on NGET to consider how a pressing need for more transmission capacity, which is in the national interest, is best provided requires a process a part of which potential alternatives are judged to be less likely to meet the statutory requirements and are for now not progressed through the development of a solution. This need to narrow options, subject to ongoing back-check and reconsideration, is an inevitable part of any method of meeting the identified need for more capacity.

There is, in this case, a twin imperative for additional transmission capacity. First, the need to ensure that there is the capacity to secure continuity of service consistent with the main duty of NGET and the relevant technical capacity documentation. Second, the need to ensure that the UK meets its ambitious carbon neutral targets by having the ability to bring ashore, electricity generated offshore. The existing transmission infrastructure is simply not sufficient to meet these needs.

The way in which transmission capacity is selected and provided engages the statutory duties referred to above. There is a duty in considering transmission options to have regard to providing transmission in an economic way and to have regard to the impact of transmission equipment on the environment, including visual and landscape impact.

Transmission costs are also clearly relevant to the overall price of electricity to the consumer and thus to the economic supply of electricity. There is also interest in the broad consistency of decision making and policy approach from project to project. The Government seeks to provide this consistency of broad approach by issuing specific nationally applicable guidance to the electricity infrastructure companies in the form of the EN-5 National Policy Statement.

EN-5 provides that Government does not believe that development of overhead lines is generally incompatible in principle with developers' statutory duty under section 9 of the Electricity Act, to have regard to amenity and to mitigate impacts. It states that in practice, new above ground electricity lines, whether supported by lattice steel towers/pylons or wooden poles, can give rise to adverse landscape and visual impacts, dependent upon their scale, siting, degree of screening and the nature of the landscape and local environment through which they are routed. It also advises that for the most part these impacts can be mitigated, however at particularly sensitive locations the potential adverse landscape and visual impacts of an overhead line proposal may make it unacceptable in planning terms, taking account of the specific local environment and context.

The extant new draft EN-5 deals specifically with bringing offshore generation onshore. It provides that: the scale of offshore transmission infrastructure required to support the Government's offshore wind development targets means that a substantial amount of new onshore network infrastructure will be required, including network reinforcements, to enable transmission of the domestic and international offshore power flows coming onshore. It repeats the advice that Government does not believe that development of overhead lines is incompatible with duties in relation to amenity and impact and states that it is the Government's position that overhead lines should be the strong starting presumption for electricity networks development in general, this presumption is reversed only when proposed

developments will cross part of a nationally designated landscape (i.e., National Park, Broads, or Area of Outstanding Natural Beauty).

NGET is required to have regard to this advice as part of its consideration when it develops proposals to meet transmission needs. Clearly, the draft advice is not yet perfected but insofar as it is consistent with other published national guidance it is a material consideration of some weight. Compliance with the relevant statutory duties, including the requirement related to economic provision, is ultimately regulated and overseen by Ofgem.

As part of and following on from NGET's recent consultation on East Anglia GREEN, we have provided (as an annex) information on the potentially feasible offshore strategic option to deliver the additional transmission capacity required, having regard to the duties and advice set out above and to other relevant matters. This information is not final and does not form part of any statutory process. It is provided voluntarily on that understanding and in the spirit of co-operation as a way of answering the questions posed by OffSET.

In summary, the capital costs of the options considered are as follows:

- AC onshore option (Norwich/Bramford/Tilbury) at 6.9GW £793.50m
- HVDC offshore (Norwich/Tilbury) at 4GW £2,028.20m
- HVDC offshore (Norwich/Tilbury) at 6GW £3,104.90m
- HVDC offshore (Norwich/Bramford/Tilbury) at 6GW £4,168.40m

With lifetime costs as follows:

- AC onshore option (Norwich/Bramford/Tilbury) at 6.9GW £1,136.00m
- HVDC offshore (Norwich/Tilbury) at 4GW ~~£3,769.00m~~ £2,475.00m
- HVDC offshore (Norwich/Tilbury) at 6GW ~~£5,654.00m~~ £3,713.00m
- HVDC offshore (Norwich/Bramford/Tilbury) at 6GW ~~£7,332.10m~~ £5,099.83m

The annex document explains why, at this early pre-statutory stage of consultation, the offshore strategic option is not being progressed for now. As no final decision has been made, and as the matter will be reconsidered and backchecked throughout the process, having regard to consultation responses and other relevant information, none of the conclusions should be seen as final.

Factors which have been considered in deciding options to be taken forward for now, include but are not limited to, the advice contained in the adopted policy that overhead lines are not inconsistent with NGET's statutory duty. This is on the potential for mitigation of on-shore options including undergrounding - where justified and feasible, based on costs and economics, with the offshore option being several billion pounds more expensive than reasonable onshore options.

We strongly encourage local communities to continue to engage with us. Consultation feedback and local knowledge will help us to develop the best project possible, while supporting the ambition of the country to achieve targets for clean power, efficiently, economically, and quickly. The next phase of consultation will include detailed information showing how we have developed the scheme in response to the feedback received, as well as providing greater detail on the route of the onshore corridor presently selected to be taken forward, and how we will be mitigating impacts on local communities living in close proximity.

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We fully commit to doing what we can to mitigate impacts where we can, and where our regulatory framework allows.

We recognise the complexity of these issues and would welcome further round table discussion to ensure mutual understanding,

Yours sincerely,


Project Director
East Anglia GREEN

This letter was updated and republished in January 2023 with updated lifetime cost figures

Annex:

NGET answers to questions raised by OffSET

Q. East Anglia GREEN comparison of preferred onshore and offshore options considered.

The Corridor Preliminary Routeing and Siting Study (CPRSS) published in April 2022 to support the recent non-statutory consultation sets out in section 1 details of the need case for the project and technologies considered to make the connection.

All strategic options identified as part of the CPRSS (April 2022) were reviewed and checked. This work is subject to ongoing back-check and review and will continue to be reviewed.

Within the CPRSS, together with its technical appendices and referenced documents, there is a large amount of detail, analysis and explanation that fed into the summary documents and summary chapters within the CPRSS itself along with additional consultation material. It is important to note that those documents and indeed any others that are produced are all part of an ongoing iterative process to narrow down the huge list of potentially feasible options. That process is ongoing and will rightly remain ongoing as is required of us under the regime laid down by Parliament in the form of the Planning Act. Any report can only speak to the knowledge gained at that point in time. With new information (especially new information that comes to light as part of the various consultation stages) new analysis will be undertaken as part of a back-check to see if the previous analysis and resulting preliminary decisions are still valid. If we need to change a previous decision then we will and the reasons for doing so will be made transparent in whatever report we need to publish at that point in time, and all in accordance with the requirements that Government have placed upon us.

The CPRSS explains why, at the early pre-statutory stage of consultation, the offshore strategic options were not being progressed for now. As no final decision has been made and as the matter will be reconsidered and backchecked throughout the process having regard to consultation responses and other relevant information, none of the conclusions should be seen as final.

An early part of the process to evaluate potential strategic options is to identify and understand the need for the connection/reinforcement. The electricity industry in Great Britain is undergoing unprecedented change. Closure of fossil fuel burning generation and end of life nuclear power stations means significant additional investment in new generating and interconnection capacity will be needed to ensure existing minimum standards of security of supply are maintained.

