

East Anglia THREE  
Offshore Windfarm

East Anglia THREE

# Update to Chapter 29

## Seascape, Landscape and Visual Assessment

Other Environmental Information  
Volume 4

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29.3	Landscape and Visual Assessment of Landfall Location and Onshore Cable Route
29.4	Landscape and Visual Assessment of Substation Location
29.5	Assessment of Haul Road Remaining in situ between Projects

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# 29 Seascape, Landscape and Visual Impact Assessment

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## 29.1 Introduction

1. This Chapter of the Environmental Statement (ES) presents the Seascape, Landscape and Visual Assessment for the proposed East Anglia THREE project. This includes assessment of onshore and offshore elements of the project during the construction, operation and decommissioning phases.
2. The assessment has been undertaken by Chartered Landscape Architects at Optimised Environments (OPEN) on behalf of East Anglia THREE Limited (EATL). The assessment has been prepared in accordance with National Policy Statements with specific reference to Overarching NPS for Energy (NPS EN-1) (July 2011).
3. This assessment presents an update to the East Anglia THREE Environmental Statement (East Anglia THREE, 2015) showing the updated East Anglia ONE substation dimensions contained in the East Anglia ONE Offshore Wind Farm (Corrections and Amendments) Order 2016, and the updated visual mitigation design contained in the East Anglia ONE Landscape Masterplan and Management Plan, including additional woodland planting proposed along the western side of Gobert's Grove to mitigate the potential loss of screening by the existing woodland.
4. There are five technical appendices which should be read in conjunction with this Chapter and which are included this submission.
5. Figures also included in this submission include GIS mapping of the study area, Zone of Theoretical Visibility (ZTV) maps, and visualisations.
6. The following elements have been assessed in detail as part of the Landscape and Visual Assessment (LVIA) of the onshore electrical transmission works:
  - Landfall Location: the LVIA assesses the potential impacts of the landfall of the offshore cable together with its onshore underground jointing bay;
  - Onshore Cable Route: the LVIA assesses the potential impacts of the onshore cable route on landscape character and visual amenity; and
  - Substation Location: the LVIA assesses the potential impacts of the substation on landscape character and visual amenity.



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7. The seascape assessment of the offshore electrical transmission works has been scoped out of the LVIA. An explanation of the scope of the assessment is presented in section 29.3.1.

## 29.2 Consultation

8. Consultee responses to the East Anglia THREE Scoping Report (East Anglia Offshore Wind 2012) and Section 42 Consultee responses to the Preliminary Environmental Report (PEIR) are presented in *Table 29.1* below. Previous consultations made in relation to the Zone or the Environmental Impact Assessment (EIA) for the East Anglia ONE project, and which are considered relevant to the proposed East Anglia THREE project have also been included. The response column indicates how the comment has been addressed, with reference to the relevant section of the ES.

Consultee	Comment	Response / where addressed in the ES
<b>Scoping Opinion</b>		
Planning Inspectorate	The Applicant needs to take account of updates to regulations, in particular need to reference National Planning Policy Framework	Chapter 3 details the application of planning policy in the ES. Chapter 29 outlines the relevance of planning policy to the LVIA.
	The potential impacts during the operation of the onshore cable route need to be assessed owing to the loss of vegetation and potential time required for re-establishment.	<i>Appendix 29.3</i> presents a detailed assessment of the impacts of the onshore cable route during operation.
	The potential onshore impacts need to be assessed, with information provided on methodology, survey work, models used and with ZTVs utilised where appropriate.	<i>Appendix 29.1</i> presents the methodology; <i>Appendix 29.3</i> and <i>Appendix 29.4</i> present a detailed assessment of potential onshore impacts.
	Photomontages and wireframes should be presented which should be verified and accord with industry standards. The location of the viewpoints should be agreed with the relevant local authorities.	Volume 2 contains photomontages and computer generated models in accordance with industry standards.  Agreement made with Suffolk County Council (SCC) and Mid Suffolk District Council (MSDC) regarding viewpoint selection.
	The LVIA should include assessment of access roads, jointing bays and temporary / permanent lighting.	<i>Appendix 29.3</i> and <i>Appendix 29.4</i> present detailed assessment of all potential impacts.
	Careful consideration should be given to the form, siting and use of colours / materials of the substation.	An Outline Landscape and Ecological Management Strategy (OLEMS) has been prepared for the proposed East Anglia THREE project which details proposed planting and bunding mitigation measures, coinciding with East Anglia ONE Landscape Masterplan and Management Plan. OLEMS will be presented as a separate document to the ES.
English Heritage	The LVIA should consider the change to historic landscape and seascape character from the cumulative development of the East Anglia Zone.	Reference is made to the historic seascape and seascape characterisation in <i>Appendix 29.2 – Environmental Baseline</i> and summarised in Section 29.3.1 below.
	Reference should be made to the Historic Seascape Characterisation work undertaken by English Heritage.	Reference is made to the Historic Seascape Characterisations and Seascape Characterisations in <i>Appendix 29.2 – Environmental Baseline</i> and summarised in Section 29.3.1 below.
	Reference should be made to the English Heritage Action Plan 2008-	Reference made to the European Landscape Convention and English Heritage Action Plan