Growth in offshore wind generation and interconnectors to Europe have seen a significant number of connections planned in the East Anglia and south-east coastal areas of England. The Government's commitment to Net Zero by 2050 has strengthened the likelihood of the majority of these connections progressing to delivery.

The existing transmission network infrastructure in the East-Anglia and South-East areas was not originally designed to accommodate such large volumes of generation capacity and transmission circuits to provide both connections for those new customers and to ensure that

power can be transferred securely to the onshore demand centres to meet the needs of GB electricity customers.

To resolve the need to increase capacity of the National Electricity Transmission System (NETS) to remain compliant with Section 9 of the Electricity Act “the Act” and Standard Condition D3 (Transmission system security standard and quality of service) of National Grid Electricity Transmission (NGET “The Company”) Transmission licence, the company undertook a series of assessments to establish an option which both satisfies the National Policy statements EN-1 and EN-5 and requirements of Section 9 of the Act and Standard condition D3.

Factors which have been taken into account in deciding which options are to be taken forward for now include, but are not limited to, the advice contained in the adopted policy EN5 (overhead lines are not inconsistent with NGETs statutory duty on the potential for mitigation of onshore options, including undergrounding where justified and feasible), and on the basis of costs and economics with the offshore option being several billion pounds more expensive than reasonable onshore options.

The options were evaluated against the following topics:

- a. Technical
- b. Cost/Lifetime cost
- c. Environmental and Socio Economic (Landscape and Visual, Historic Environment, Biological Environment, Physical Environment, Marine Environment (where appropriate), Settlement and Population, Tourism and Recreation, Land Use, Infrastructure and Shipping/Navigation (where appropriate)).

NGET considered that all options were treated equally in achieving delivery in the same timescales to meet the need.

The preliminary conclusions from our early strategic optioneering work identified that any likely feasible offshore strategic option would involve new offshore transmission connections between the existing substation at Norwich Main and the existing Tilbury substation (approximately 220 km).

Additional infrastructure required for the offshore option includes:

- Extensions at existing substations at Norwich Main and Tilbury
- HVDC options require a convertor station at each end similar in size to a large DIY warehouse. For 4GW, 2 convertor stations are required at each end and for 6GW, 3 convertor stations are required at each end
- It was anticipated that convertor stations would be sited in the locality of the existing substations depending on suitable site availability
- Connections would be required from the substations to the convertor stations and then on to the coast (routes/landfall would need to take account of environmental considerations)

HVDC offshore options would be limited by the largest technology available for submarine DC cables currently being developed at 2000MW (2GW). Each convertor would require 2 cables to be installed between each convertor with land installation to coastal landing points and

submarine cabling, crossing many other services and needing to be carefully routed to avoid marine designations. The convertor stations can have a large visual impact on local communities, the circuit itself is not visible and does not have the visual impact that overhead lines have. HVDC links are controllable and use a control system to respond to system conditions which has advantages in controllability, however response to very fast transient faults can lag that of an AC system.

Environmental considerations summary for the offshore option:

- Two nationally designated landscapes (Broads National Park and Suffolk Coasts and Heaths AONB). Impacts both direct and on setting from buried cables (both temporary and permanent) and convertor stations
- Scheduled monuments distributed throughout the study area which includes sites dating from prehistoric period onwards
- European and national designated sites unlikely to be avoidable particularly at landfalls
- Six Country Parks - four through the northern area and two to the south
- Significant amount of infrastructure including numerous existing/proposed subsea cables/pipelines and offshore wind farms with associated substations and cables
- Thames Estuary - large volumes of sediment deposited during glacial times and subsequent movement by sea has created large features (sand banks/sand wave fields) which have direct impact on bathymetry profile of Estuary. Continuing shifting/migration of the sand banks and channels
- Crossing offshore infrastructure may lead to unacceptable reduction in water depth presenting a hazard to vessels in areas of shallow water
- Thames is a key navigation route for both freight and passenger shipping. Over 10,000 ships per year are recorded to be transiting the Thames
- A number of channels are dredged for navigation to maintain an appropriate safe depth of water. Dredging would both pose a risk to cable and safety concern for the dredging works

Onshore vs. Offshore cost summary:

Updated January 2023

Item	Onshore AC	Offshore DC	Offshore DC	Offshore DC
	Norwich to Bramford (AENC) + Bramford to Tilbury via customer substation (ATNC)	Norwich to Tilbury Does not connect customers (add >£500m approx)	Norwich to Tilbury Does not connect customers (add >£500m approx)	Norwich to Bramford and Bramford to Tilbury Does not connect customers (add >£500m approx)
Capacity (GW)	6.9	4.0	6.0	6.0
Length approx . (Km)	180	220	220	270
Capital Cost (£m)	793.50	2,028.20	3,104.90	4,168.40
Lifetime cost (£m)	1,136.00	2,475.00	3,713.00	5,099.83

Summarised below are a number of important factors that we took into account as part of our evaluation to identify a potential offshore strategic option:

- HVDC meets current need (4GW) for current connections, with capital cost £2,028.20m and lifetime cost of ~~£3,769.00m~~ £2,475.00m. Future connections require the higher HVDC cost with additional 2GW (6GW overall) with capital cost £3,104.9m and lifetime cost of ~~£5,654m~~ £3,713.00m, to match the capacity available on the AC onshore option
- For full like for like with the AC onshore option, the HVDC solution would need to be a multi-terminal design (three additional 2GW convertors located at Bramford and cabling 50km from offshore). Additional capital cost of £1,063.5m (3 x 2GW convertors + 3x50km DC cable pairs) on top of the 6GW solution cost of £3,104.9m, a total capital cost of £4,168.4m and total lifetime cost of ~~£7,332.10m~~ £5,099.83m.
- The additional flexibility provided by the AC solution - at a cost of £10s of millions connecting to Bramford, can be justified by the system benefits gained. However, the Direct Current (DC) alternative could not justify such costs and therefore DC circuits would only be directly connected to Tilbury, with the loss of additional flexibility and benefit of connections at Bramford.
- Offshore HVDC option does not enable connection of North Falls and Five Estuaries Wind Farms (2GW). To make an offshore connection, the link would require the additional cost of HVDC convertor station, AC substation, offshore HVDC platform, Offshore AC platform with an additional capital cost of > £500m
- The onshore option best supports the regulatory, legislative and policy framework within which we are required to operate
- The onshore option for East Anglia GREEN is the most economic solution whilst also supporting the connections for Sizewell, North Falls and Fives Estuaries
- North Falls and Five Estuaries have signed agreements to connect into the new substation near Lawford, Essex. If the connection location for this low carbon generation changes, we will backcheck and review the proposed substation site and route

The option that currently best meets NGET obligations under Section 9 of the Act and aligned with EN-1 and EN-5 is:

- AENC – OHL Norwich Main to Bramford with capital cost £312.3m and lifetime cost of £505m; plus
- ATNC – OHL Bramford via a new substation to Tilbury with a capital cost £481.2m and lifetime cost of £631m;

Total Capital Cost of £793.5m and lifetime cost of £1,136m

This is compared with the HVDC subsea alternative able to provide the same electrical capacity (but not with the same system benefits as the AC option) as the OHL between Norwich and Tilbury proposal of circa 6GW capacity.

Subsea with capital cost £3,104.9m and lifetime cost of ~~£5,654m~~ £3,713m.