	2013 to support implementation of the European Landscape Convention.	2008-2013 in <i>Appendix 29.2</i> – Environmental Baseline.
Suffolk County Council	The EIA needs to distinguish between the impacts of two scenarios; one in which existing ducts from East Anglia ONE would be used for pulling through of cables; and the other in which existing ducts are not present and HDD and open-cut trenching methods for the laying of the onshore cable route would be used.	The consent of East Anglia ONE eliminates the second scenario from the assessment as it can now be assumed the ducts for the proposed East Anglia THREE project would be installed during the construction of East Anglia ONE.
	With reference to landscape mitigation and the substation, consideration should also be given to the potential for landscape bunding, reducing the bed level and off-site planting. An assessment of the cumulative impacts with existing (and proposed) infrastructure in the locality should be undertaken.	An Outline Landscape and Ecological Management Strategy (OLEMS) has been prepared for the proposed East Anglia THREE project which details proposed planting and bunding mitigation measures, coinciding with East Anglia ONE Landscape Masterplan and Management Plan. OLEMS will be presented as a separate document to the ES.
Little Bealings Parish Council	Consideration should be given to an alternative onshore cable route through Little Bealings to avoid Queech Wood.	East Anglia ONE considered alternative routings and in order to minimise landscape and visual impacts along the whole route, the route of the East Anglia THREE onshore cable route would follow that of East Anglia ONE now a consented route for three projects. The alternative route through Little Bealings was investigated by PINS but not supported.
	The LVIA should include an assessment of the impacts as a result of tree and hedgerow loss whether temporary or permanent.	<i>Appendix 29.3</i> presents a detailed assessment of the tree and hedgerow loss.
	The LVIA should include a comparison of using HDD construction to cross Lodge Road.	The East Anglia THREE onshore cables would be pulled through existing ducts such that HDD construction would not be required.
<b>Pre-PIER Consultation</b>		
Suffolk County Council / Mid Suffolk District Council / Suffolk County District Council	Proposed study areas of landfall, onshore cable route and substation agreed as 1km around onshore cable route, construction consolidation sites and access tracks and 4km around substation location.	These study areas are shown on Figure 29.1 and applied in the assessment presented in <i>Appendix 29.3</i> and <i>Appendix 29.4</i> .
	Agreement made with Suffolk County Council (SCC) and Mid Suffolk District Council (MSDC) to use the 16 viewpoints used	These viewpoints are used in the visual assessment presented in <i>Appendix 29.4</i> .

	previously in the East Anglia ONE project.	
	Agreement made that the potential for cumulative effects would relate principally to the converter station location for East Anglia ONE and East Anglia FOUR.	Following the consent of East Anglia ONE, the substation forms part of the predicted baseline and is therefore not considered in the cumulative assessment. A future EAOW substation is considered in the cumulative assessment.
Section 42 consultation		
Suffolk County Council / Mid Suffolk District Council / Suffolk Coastal District Council	The local landscape designations of Special Landscape Areas (SLA) are not included.	SLAs are shown in Figure 29.2 with reference to the designation in 29.6.3.2 and in the assessment of the onshore cable route in Appendix 29.3.
	Off-site planting works included in the Section 106 agreement for EA ONE should be reviewed in terms of applicability to EA THREE. On-site planting and mounding also to be reviewed. The potential effects of ash die back in Gobert's Grove will need to be reviewed.	An Outline Landscape and Ecological Management Strategy (OLEMS) has been prepared as part of the proposed East Anglia THREE project which details proposed planting and bunding mitigation measures, coinciding with East Anglia ONE Landscape Masterplan and Management Plan. OLEMS will be presented as a separate document to the ES.
	The potential for cumulative impacts with SITA's Energy from Waste Plant, need to be reviewed.	Significant cumulative effects would not arise in relation to the SITA development owing to the distance of 4.2km that separates it from the East Anglia THREE substation and the extent of intervening landform and vegetation which limit the potential for inter-visibility between the two developments. The SITA development is now constructed and forms part of the baseline situation.
Martlesham Parish Council	Request made to use ducts rather than open-trenching on Waldringfield Road near Thatched Cottage and on the farm track opposite Howe's Farm entrance.	Onshore cable routes would be pulled through existing ducts for the length of the cable route so there would be no open trenching used in the construction process.
National Grid	Planting proposals beneath and adjacent to existing overhead lines should comprise only low and slow growing species to conform to statutory safety clearances.	The detailing of planting in relation to existing overhead lines will be addressed in the OLEMS.
Foot Antsey Solicitors (on behalf of the Woolf family)	The LVIA needs to take into account the off-site location of existing woodland that is referenced in terms of its screening effect of the East Anglia ONE, THREE and FOUR converter stations, especially as the continued maintenance and presence of these woodlands cannot be relied upon.	The OLEMS contains proposals for woodland management, subject to necessary agreements..