The capital and lifetime costs between the alternatives are substantial and would be further supplemented by additional costs to make connections for Five Estuaries and North Falls. To make an offshore connection into the link would require the additional cost of HVDC convertor

station, AC substation, offshore HVDC platform, Offshore AC platform with an additional capital cost of > £500m.

For more information about NGET's legal obligations, requirement for development consent, technology options and economic appraisal please refer to the Strategic Options Technical Appendix published on our website.

Q. Will the community have an opportunity to comment on the offshore option?

As we scope our projects, we consider numerous technology solutions. Offshore solutions were considered as part of our strategic proposal to upgrade the network in East Anglia and are part of our preliminary recommended solution. National Grid's appraisals, which were based on our knowledge of the network, understanding of the capacity and costs of developing subsea links as well as evaluation of the environmental and socio-economic implications, reached a preliminary conclusion that, on balance, the right solution was an offshore DC link between the Sizewell area and Kent (Sea Link) in combination with onshore reinforcement between Norwich and Tilbury (East Anglia GREEN). We presented our evaluation work and our preliminary preferred solution at the recent non-statutory consultation, which was an opportunity for members of the public to comment (which they did).

It would have been disingenuous for us to present an offshore option to the public for consultation feedback, knowing this did not comply with the framework requirements.

As noted, before, decisions made will be reconsidered and backchecked throughout the process, having regard to consultation responses and other relevant information (policy and regulation), none of the conclusions should be seen as final. Further opportunities to provide feedback are to come.

We carefully consider comments and will publish a feedback report at our next consultation stage. This will set out information on the feedback received and our responses. We recognise the strength of feeling locally, and that people may feel uncertain about what the project could mean for them.

We continue to be open-minded to all options (on-shore and off-shore) that have the reasonable potential to comply with the obligations set out under our licence and by Ofgem to be economic and efficient.

We strongly encourage local communities to keep engaging with us. It is consultation feedback and local knowledge that will help us to develop the best project possible, while supporting the ambition of the country to achieve targets for clean power, efficiently, economically, and quickly. The next phase of consultation will include detailed information showing not only how we have developed a proposed solution in response to the feedback received, but more importantly will provide greater detail on the route of the proposed onshore corridor presently selected to be taken forward and how we will be mitigating impacts on local communities living in close proximity. We fully commit to doing what we can to mitigate impacts where we can, and our regulatory framework allows.

We are also working closely with statutory consultees, including local authorities, to develop our proposals and will hold a further statutory public consultation which will take place next year taking account of local feedback as we progress through the Nationally Significant

Infrastructure Project (NSIP) process ahead of submitting a Development Consent Order (DCO) for consideration in 2024.

Q. The proposed Essex windfarm extensions (North Falls and Five Estuaries) have said they are looking to work with both NGET and National Grid Ventures (NGV), to coordinate their projects. It would be helpful to understand, without prejudice, the range of potential outcomes from these discussions, particularly as it appears one outcome may be that the wind farms do not connect in Essex at all, with significant implications for the design and delivery of East Anglia Green.

The department for Business Energy and Industrial Strategy (BEIS) are running an 'early opportunities' process to examine the opportunities to co-ordinate these windfarm connections with interconnection and Sea Link. We do not anticipate this fundamentally changes the need to reinforce the transmission boundary South of Bramford, but of course we will examine our proposals in the light of any change to customer connection arrangements. .

Q: Our understanding is that converter stations to switch from Alternating Current (AC) to Direct Current (DC) and vice versa, cannot be built on offshore platforms because of their size, and can only be built on artificial islands or onshore, is this correct?

Converter stations can be built on offshore platforms. A number of offshore windfarm developers are doing this, and offshore platforms are included as part of Electricity System Operator's (ESO) Holistic Network Design (HND). NGET are already aware of 1 gigawatt (GW) converters located on offshore platforms. For higher capacities of high voltage direct current (HVDC) link (i.e. Sea Link is 2GW) you may require very large platforms or multiple interconnected ones.

Q: What are the principle technical/engineering challenges remaining to the delivery of an offshore network?

The distances involved in developing an offshore network mean that it would need to be predominantly HVDC technology. The principal challenges for HVDC are the capacity of offshore cables which are currently limited to 2GW, meaning multiple links would be required to match the capability of onshore circuits.

Q: To what extent is it essential to be able to build a multi-vendor offshore grid in order to limit consumer costs? To what extent does this need have the potential, to slow the roll out of an offshore network?

It is NGET's understanding that today a multipurpose HVDC network would need to be built by a given supplier. This is due to 'intellectual property' – for instance the control and protection software is developed independently and is bespoke to each supplier. There is indication of attempts to resolve interoperability issues between different suppliers, as there has been for some time, but this may yet take time to resolve. In the meantime, if different companies wish to build an HVDC network they would need to procure their infrastructure from the same supplier.

If the procurement is not undertaken jointly and simultaneously then a given supplier would have a monopoly over any further parties wanting to add a connection to the network. This poses the following problems:

- A monopoly in which the supplier was able to unfairly charge a higher cost.
- Undertaking joint procurement activities with other organisations, including ones based abroad, in itself proving more challenging.
- The pressure on any one given supplier being tasked with the delivery of an HVDC network causing delays – resource, manufacturing and other logistical constraints may be significantly strained.

Decarbonisation of the energy system along with the urgent need to increase security of energy supply is a significant challenge facing our country and involves a radical change in where our energy comes from. It is important that this transition is cost effective for consumers, particularly given the current pressures on household budgets.

Government has set clear targets for the development of clean power, including up to 50GW of offshore wind by 2030 and National Grid is at the heart of delivering this ambition, which requires us to reinforce our network across the country. East Anglia GREEN is identified as a key project on this journey. . Our current preferred proposal for East Anglia GREEN was shaped after very careful consideration of all our duties and responsibilities, alongside current planning policy, as set by Government.

Q. Has a preliminary cost estimate been undertaken for NOA option SCD2?

A very high-level indicative cost estimate has been calculated to help inform the Network Options Assessment (NOA) of approximately £1.2 billion.

Q. Additional issues raised by OffSET to be responded to by the Office of Gas and Electricity Markets (Ofgem) and ESO

In addition to the responses provided by NGET above, members of OffSET also raised a number of issues, the answers to which do not fall within NGET's remit.

Q. In previous discussions, Ofgem have referred to concerns regarding market weakness in the procurement of some technologies needed for an offshore grid, would it be possible to elaborate on these issues and the potential or expected impact on consumer costs?

Q. It is notable that SCD2, a second offshore link between Suffolk and Kent, does not appear in the refreshed NOA. Does the proposed NOA option LRN4, between Lincolnshire and Hertfordshire, effectively replace that project?

These two questions are to be answered separately by Ofgem and ESO, respectively, who are the bodies responsible.

Appendix H

In response to EXQ2, Pylons East Anglia have the additional comments

HE 2.8

The Applicant's approach to scoping out The Grindle House, Canes Farmhouse, Godbolts Farmhouse/Farmstead and The Grange is not consistent with the agreed methodology for the historic environment assessment and is not supported by the level of evidence required to justify exclusion from further assessment. Chapter 11 of the ES confirms that the scope of the historic environment assessment was informed by the 2022 EIA Scoping Report, the Scoping Opinion, and consultation with relevant consultees, and that the scope is summarised in Appendix 5.2, with National Grid's responses to the Planning Inspectorate's comments provided in Appendix 5.1. It also confirms that the assessment of built heritage includes setting and indirect effects, and crucially, that the methodology was informed by Historic England's Good Practice Advice 3 – The Setting of Heritage Assets.