	The LVIA does not adequately consider the impact of the converter station in relation to the criteria set out in the Scoping Opinion para 754 - ( <i>The impact assessment will take into account the size, the location, the height, the colour and frequency of the new structure</i> ).	All these criteria have been considered in the LVIA.
Consultation on draft ES		
Suffolk County Council / Suffolk Coastal District Council	Level of confidence unreasonably low for AONB and Historic Parks and Gardens designations.	Level of confidence raised for both in respect of evidence of designation process.
	The definitions of long, medium and short term duration need to be added into <i>Appendix 29.1 – Methodology</i> . Suggestion to add very short term.	The definitions of long, medium, short term and very short term duration have been added into <i>Appendix 29.1 – Methodology</i> with reference updated in Section 29.5.3.4 of this Chapter.
	The methodology for graphic production needs to be set out in <i>Appendix 29.1 - Methodology</i> .	The methodology for graphic production has been included in <i>Appendix 29.1</i> with reference added in 29.5.5 of this Chapter.
	Clarification required regarding the difference in sensitivity ratings presented in East Anglia ONE SLVIA and East Anglia THREE SLVIA.	Clarification presented in Section 29.5.3 of this Chapter, with reference to updated GLVIA3 and the alteration of the baseline by the consent of East Anglia ONE.
	Review required of the assessment relating to the duration of effects occurring periodically over a longer period of time, especially in relation to the onshore cable route.	Duration is kept as a separate consideration to the magnitude of change which is based on the size and scale of the impact. Explanation is presented in Section 29.5.3 of this Chapter.
	Review required of the visual assessment in respect of the anticipated loss of all ash trees to ash die back.	It has been agreed with the Local Authorities that this LVIA should consider the baseline as at the date of production of the LVIA (i.e. without potential future effects of ash die back). Notwithstanding this, EATL has agreed to continue discussions with the Local Authorities in relation to the potential future effects of ash die back, including considering whether it is appropriate to mitigate such effects (if any). Additional woodland planting is proposed along the western side of Gobert’s Grove to mitigate the potential loss of screening by the existing woodland.
	Review required of sensitivity ratings of agricultural landscapes especially in relation to AONB.	Sensitivity ratings of agricultural landscapes reviewed and ratings increased where appropriate.
	Review required of the description of the sub-station site to explain	Description reviewed and amended to reflect limited visibility of substations / converter station

	how the character has been altered by the presence of energy infrastructure.	and visibility of electricity transmission lines.
	As East Anglia ONE is established as part of the baseline, reference to it in the CLVIA Table 29.12 requires to be removed.	Reference removed.
	Insufficient acknowledgement is made of the potentially protracted construction period, taking into account overall impact of the EA Array on the onshore cable route.	The extended duration of the impact is considered in Section 29.7.1.2.
	Greater acknowledgement is required with regard to the seascape character assessments that have been carried out for the coast and seascape of East Anglia	A baseline description of the seascape character is included in Section 29.3.1.
	Review required of Special Landscape Areas in terms of their sensitivity ratings.	The sensitivity rating of high is preserved for those landscapes of national value. The SLAs are afforded either medium to high or medium sensitivities. This also factors in their susceptibility to the proposed East Anglia THREE project.

Section 42 Phase III Consultation

Suffolk County Council	If the Two Phased approach were to be taken, there is concern regarding the condition of the landscape in the interim period between the two phases when there would be no restorative works.	Although no planting would take place in the interim the site areas would be kept in a tidy condition and restoration planting would be phased to take place at the earliest date (taking into account seasonal requirements for planting). Furthermore, the areas for haul roads would be kept to a maximum of 5.5m and so the area would be limited.
	It is recognised that the extent of the redline boundary provides the potential to undertake mitigation planting at the earliest opportunity.	A substantial area of mitigation planting would already be implemented as part of East Anglia ONE. The extent of the red line boundary is utilised with substantial planting proposed to the north.
	Concern regarding the potential effects of ash die back are reiterated.	It has been agreed with the Local Authorities that this LVIA should consider the baseline as at the date of production of the LVIA (i.e. without potential future effects of ash die back). Notwithstanding this, EATL has agreed to continue discussions with the Local Authorities in relation to the potential future effects of ash die back, including considering whether it is appropriate to mitigate such effects (if any). Additional woodland planting is proposed along the western side of Gobert's Grove to mitigate the potential loss of screening by the existing

		woodland.
Suffolk Preservation Society	The potential effects of the kiosks associated with the onshore cable route should be addressed through careful design.	The detailed positioning of the kiosks would take advantage of the screening effect of hedegrows and trees and the kiosks would be of a subtle colour to blend in with the landscape.
	Concern regarding the design of the converter station (now referred to as a substation) in terms of siting, scale and massing.	The siting of the substation utilises the screening effect of existing woodland, and mitigation planting. Other design issues are addressed in the Design and Access Statement which will be presented as a separate document to the ES.
Section 56 Consultation		
Suffolk County Council / Mid Suffolk District Council / Suffolk Coastal District Council	The sensitivity of the same receptors (in particular of visual receptors around the substation site) has been set lower levels than for the assessment work carried out in respect of East Anglia ONE.	The methodology for rating sensitivity has changed through the replacement of GLVIA 2 with GLVIA 3. Following current guidance, sensitivity is rated through the combination of the value of each receptor and its specific susceptibility to the potential effects of the proposed development. Also, the baseline has changed since the assessment of East Anglia ONE. In the East Anglia THREE assessment the baseline includes the predicted presence of the East Anglia ONE substation. This is because the consent provides a degree of certainty that it will be built. The presence of the substation changes the baseline character and in this instance, lowers the sensitivity. This is because there is already an influence from this type of development. There are no regional or national landscape designations covering the area around the substation and no formal viewpoints which might otherwise raise the sensitivity.
	It is understood that the contention of the applicant (Document 29.1, paragraphs 63-67) that this relates principally to the changes in methodology that have taken place in the interval between the two assessments being carried out.	The changes to the methodology applied in the assessment of East Anglia THREE reflect the majority of changes in the methodology that have been implemented through the update of GLVIA 2 into GLVIA 3.
	The methodology (Document 6.1.29(1) paragraphs 5-6) explicitly deviates from the current guidance on Landscape and Visual Impact Assessment in respect of the calculation of magnitude of change.	Through working practice, OPEN have found that, by combining magnitude of change with geographical extent and duration, over-complicates the assessment by over-loading the rating with too many different considerations. A simpler approach, in which the magnitude of change rating is kept separate and then combined with the sensitivity rating, helps to more accurately identify significant effects. For example, by factoring in the short term duration and the very localised geographical extent of certain effects may alter the outcome of the