Against that agreed framework, the key issue that Pylons East Anglia has with the scoping out of these listed buildings is not whether the Applicant repeatedly cites GPA3, referred to site visits, or stated that the assessment is "*proportionate and appropriate*", but whether the information actually presented provides a clear, reasoned and evidence-led justification for scoping these assets out.

In accordance with the Scoping Opinion published by the Planning Inspectorate on 14 December 2022, scoping out is only appropriate where sufficient information demonstrates that likely significant effects would not arise and where the reasoning is clearly explained in the ES. Yet in each of these four cases, whilst the Applicant identifies that setting makes an important contribution to significance (namely historic farmstead relationships, coherence of associated buildings, wider agricultural landscape context, group value, and historical/functional associations) NGET moves directly to the conclusion that the setting is confined to the immediate farmyard, curtilage or "immediate landscape", and does not extend to the Order Limits. This reasoning is flawed and Pylons East Anglia would contend that the conclusions are asserted (with the purpose of scoping out as many heritage assets as possible) rather than demonstrated, as required by the Planning Inspectorate and Historic England.

For The Grindle House, Canes Farmhouse and The Grange, the Applicant's assessments expressly acknowledge that the surrounding agricultural landscape and associated historic relationships make a considerable contribution to significance, yet they provide no substantive analysis of how that setting has been geographically or functionally established, nor why it should stop short of the Order Limits. For Godbolts Farmhouse/Farmstead, the assessment similarly recognises the importance of the surviving historic farmstead group, relationship with the potential DMV, and agricultural context, and even acknowledges the possibility of views towards the Project yet still concludes - without evidential analysis - that the setting does not extend to the Order Limits. In each case there is an absence of any robust explanation of intervisibility, key views, spatial relationships, experiential character, historic landscape continuity, as required by GPA 3, or the extent to which intervening features genuinely sever the contribution made by setting, as opposed merely to filtering or moderating it.

That omission is material. The Applicant states that the ES assesses setting and indirect effects on built heritage and identifies GPA3 as part of the guidance informing the assessment. The agreed scoping basis therefore requires more than a bare subjective statement that setting has been considered: it requires sufficient evidence to explain why no realistic potential for likely significant effect arises. Merely stating that setting is "restricted" to the farmyard or immediate landscape, or that modern development has already affected value, is not an adequate substitute for a staged assessment of the contribution

made by the wider setting and whether change within that setting may affect significance. Furthermore, existing development does not, of itself, define or truncate the extent of setting; nor does enclosure by hedges, roadside character, or partial screening justify excluding wider rural context from consideration where that wider context is itself recognised as contributing to significance. This is especially true in relation to farmhouses and farmsteads which, by their very nature, have a wider setting than many heritage assets due to the historic and functional relationship with the wider agricultural landscape.

In addition, the Applicant has consistently failed to assess how the land (on which the infrastructure will be constructed) currently contributes to the significance of the listed buildings, in contravention of Local Policy for all councils along the route, the NPPF and GPA 3 step 2.

The Applicant's Comments on Pylons East Anglia Response to ExQ1 does not overcome any of these failings. The Applicant's repeated phrase that the five-step GPA3 approach was followed (which is debateable) and that site visits, aerial imagery or viewpoint work were undertaken, does not resolve the fundamental deficiency that the conclusions for these four assets (and thousands of other assets beyond 250m of the proposed route) has been based upon insufficient information and analysis. The issue is not lack of reference to guidance, but lack of demonstrable application of that guidance in a way that justifies the scoping out of the majority of assets prior to the EIA being undertaken. Pylons East Anglia would reiterate that, in accordance with the agreed principles (Scoping Opinion: Proposed East Anglia Green Energy Enablement (GREEN) Case Reference: EN020027), heritage assets may only be scoped out where the information provided justifies that approach and where the ES clearly explains the reasoning. On the evidence presented for these four assets, that threshold has not been met.

In consequence, the scoping out of The Grindle House, Canes Farmhouse, Godbolts Farmhouse /Farmstead and The Grange (and a large majority of other assets) is premature and unsupported. The assessments do not provide a sufficiently robust understanding of the extent of setting, nor a clear and reasoned justification for their settings stopping short of the Order Limits. Furthermore, the applicant's assessment fails to engage with the exceptional scale of the proposed infrastructure and the consequences this has for heritage setting and significance. The height, mass and extensive visibility of the pylons would introduce a dominant and intrusive presence within the landscape, fundamentally altering the way in which heritage assets are experienced in their surroundings and, through that change to setting, causing a materially greater degree of harm to their significance than would typically arise from a standard application.

Pylons East Anglia would again assert, therefore, that these assets should not have been scoped out of further assessment, and a proportionate but properly evidenced assessment of likely setting effects is required in accordance with the agreed scoping methodology as stated in Chapter 11 of the ES, and Historic England's GPA3.

HE 2.9

The Examining Authority is respectfully invited to have regard to relevant ICOMOS guidance in assessing the effects of the Norwich to Tilbury project on the setting of heritage assets, particularly insofar as those effects arise cumulatively across an extensive landscape. The project comprises approximately 180 km of new transmission connection, including around 159 km of new overhead line carried on approximately 509 pylons, many of them substantial steel lattice structures typically in the order of 40–50 m in height, such that the scheme is not a localised intervention but a repeated and extensive physical presence across a very wide geographic area.

That scale matters in heritage terms because the principal issue is not simply whether an individual pylon is visible from an individual asset, but whether the repeated introduction of tall vertical infrastructure

across a broad swathe of countryside alters the wider surroundings that contribute to significance. NGET's own Historic Environment chapter recognises that the assessment must address setting and indirect effects on built heritage and setting effects on designated historic landscapes, and it links that assessment to shared heritage/LVIA viewpoints, demonstrating that the project's effects are understood by the applicant itself to operate at a landscape scale rather than solely at the level of isolated site-by-site change.

In that context, ICOMOS is directly relevant. It states that setting is the immediate and extended environment that contributes to significance and distinctive character, and that this includes not only physical and visual relationships but also wider cultural, historical and other contextual associations. It further explains that significance may derive from meaningful relationships with broader surroundings and from processes that have developed cumulatively and organically over time.

That guidance is particularly apt to Norwich to Tilbury because this proposal would introduce not one change, but a sequence of repeated overhead line structures through large areas of rural landscape in multiple local authority areas. In such circumstances, the harm to the historic environment is not adequately answered by a narrow, asset-by-asset visibility exercise alone; rather, the effect of the scheme must be understood in terms of how a widespread corridor of pylons, associated works and their enduring visibility can incrementally erode the contribution that open rural and agricultural landscapes, long views, uncluttered skylines, and tranquil settings makes to countless conservation areas, scheduled monuments, listed buildings of all grades, registered parks and gardens and non-designated heritage assets.