		<p>assessment from significant to not significant. Conversely, where certain not significant effects are assessed, factoring in the long term nature of these effects would alter the outcome from not significant to significant. The consent will be for a 25 year period and so all effects will be non-permanent and reversible.</p>
	<p>Whilst the current methodology states that the size or scale of the effect, its geographical extent and its duration and reversibility should be combined to calculate the magnitude of change, the applicant has chosen to deviate from this focusing on size and scale to calculate magnitude of change while reporting, but not including geographical extent or duration in this calculation, but rather describing them separately.</p>	<p>The combination of magnitude of change, geographical extent and duration can alter the findings of the assessment and obscure the identification of significant effects, which is ultimately the purpose of the LVIA. For example, if there is a high magnitude of change but if it is over a very short duration then the finding would be that the effect will be not significant. Conversely, if there is a medium magnitude of change and it is over a long period of time, then the finding will be that the effect will be significant. In both cases the assessment has been distorted by the addition of duration. A more transparent assessment is possible by keeping these ratings separate, stating the magnitude of change and whether it is significant or not, and then applying the duration to explain the short, medium or long term nature of this effect.</p>
	<p>It is understood that the contention of the applicant is that combining all three considerations in one rating can distort the aim of identifying significant impacts in respect of large scale developments.</p>	<p>Explanation presented above.</p>
	<p>The sensitivity of the Suffolk Coast Path should be “High” throughout given that it is a nationally promoted route within a nationally designated landscape and the users of which have high expectations and sensitivity in relation the visual amenity of the landscape.</p>	<p>The rating of sensitivity is based on a combination of the value and the susceptibility of the landscape or visual receptors. GLVIA 3, in paragraph 5.42 states; <i>'Since landscape effects in LVIA are particular to both the specific landscape in question and the specific nature of the proposed development, the assessment of susceptibility must be tailored to the project.'</i> This means that the susceptibility part of the rating considers susceptibility in respect of the potential effects of the specific proposed development. In Appendix 29.2, Section 29.4.8.2, the susceptibility of walkers on the Suffolk Coast Path is assessed to be medium to high. The principle attraction from the coast path is the view along the coast and out to sea and not inland to the agricultural landscape. Furthermore, as the cable route will generally be some distance from the path, the susceptibility of walkers to the effects of the proposed</p>



		<p>development will be relatively low. The overall rating of susceptibility is, therefore, medium to high. GLVIA3 highlights the fact that factors other than designation can have a bearing on the rating of value; <i>'The value of landscape receptors will to some degree reflect landscape designations and the level of importance which they signify, although there should not be over-reliance on designations as the sole indicator of value.'</i> In Appendix 29.2, Section 29.4.8.2, the value of the Suffolk Coast Path is assessed to be medium to high.</p>
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## 29.3 Scope

### 29.3.1 Offshore

9. The offshore assessment addresses seascape, landscape and visual impacts during the construction, operation and decommissioning phases of the project. This section of the SLVIA examines the potential for significant impacts to arise in relation to the offshore components of the proposed East Anglia THREE project. The offshore components have the potential to affect landward, coastal and seaward receptors, with the seaward area described in terms of the inshore and offshore areas. The offshore components of the proposed East Anglia THREE project comprise wind turbines, offshore electrical platforms, meteorological masts and underwater cabling. The 100 to 172 wind turbines would be of a maximum tip height of 247m. The closest possible location a wind turbine would be located is 69km from the coastline. At this distant range, the wind turbines would not be visible from ground level along the coast owing to the curvature of the earth. From the highest point of 20m AOD on the cliff near Bawdsey, some sections of the blades of the closer wind turbines would be theoretically visible, although actual visibility would be unlikely as this would require excellent visibility conditions which occur very infrequently.
10. From coastal areas, there would potentially be views of construction vessels and cable laying vessels which would use lighting during hours of darkness as part of the construction process. The glow of construction lighting from vessels at more distant turbine sites may be visible at night. While there is an existing flow of vessels visible from the coast, the construction and cable laying vessels would add to the volume, but not to the extent that it would give rise to a significant impact on landscape or visual receptors along the coast. There is greater potential for impacts to occur from the seascape, with these impacts acting upon the seascape character as well as visual receptors on-board sea-borne vessels.
11. In terms of policy, the UK Marine Policy Statement (2011) makes reference to the definition of 'landscape' contained in the European Landscape Convention (2000), in the absence of a legal definition of seascape in the UK. It states '*In the context of this document, references to seascape should be taken as meaning landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other.*'
12. The UK Marine Policy Statement identifies the scope of the Marine Plans in terms of the considerations that would be required;
13. '*When developing Marine Plans, marine plan authorities should consider at a strategic level visual, cultural, historical and archaeological impacts not just for*

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*those coastal areas that are particularly important for seascape, but for all coastal areas, liaising with terrestrial planning authorities as necessary.'*

14. The Draft East Inshore and East Offshore Marine Plans (2014) have been prepared in response to the UK Marine Policy Statement and present a series of objectives aimed at balancing economic development against environmental protection. '*Objective 5 – To conserve heritage assets, nationally protected landscapes and ensure that decisions consider the seascape of the local area*' ensures that it is not only the coastal landscapes that are considered, but also the inshore area out to approximately 12 nautical miles and the offshore area out to the international maritime border with the Netherlands, Belgium and France.
15. The East Inshore and Offshore Character Areas identified in the Marine Plans that are of relevance to the LVIA for the proposed East Anglia THREE project are the Suffolk Coastal Waters (inshore) and the East Anglian Shipping Waters (offshore). Specific information with regard to the character of these areas is presented in the 'Seascape Characterisation around the English Coast' (Marine Plan Areas 3 and 4 and Part of Area 6 Pilot Study) (2012).
16. In terms of establishing a scope of those receptors that have the potential to undergo significant impacts, it must be remembered that the offshore components of the proposed East Anglia THREE project would be located an approximate distance of 69km from the coastline. This means that even in good viewing conditions, when there is the possibility that blade tips may be discernible from higher points along the coast, these would appear as extremely small and distant features, and seen in the context of one of the busiest shipping channels around the UK, where built artefacts are a common feature in seaward views. The magnitude of change would be negligible and the impact of the offshore components on coastal and landward receptors would be not significant. Even in respect of the higher sensitivity coastal landscapes, such as the AONB, the impact would not be significant owing to the negligible magnitude of change.
17. As distance from the shore increases and distance to the offshore components decreases, the influence of the proposed East Anglia THREE project on receptors would increase, although these would be seascape receptors and water-borne visual receptors rather than landscape or land-borne visual receptors. In terms of seascape character, the inshore and offshore areas are described in the Seascape Characterisation citation in terms of 'Key Characteristics', 'Physical Influences', 'Cultural Influences' and 'Aesthetic and Perceptual Responses'. For the inshore area of the 'Suffolk Coastal Waters' the citation refers to the coastal features as the principal influence on the seascape character, with comparatively little reference to the seascape features.

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- *‘Suffolk Coast and Heaths AONB and Heritage coast designations recognise a rich mixture of unique and vulnerable coastal lowland landscapes;*
  - *Low-lying coastline dominated by coastal processes and estuarine influences;*
  - *Unified coastal interface with a nationally significant concentration of vegetated shingle structures and coastal lagoon habitats;*
  - *Colourful seafront coastlines lined by brightly painted beach huts;*
  - *Steeply sloping shelved shingle beaches;*
  - *Prolific wildlife value, particularly bird life;*
  - *Dramatic and contrasting developments such as Sizewell nuclear power station, Orfordness transmitting station and commercial dock development at Felixstowe;*
  - *Historically heavily defended coastline;*
  - *Large scale panoramic views of the seascape dominated by busy offshore North Sea shipping waters;*
  - *Perception of seascape is often from the immediate coastal interface due to long estuaries, low landform and coastal shingle structures.’*
18. In respect of the extent of the seascape area, the influence of these coastal features would reduce with distance, such that there would be very little influence out at the boundary. The offshore components would be located a distance of 47km from the outer boundary of the inshore area, such that, despite their large scale, they would appear as relatively small scale elements and their influence on the character of the seascape would be limited. With a limited influence from the coastal landscapes the sensitivity of this seascape area would not be especially high and when combined with a low magnitude of change, the impact would be not significant.
19. The citation for the offshore ‘East Anglian Shipping Waters’ describes the seascape as a unified and expansive area of open water with few surface features, other than ‘dense concentration of shipping activity’ and the additional influence of offshore wind farms, gas fields and areas used for military practice, fishing and dredging. With the absence of any special seascape features and the presence of many human interventions, the sensitivity of this area to the proposed East Anglia THREE project would be low. Considering the impacts of the proposed East Anglia THREE project on the offshore seascape area of ‘East Anglian Shipping Waters’ as a whole, the

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impact would be not significant. This finding relates principally to the vast scale of the seascape area and the existing influence of many developments and other human artefacts which currently characterise the seascape.

20. The only other receptors with the potential to be affected by the construction, operation and decommissioning of the offshore components would be people on passing vessels including ferry passengers, merchant seamen, commercial fishermen and recreational sailors.
21. The potential offshore impacts during construction, operation and decommissioning include;
  - The presence and visibility of wind turbine components being transported on barges to the offshore location during construction;
  - The presence and visibility of a variety of installation and support vessels as well as the activities associated with these and the installation of windfarm components during construction;
  - The presence and visibility of machinery and activities associated with the installation of wind turbine foundations, pylons, nacelles and blades;
  - The cable laying vessels, vessels used in cable protection placement and their associated support vessels required for inter array cable and export cable installation during construction;
  - The presence and visibility of the wind turbines, ancillary offshore infrastructure and maintenance vessels during the 25-year operation;
  - The presence and visibility of a variety of large decommissioning and support vessels and the activities associated with these and the dismantling and removal of wind turbines and part removal of foundations during decommissioning; and
  - The presence and visibility of dismantled wind turbine components being transported on barges to the onshore location during decommissioning.
22. While there would be impacts on receptors at sea such as ferry passengers, merchant seamen, commercial fishermen and recreational sailors as a result of the construction, operation and decommissioning of the offshore wind turbines and associated infrastructure, these impacts are unlikely to be significant owing to the following factors;
  - The absence of any scenic designations attached to the seascape as a receptor;
  - The relatively limited volume of sea-borne travellers who would gain visibility;