ICOMOS provides that planning decisions should include provisions to control the impact of incremental or rapid change on settings, and identifies significant skylines, sight lines and adequate distance from new development as key matters in avoiding inappropriate visual and spatial encroachment. It also states that the individual and cumulative impacts of change and transformation on settings must be monitored and managed, because incremental as well as rapid change can substantially or irretrievably affect the authentic contribution that setting makes to significance.

That is precisely the concern raised by Pylons East Anglia. The project's length, the number of pylons, and the repeated punctuation of the skyline and encroachment on the wider countryside mean that cumulative harm may arise not only from the effect of one structure on one asset, but from the repeated alteration of the wider historic environment over distance, changing the rural context into an infrastructure corridor. This is the kind of extensive and recurring change that international guidance recognises as capable of causing harm to setting even where any individual component is assessed as limited in isolation.

The more recent UNESCO/ICCROM/ICOMOS/IUCN Guidance and Toolkit for Impact Assessments in a World Heritage Context also supports that approach and is relevant even beyond World Heritage Sites. UNESCO states that the 2022 guidance can be used for all types of heritage places with proposed development, and Historic England explains that it represents the most up-to-date reference for impact assessment in this field and is capable of informing assessment within existing national processes, including EIA and standalone heritage assessments.

Its relevance here relates to the need for impact assessments to identify risks and alternatives before decisions are made, and should not fail to capture wider or harder-to-detect effects. That is particularly important for long linear infrastructure, where harm may emerge through the aggregation of many interventions across a broad area rather than through a single dramatic effect in one location. UNESCO has specifically highlighted the need for impact assessment tools that address such pressures and has

recognised the importance of assessing cumulative impacts in relation to large-scale development around heritage places.

This concern is reinforced by the earlier ICOMOS Heritage Impact Assessment guidance, which warned that standard EIA-style approaches may be inadequate if they treat heritage as a set of separate receptors without sufficiently assessing the place as a whole and the relationships between its attributes. That guidance expressly observed that, in such circumstances, cumulative impacts and incremental adverse changes may more easily pass undetected.

Applied to Norwich to Tilbury, the implication is clear. A methodology that considers heritage assets in a piecemeal way, or which scopes out assets without fully examining how the broad sweep of overhead line infrastructure alters wider rural context, risks understating the true effect of the scheme. For a project of this scale, the cumulative heritage effect lies not merely in isolated points of intervisibility between each heritage asset and the project, but in the repeated and extensive industrial change to the landscape in which heritage assets are experienced and understood.

Accordingly, the ExA is invited to treat the ICOMOS material as persuasive support for a significance-led and landscape-aware approach to setting, one that properly addresses cumulative harm arising from the extensive distribution, scale and repeated visibility of the pylons proposed as part of the Norwich to Tilbury project. That guidance supports the proposition that, for major linear infrastructure of this kind, conclusions on setting and significance are not robust unless they expressly address and provide an understanding of the consequences of incremental and cumulative landscape change over the route as a whole.

Appendix I

Written Submission on Behalf of Pylons East Anglia

Historic Environment: Rebuttal to the Applicant's Comments to REP3-134

Introduction

This document responds to the Applicant's comments on PEA Appendix F – Heritage Pylons East Anglia Response dated 10 April 2026 [REP3-134], as set out in Chapter 5 of 8.4.10.1 Applicant's Comments on Pylons East Anglia Response to ExQ1 in the Norwich to Tilbury examination (EN020027).

PEA considers it necessary to reply because the Applicant's comments do not, in PEA's respectful submission, properly answer the substance of the heritage concerns previously raised. Instead, the Applicant repeatedly relies on generic references to the methodology, to previous responses, and to the assertion that the assessments of heritage assets are "*proportionate and appropriate*".

The issues raised in REP3-134 related to whether that methodology has been correctly and consistently applied, and whether the Applicant has in fact demonstrated, in accordance with the NPPF and Historic England's GPA3, how setting contributes to significance and how the Project affects that significance.

This response is therefore not intended to repeat every point already made in REP3-134, but to explain why the Applicant's comments to REP3-134 do not resolve the central concerns previously identified. It should also be read as selective and illustrative only: PEA is a charity with limited resources and cannot reasonably provide a rebuttal to all the affected heritage assets. The examples addressed here are intended to assist the Examining Authority by highlighting recurring methodological weaknesses in the Applicant's heritage case, to demonstrate broader and recurring flaws in the Applicant's approach to the assessment of setting and the evaluation of the contribution that setting makes to significance, and the resulting assessment of harm. The fact that only selected assets are addressed in this submission should not be taken to mean that concerns arise only in those cases.

Policy and Guidance Context

The National Planning Policy Framework ("NPPF") requires applicants to describe the significance of any heritage assets affected by a proposal, including any contribution made by their setting, at a level of detail proportionate to the assets' importance and sufficient to understand the likely impact of the proposal on their significance. It also requires decision-makers to identify and assess the particular significance of any heritage asset that may be affected, including by development affecting its setting, so as to avoid or minimise conflict between the asset's conservation and any aspect of the proposal. The NPPF further provides that great weight should be given to the conservation of designated heritage assets, irrespective of whether harm amounts to substantial harm or less than substantial harm, and that a balanced judgement is required in relation to non-designated heritage assets having regard to the scale of harm or loss and the significance of the asset.

Historic England's *The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3 (Second Edition)* ("GPA3") sets out a staged approach to proportionate decision-taking. That approach requires:

- (a) identifying which heritage assets and settings are affected;
- (b) assessing the degree to which those settings contribute to significance or allow significance to be appreciated;
- (c) assessing the effects of the proposed development on that significance;
- (d) exploring ways to maximise enhancement and avoid or minimise harm; and

(e) making and documenting the decision. GPA3 also makes clear that setting is more than visibility alone and may derive significance from wider visual, spatial, functional, historical and associative relationships.

The Applicant's own Environmental Statement recognises that, where proposed development would affect the setting of a heritage asset, accurate representative visualisations may be necessary to explain the impact, and that the historic environment chapter is intended to assess setting and indirect effects on built heritage during construction and operation. The Environmental Statement also confirms that EN-1 paragraphs on heritage, including those relating to archaeological assessment, less than substantial harm and non-designated assets, informed the chapter.

Methodology

The Applicant places weight on the fact that its heritage methodology was discussed with Historic England and other consultees through the scoping and pre-application process. PEA accepts that the draft Statement of Common Ground between the Applicant and Historic England records extensive pre-application discussion on methodology, study areas, data sources and assessment approach, and that Historic England was broadly content with aspects of the methodology at a strategic level. Certain methodological matters were later recorded as agreed.

However, the same material also records that Historic England regarded representative wirelines as crucial to evidencing potential visual impacts on designated heritage assets. It does not demonstrate blanket agreement with every asset-specific assessment, every judgment about the extent of setting, or every level of harm reached by the Applicant. Agreement in principle to a broad methodology is not equivalent to agreement that the methodology has been correctly, consistently or adequately applied in each individual case

The Proper Meaning of "Proportionate" Assessment

PEA's concern is not with proportionality as a principle. The concern is that the Applicant repeatedly uses the phrase "*proportionate and appropriate*" as a substitute for transparent analysis and as a means of defending conclusions that have not been adequately reasoned against the policy and guidance framework.

Proportionality in heritage policy does not mean that assessment may be abbreviated, narrowed or omitted simply because the Applicant considers a significant effect unlikely. Rather, proportionality requires that enough information is provided to enable an informed decision to be made on the significance of the asset, the contribution made by its setting, and the effect of the proposal on that significance, as prescribed by the NPPF and GPA3.

In PEA's respectful submission, the Applicant too often uses the language of proportionality to justify a process whereby assets are first categorised by reference to the Applicant's own matrix, the likely level of effect is effectively capped by that matrix, and that capped outcome is then used as the reason not to undertake the more detailed setting assessment that might test whether the conclusion is sound. This is especially problematic in relation to non-designated heritage assets, where a balanced judgement is still required and sufficient information is still needed to understand the scale of harm and the significance of the asset.

The Applicant's Reliance on Methodology, Mitigation and Generic Assertions

A recurring feature of the Applicant's comments on REP3-134 is that they do not directly address the asset-specific criticisms raised by PEA. Instead, the Applicant frequently responds by referring back to its

own methodology, signposting earlier responses or simply asserting that the conclusion is “*proportionate and appropriate*”.

In PEA’s respectful submission, that is not sufficient. The fact that the Applicant refers back to its methodology is not an answer where the application of that methodology is itself under challenge. GPA3 makes clear that setting is not limited to whether land remains in the same use; it concerns the surroundings in which an asset is experienced and the extent to which those surroundings contribute to significance or allow significance to be appreciated. The fact that farmland remains farmland does not answer the question whether the introduction of 50m pylons and a substantial wirescape industrialises the experience of a rural heritage asset and harms the significance derived from its landscape context.

Likewise, repeated reference to vegetation or intermittent screening does not of itself justify a conclusion of negligible or low harm. GPA3 makes clear that views are only one component of setting. The contribution setting makes to significance may be visual, spatial, historical, functional or associative. Existing vegetation may filter views, but it does not remove the presence of large-scale permanent overhead line infrastructure within the setting of an asset. Furthermore, an assessment of how the asset is experienced within the landscape may include alternative views which are not impeded by vegetation or other features which the Applicant is relying on for mitigation.

Illustrative Examples of Asset-Specific Concerns

NDHAs, Farmsteads and Farmyard Groups

The Applicant’s position in respect of Washbrook Street (3160) NDHA is a clear example of the flaw identified above. The Applicant states that assets assessed as low or negligible value and located outside the Order Limits did not have a setting assessment undertaken because, in the absence of physical impacts, there was no potential for significant effects. In PEA’s submission, that is precisely the issue in dispute: where pylons and wires would dominate the immediate surroundings of a rural asset, a setting assessment is needed before it can properly be concluded that no significant effect could arise.

Similar concerns arise in relation to Canes Farmhouse (Grade II, 1036949) and Canes Farmstead (3052) NDHA, where the Applicant accepts that setting makes a considerable contribution to value but then simply asserts that that setting is restricted to the farmyard and immediate agricultural landscape and does not extend to the Order Limits. PEA respectfully submits that such a conclusion requires transparent explanation, particularly for a farmstead whose significance is closely related to its wider agricultural context.

The same point arises in relation to Bleak Hall Farmstead, where the Applicant appears to minimise the heritage effect of construction-phase groundworks on the basis that only a small proportion of land around the buildings lies within the Order Limits, notwithstanding the concern that the NDHA would be directly impacted by the proposed scheme..

Listed Farmhouses, Halls and Churches

In relation to Mott’s Farmhouse (Grade II, 1266736) and Motts Farmstead (4214) NDHA, the Applicant accepts that the setting makes a considerable contribution to significance and extends to the Order Limits, yet concludes that the Project would result in “no change” and “no harm” during operation. PEA respectfully submits that this conclusion is inadequately reasoned. The introduction of major overhead line infrastructure into the setting of a secluded farm complex cannot be dismissed by generic reference to retained countryside or mature vegetation, without a clearer explanation of why the rural and historic context of the asset is said to be unaffected.

Similar concerns arise in relation to Little Tey House (Grade II, 1266823) and the Barn to the South West of Little Tey House (Grade II, 1266779). The Applicant accepts that the setting makes a considerable contribution to value and extends to the Order Limits, but concludes that the effect amounts only to mid less than substantial harm. PEA's concern is that the visual evidence provided by the visualisations shows large pylons and wires in such close proximity to the listed buildings that the rural setting and the functional and historical relationship between house and barn and wider agricultural landscape are severely compromised. In those circumstances, the Applicant has not convincingly demonstrated why a higher level of harm is not appropriate.

The same issue arises at Wyfields Farmhouse (1337057) and the Barn (1111646) Grade II, where the Applicant focuses on whether the Project would diminish the understanding of the asset as the heart of a working farm complex, but does not properly address the effect on the wider farmland and historic landscape setting in which that working complex has traditionally been experienced.

At Bragg (Grade II, 1267411), and by extension the wider group including Gull Cottage and Broadgreen Farmhouse (also Grade II), the Applicant again relies on partial screening, mature vegetation and retained rural land beneath the line. PEA respectfully submits that this does not assess the heritage impact of the scheme on the significance of these heritage assets: the issue is whether the landscape setting has been harmed as a result of the industrialisation of the landscape, not simply whether agriculture can continue beneath it.

Likewise, in relation to Sudbury's Farmhouse (Grade II, 1170946) and Wardropers Farmhouse (Grade II, 1293259), the reliance on vegetation screening fails to address the more fundamental point that the historic and functional relationship between these farmhouses and their surrounding agricultural land would be materially altered by very large pylons in close proximity.

In relation to Bounds Farmhouse, Ardleigh (Grade II, List Entry No. 1147743), the Applicant's conclusion that the asset would experience only mid less than substantial harm materially understates the true effect of the Project. Bounds Farmhouse would be affected by pylons, cable works, crossing works, drainage works, a permanent bund, the East Anglia Connection Node Substation and associated haul road infrastructure - all in very close proximity, fundamentally altering its rural agricultural setting and profoundly impacting the way in which the listed building is experienced. PEA is concerned that the Applicant's assessment does not properly reflect the extent of that encroachment, nor does it transparently demonstrate, in accordance with the NPPF and GPA3, how the contribution made by setting to the significance of the asset has been assessed and why the resulting harm is said to remain at only a mid level of less than substantial harm. In PEA's submission, the harm to Bounds Farmhouse is greater than the Applicant acknowledges

In relation to Great Warley Hall (Grade II, 1123449), its associated barns (Grade II) and the moated site (NDHA), the Applicant again places weight on retained countryside beneath and around the proposed overhead line. PEA respectfully submits that again fails to assess the impact of the scheme on the significance of the heritage assets as the very landscape that contributes to the significance of those assets would itself be irrevocably altered by the Project.

Similar concerns apply to Dunton Hall (Grade II, 1338380) and the associated moat (NDHA) and DMV (NDHA). The Applicant acknowledges the relationship between those assets as part of a medieval landscape, but then concludes that the impact is low adverse and the residual effect minor adverse. In PEA's submission, the effect of pylons TB227-TB231 on the change of the contribution that the agricultural and historic landscape makes to these assets has been omitted from assessment.