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- The transitory nature of the views of sea-borne travellers; and
  - The short-term duration of the construction and decommissioning phases.
23. Where water borne vessels pass the offshore components, the views would be transitory in nature and short in duration. Sea-borne travellers would not gain the type of long-term or permanent view, which for example residents next to an onshore windfarm may experience. While some recreational sailors and commercial fishermen may obtain views of the offshore components for longer durations, for the majority of sea-borne travellers, views would last for only a small proportion of a much longer journey.
24. While there is limited guidance on the sensitivity of seascapes so remote from coastal edges, the absence of any scenic designations, combined with the absence of any sense of context, reduces the relative sensitivity. The seascape gives rise to a sense of vastness, which reduces any sense of scarcity and as a result the offshore components would be considered to occupy a small proportion of a wider entity. The seascape provides an environment with capacity to accommodate the wind turbines, owing to its scale, simplicity and the relative absence of features with which to reference the scale of the wind turbines.
25. Taking all these factors into account, this initial assessment concludes that it would be unlikely for significant impacts to arise as a result of the offshore components.
26. The East Anglia THREE Offshore Wind Farm Scoping Report (East Anglia Offshore Wind 2012), section 4.1.2 Seascape, Landscape and Visual Amenity establishes that owing to the distance between the onshore receptors and the nearest point of the East Anglia THREE site, there would be no impacts upon the onshore receptors. The East Anglia THREE Offshore Wind Farm Scoping Opinion (Planning Inspectorate 2012) responds with the following statement:
- 'The SOS notes that the offshore elements of the proposed development would be located at such a distance that there would not be views of the proposed windfarm from onshore receptors.'*
27. There is the potential for the offshore components to impact on offshore receptors, but for the reasons presented above it is considered unlikely that these impacts would be significant. In respect of this assessment, for the reasons given above, the impacts of the offshore components of the proposed East Anglia THREE project are not considered further.

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### 29.3.2 Onshore

28. The onshore assessment addresses the landscape, visual and cumulative impacts of the onshore components during the construction, operation and decommissioning phases of the project. The purpose of the assessment is to identify all significant impacts on landscape and visual receptors as a result of the proposed East Anglia THREE project. The assessment process follows a five stage approach which accords with the principles set out in GLVIA 3 (as detailed in *Appendix 29.1*);
- Establish the baseline conditions of landscape character and visual amenity within the study area, through a combination of desk based study and site reconnaissance.
  - Establish the potential impacts of the proposed East Anglia THREE project based on an understanding of the form and appearance of the components proposed, the processes involved in their construction, operation and decommissioning, and the extent to which embedded mitigation may reduce potential impacts.
  - Assess the sensitivity of the landscape and visual receptors to the proposed East Anglia THREE project, taking into account the value attributed to the receptor and its susceptibility to the potential impacts.
  - Assess the magnitude of change on the landscape and visual receptors, which is likely to arise as a result of the proposed East Anglia THREE project, taking into account embedded mitigation as well as the scale, geographical extent and duration of the potential impacts.
  - Apply professional judgement to combine the sensitivity of the receptor with the proposed magnitude of change to determine the significance of the impact.
29. The LVIA considers the impacts of the onshore electrical transmission works on the physical elements of the site and impacts on the landscape character and visual amenity of the site and surrounding area.
30. The LVIA considers two sets of alternatives, the first in respect of the proposed electrical solution to be applied, and the second in respect of the proposed process of phasing.
31. East Anglia THREE are currently considering both a High Voltage Direct Current (HVDC) and a Low Frequency Alternating Current (LFAC) electrical solution for the proposed East Anglia THREE project. The key difference of relevance to this assessment is that the LFAC solution would require a compound area for the onshore substation of 160m x 190m while for the HVDC solution it would be 150m x 190m. For both solutions the building

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dimensions would be 85m x 116m x 25m height. As the LFAC solution presents the worst case scenario in respect of the potential impacts, the larger compound dimensions would be used as the basis of the assessment and this is what is shown in the accompanying graphics. A detailed description of the electrical solutions is presented in Chapter 5 Description of the Development.