Kenningham Hall (Grade II, 1373056), together with the associated DMV (1010) and related outbuildings to the farmstead, also gives rise to a concern about the adequacy of the baseline itself. PEA's concern is

that historic buildings associated with Kenningham Hall, shown on nineteenth-century mapping and potentially curtilage listed, do not appear to have been properly recognised despite lying within the draft Order Limits and beneath the proposed line. This is despite a walkover survey in addition to a supposed desk based assessment. If the baseline information is incomplete, the resulting assessment cannot properly be said to be robust, proportionate or appropriate.

In relation to the Church of St Mary (Grade II, 1122253), the Applicant accepts that the setting extends to the Order Limits and that pylons TB228–TB231 would be introduced approximately 200 metres away, yet concludes that the effect would amount only to mid less than substantial harm. PEA respectfully submits that the photomontages demonstrate a more severe compromise to the church's historic rural setting than the Applicant acknowledges. This is an example where the Applicant claims to have undertaken a settings assessment in accordance with GPA3 but in reality has failed to show how the large-scale infrastructure (which will dominate the church and its setting) will fundamentally alter the way in which the church is experienced and appreciated.

Similar concerns arise in relation to Flordon Hall and the associated piggery and barn, where the Applicant relies on the orientation of the principal elevation and on intervening vegetation and buildings. PEA's point is that the associated farm buildings are heritage assets with agricultural settings in their own right and should not be treated merely as subordinate to the Hall's own assessment has been ignored by the Applicant.

In relation to Feeringbury Manor (Grade II, 1306710) and the associated outbuilding, barn and waterwheel, Historic England considered that the Applicant's assessment appeared too focused on outward views from the farmstead and that the visual material suggested greater dominance of pylons when approaching the asset complex, particularly from the eastern entrance to the farmyard and potentially from the south. PEA respectfully submits that the Applicant has not meaningfully addressed that concern and has instead continued to rely on mature vegetation, topography and distance so as to maintain a lower harm conclusion. That approach appears to underplay the importance of arrival, approach and experienced setting for a historic farm complex of this kind.

Conservation Areas

The same broader methodological weakness arises across multiple conservation areas, including Tacolneston Conservation Area, Winfarthing Conservation Area, Mellis Conservation Area, Ardleigh Conservation Area, Ford Street Conservation Area, Great Waltham Conservation Area, Little Waltham Conservation Area (including Langleys). In each of these cases, PEA's concern is that the contribution made by the surrounding rural landscape, historic approaches, agricultural setting, common land, or the experience of the conservation area as a whole has been undervalued, with the result that the level of harm has been underestimated.

That concern is especially acute at Mellis Conservation Area, where Historic England itself identified the common at the heart of the conservation area and the agricultural setting of that common as being of particular importance, and expressed concern that the visual material did not fully represent the full impact on the landscape setting and that the harm might be closer to mid-level less than substantial harm than the Applicant had concluded. Regardless of this response, the Applicant has relied on its original assessment which it continues to claim as fact rather than subjective.

Similar issues arise at Ford Street Conservation Area, where the Applicant concludes mid less than substantial harm, notwithstanding PEA's concern that the visual evidence indicates severe harm to setting; and at Ardleigh Conservation Area, where PEA respectfully disagrees with the Applicant's conclusion that the asset is subject only to a low adverse magnitude of impact and minor adverse

significance of effect, given the concern that large infrastructure would surround the conservation area on three sides, dominating and ruining the idyllic surroundings of the village and severely affect its setting.

Planning Balance and the Treatment of Harm

PEA recognises that the Project is advanced within the policy framework of the National Policy Statements for energy infrastructure and that the Applicant seeks to rely on the strong starting presumption in favour of overhead lines under EN-5 and the treatment of critical national priority infrastructure under EN-1. EN-1 also states that the Secretary of State must decide applications in accordance with the relevant NPSs unless specified exceptions apply, and that applicants should ensure that their applications and supporting material are consistent with those NPS requirements.

However, those policy considerations do not displace the need for a lawful, evidence-based and properly reasoned assessment of heritage harm in the first place. The existence of urgent need or policy support for a form of infrastructure does not eliminate the requirement to understand the significance of affected heritage assets, the contribution made by their setting, and the true scale of harm that would arise.

Nor does the fact that the Applicant has concluded that no substantial harm would arise mean that the underlying assessment should be accepted without scrutiny. The NPPF requires great weight to be given to the conservation of designated heritage assets irrespective of whether harm is substantial or less than substantial, and any harm to significance requires clear and convincing justification. PEA respectfully submits that, where the Applicant has under-assessed the contribution of setting to significance, the planning balance is correspondingly skewed because the true scale of heritage harm has not been properly accounted for.

Conclusion

The examples above demonstrate a recurring and material weakness in the Applicant's heritage case.

PEA's submission is that the Applicant too often relies on formulaic references to methodology in place of proper assessment, while continuing to assert, on the basis of its own inadequate analysis, that its conclusions are proportionate and accurate. The Applicant repeatedly invokes retained agricultural use, partial screening and high-level policy compliance, rather than transparently demonstrating the staged reasoning required by the NPPF and GPA3.

In many cases, the Applicant does not adequately show:

- (a) how the setting (and particularly the land on which the project is to be built upon) contributes to the significance of the relevant asset;
- (b) how the Project alters that contribution;
- (c) why the resulting harm should be categorised at the level asserted; or
- (d) what meaningful measures have been explored to avoid or minimise that harm.

PEA respectfully requests that, where appropriate, the Applicant be required to provide clearer asset-by-asset explanation of:

- (a) the contribution made by setting to significance;
- (b) the effect of the proposal on that contribution; and
- (c) the evidential basis for the level of harm concluded.

Finally, PEA repeats that this submission represents only a limited snapshot of a much wider historic environment case. PEA is a charity with limited resources. The fact that only a selection of heritage assets is addressed here should not be taken as implying that concerns are confined to those examples alone.

Annex A – Summary of elective Asset by Asset response to Applicant’s comments to REP3-134

- Bounds Farmhouse (1147743): The Applicant has failed to properly assess the significant impact to this listed building as result of the introduction of multiple elements of the project at close range, which PEA believes will cause substantial harm to the asset
- Manor Farmhouse, (1049998) and associated NDHA farmstead: The Applicant’s request for an NDHA identification number does not answer the substance of the point made, namely that the associated farmstead and its agricultural setting require a proper assessment of the contribution made by that setting to significance, rather than a procedural deflection.
- Roydon Hall (1033215): The Applicant’s response focuses on alleged imprecision in asset IDs and viewpoints, but this does not address the heritage concern itself, namely whether the effect of the Project on the Hall’s setting has been correctly understood and whether the assessment has been underplayed by over-reliance on methodology rather than substance.
- Creting Hall (1352073): The Applicant says that the matter has “already been addressed”, but mere cross-reference to earlier documents is not a substitute for explaining why the level of harm concluded is justified having regard to the setting contribution and the effect of major overhead line infrastructure on that setting.
- Feeringbury Manor (1306710) and associated outbuilding, barn and waterwheel (Grade II): PEA’s concern is that the Applicant has failed properly to account for the way the pylons would be experienced on approach to the Manor complex, particularly from the eastern entrance and potentially from the south, and has instead relied on vegetation, topography and distance so as to maintain a lower harm conclusion notwithstanding Historic England’s concern that harm may be closer to a mid-level of less than substantial harm.
- Flordon Hall (1050698), associated piggery (1172231) and barn (1373055): The Applicant relies on the principal elevation facing east and on intervening vegetation and built form, but PEA’s concern is that the photomontage demonstrates greater intervisibility and harm than acknowledged and that the piggery and barn are farm buildings with agricultural settings in their own right, not merely subsidiary elements to be subsumed within the Hall’s own assessment.
- Bleak Hall Farmstead (NDHA): The Applicant appears to minimise the effect of construction-phase groundworks on the basis that only a small proportion of land around the buildings lies within the Order Limits, but the key point is that the NDHA would be directly impacted, and the response does not convincingly show how that direct impact has been assessed by reference to the asset’s actual significance.
- Wyfields Farmhouse (1337057) and Barn (1111646): The Applicant focuses on whether the Farmhouse would remain legible as the heart of a working farm complex, but PEA’s concern is that the Project materially harms the contribution made by the surrounding farmland and wider historic landscape setting in which the Farmhouse and Barn have traditionally been experienced as part of that complex.
- *Moor Hall (1237175)*: PEA’s concern is that the Applicant states that GPA3 has been used in the assessment of this heritage asset, but the way in which the reasoning is presented, particularly in relation to how setting contributes to significance and why the harm conclusion reached, would indicate otherwise.
- Canes Farmhouse (1036949) and Canes Farmstead (NDHA): The Applicant accepts that setting makes a considerable contribution to value, yet simply asserts that the setting is confined to the

farmyard and immediate agricultural landscape and does not extend to the Order Limits; PEA's concern is that this is an unsupported conclusion for a farmstead asset whose significance is plainly tied to its wider agricultural surroundings.

- Washbrook Street (NDHA) :The Applicant's decision not to undertake any detailed setting assessment because the asset is of low or negligible value and lies outside the Order Limits is, in PEA's submission, circular: where pylons would dominate the immediate surroundings, an actual setting assessment is required before the absence of significant effects can properly be asserted.
- Mott's Farmhouse (1266736) and Motts Farmstead (NDHA): The Applicant accepts that the setting makes a considerable contribution to value and extends to the Order Limits, yet concludes that the operational impact would amount to "no change" and "no harm"; PEA's concern is that mature vegetation and retained countryside beneath the line do not adequately justify a conclusion of no harm where major infrastructure is introduced into the setting of a secluded historic farm complex.
- Little Tey House (1266823) and Barn to the South West of Little Tey House (1266779): The Applicant accepts that the setting makes a considerable contribution to significance and extends to the Order Limits, but PEA's concern is that the photomontage shows the listed house and barn dominated by very large pylons and a wirescape in extremely close proximity, with the result that the historic and functional relationship between the assets and their agricultural setting is far more severely compromised than a conclusion of mid less than substantial harm suggests.
- Bragg (1267411), together with Gull Cottage(1267412) and Broadgreen Farmhouse (1223206): The Applicant relies on intervening buildings, mature vegetation and retained rural land beneath the overhead line to maintain a lower harm assessment, but PEA's concern is that this does not address the industrialising effect of the infrastructure on the landscape setting and the way in which these three listed buildings are experienced within it.
- Great Warley Hall (1123449), two barns (1337818 and 1248834) and moated site (NDHA): PEA's concern is that the Applicant's response reduces the setting issue to the continuation of rural land beneath and around the line, whereas the true heritage issue is that the wider historic landscape making a positive contribution to the significance of the Hall, barns and moated site would itself be irrevocably altered by the pylons and wires.
- Dunton Hall (1338380), moat (NDHA) and DMV (NDHA): Although the Applicant acknowledges the relationship between these assets as part of a medieval landscape and that pylons TB227–TB231 would alter their setting, PEA's concern is that the impact of those pylons on the agricultural and historic landscape context has not been adequately assessed to provide a level of harm that accurately reflects the true impact of the scheme on the significance of these assets.
- Sudbury's Farmhouse (1170946) :The Applicant relies heavily on vegetation screening, but PEA's concern is that screening does not alter the historic relationship between the farmhouse and its surrounding agricultural land, which forms an important part of the asset's setting and would be harmed by the introduction of pylons, as outlined by GPA3.
- Wardropers Farmhouse (1293259): With the nearest pylon identified at approximately 220 metres away, PEA's concern is that the Project would tower over the farmhouse and materially alter its historic and functional relationship with the surrounding rural landscape, notwithstanding the Applicant's emphasis on roadside vegetation screening.

- Kenningham Hall (1373056), DMV (NDHA), related NDHAs and estate grounds: PEA's concern is twofold: first, that the setting of the Hall and its associated assets has been underplayed; and second, that potentially historic farm buildings associated with Kenningham Hall, shown on nineteenth-century mapping and possibly curtilage listed, do not appear to have been properly recognised despite lying within the draft Order Limits and beneath the line of the proposed pylons, suggesting that the baseline itself may be flawed.
- Tacolneston Conservation Area: Even where the Applicant has acknowledged that greater weight could have been given to the rural landscape contribution, it nevertheless maintains that its response remains proportionate and appropriate; PEA's concern is that the conservation area's rural setting has still been underweighted despite the clear visibility of the Project and its consequent harmful impact to the significance of the conservation area.
- Winfarthing Conservation Area: PEA's concern mirrors that for Tacolneston, namely that the Applicant has not adequately reflected the contribution made by the surrounding rural setting to the significance of the conservation area and has under-assessed the degree of harm arising from the Project's visibility and landscape presence.
- Mellis Conservation Area: PEA's concern is that the Applicant has undervalued the importance of the common at the heart of Mellis Conservation Area and its agricultural setting, notwithstanding Historic England's view that the photomontages provided do not fully represent the full impact on the landscape setting and that the level of harm may be closer to a mid-level of less than substantial harm.
- Ardleigh Conservation Area: The Applicant concludes only a low adverse magnitude of impact and minor adverse significance of effect, but PEA's concern is that the infrastructure would encroach upon the setting of the conservation area on multiple sides, which, when coupled with the photomontages demonstrates a much more serious erosion of its rural setting than the Applicant's assessment acknowledges.
- Listed buildings on The Street, Ardleigh: The Applicant relies on mature vegetation, buildings and infrastructure to suggest only occasional visibility and negligible impact, but PEA's concern is that a proper GPA3 assessment would have paid greater regard to the buildings' wider setting and the way their significance is experienced within the historic rural streetscape and surrounding landscape.
- Ford Street Conservation Area: The Applicant concludes mid less than substantial harm, but PEA's concern is that the photomontages indicate a much more severe effect on the conservation area's setting, particularly given the proximity of pylons TB48–TB52 and the degree to which they would intrude upon views and the experience of the area.
- Great Waltham Conservation Area, Little Waltham Conservation Area and Langleys: PEA's concern is that the Applicant persists with a conclusion of lower less than substantial harm despite both Historic England and PEA considering the harm to be materially greater, indicating a wider pattern of under-valuing harm across the route as a whole.
- Church of St Mary (1122253): Although the Applicant accepts that the setting extends to the Order Limits and that pylons would be introduced approximately 200 metres away, PEA's concern is that the photomontages clearly demonstrate that the church's historic rural setting will be severely compromised by large infrastructure, such that the church would no longer be appreciated in its traditional landscape context but instead be dominated by very large pylons at close range.

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