32. East Anglia THREE are currently considering constructing East Anglia THREE substation in either a Single Phase or a Two Phased approach. Under the Single Phase approach, the build out time is estimated to be approximately 55 weeks, this would consist of 43 weeks of construction and mechanical and electrical fitting followed by 12 weeks of testing and commission.
33. If a Two Phased approach to construction is taken the build out time is estimated to span approximately 123 weeks; this would consist of 76 weeks of construction and mechanical and electrical fitting split between two periods over a total of 112 weeks. At the end of each construction phase 12 weeks of testing and commission would follow.
34. The differences between the Single Phase and Two Phased approach only affects the assessment of the impacts relating to the construction of the proposed East Anglia THREE substation. The impacts during operation and during decommissioning would be the same regardless of whether the proposed East Anglia THREE project is constructed in one or two phases. The assessment, therefore, only considers the difference between the Single Phase and Two Phased approach during construction.
35. It is assumed in the assessment that East Anglia ONE is constructed and is operational and that the proposed East Anglia THREE project would be added to this baseline situation. Note that for the purposes of this assessment, the dimensions of the East Anglia ONE substation are taken from the East Anglia ONE Offshore Wind Farm (Corrections and Amendments) Order 2016. The size of the East Anglia ONE substation is smaller than originally consented and the components are generally located outwith an enclosed building. The dimensions and layout of the revised design of the East Anglia ONE substation have been used as the basis of the assessment and are represented by a model in the computer visualisations.
36. In the cumulative assessment a further scenario is considered in which the East Anglia THREE substation is added to a situation which comprises East Anglia ONE and a future EAOW project's substation, with the assumption, for the purposes of the assessment, that a future EAOW project is considered as a relevant project within the cumulative assessment.



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### 29.3.3 Study Area

37. The Study Area for each component of the onshore works covers different geographical areas relating to the potential extent to which the impacts of that component may give rise to a significant impact.

#### 29.3.3.1 Landfall

38. The Study Area for the onshore cable route has been set at a 500m buffer either side, along the working widths of the route (1km in total). This extends across 37km from the landfall location at Bawdsey to the substation at Bramford, west of Ipswich. This buffer has been agreed with the local authorities in respect of East Anglia THREE (*Table 29.1 Consultation Responses*). The cables would be buried underground and the majority of the impacts would relate to the construction works required to pull the cables through the existing ducts. Machinery would be relatively small in scale and screening would occur by existing hedgerows and trees.

#### 29.3.3.2 Onshore Cable Route

39. The Study Area for the onshore cable route has been set at a 500m buffer either side, along the working widths of the route (1km in total). This extends across 37km from the landfall location at Bawdsey to the substation at Bramford, west of Ipswich. This buffer has been agreed with the local authorities in respect of East Anglia THREE (*Table 29.1 Consultation Responses*). The cables would be buried underground and the majority of the impacts would relate to the construction works required to pull the cables through the existing ducts. Machinery would be relatively small in scale and screening would occur by existing hedgerows and trees.

#### 29.3.3.3 Substation

40. The Study Area for the substation has been set at a 4km radius from the edge of the substation location. This was applied in the assessment of the East Anglia ONE converter station and has been agreed with the local authorities in respect of East Anglia THREE (*Table 29.1*). Impacts would occur during the construction, operation and decommissioning stages.
41. Initial studies conducted as part of the East Anglia ONE LVIA (EAOL 2012), tested visibility within a 6km radius from the centre of the substation, but found that - owing to the extent of intervening mature woodland, tree belts, hedgerows, and, in fewer instances, buildings - it would be unlikely for significant impacts to arise beyond the 4km radius.

### 29.4 Potential Impacts

42. The construction, operation and decommissioning of the components of the proposed East Anglia THREE project have the potential to affect the physical elements of the sites, as well as the landscape character and visual amenity

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of the study areas around the sites. There is the potential for cumulative impacts in relation to other large scale infrastructure projects. A list of other relevant projects to be considered within the cumulative impact assessment has been provided in *Table 29.12*.

43. The potential impacts of the three components - landfall location, onshore cable route and substation - have been assessed at each of the three stages of the project; construction, operation and decommissioning. The potential impacts are determined through considering the worst case scenario, as well as the mitigation measures embedded in the proposed East Anglia THREE project.

#### **29.4.1 Worst Case Scenario**

44. Chapter 5 Description of the Development sets out a detailed description of the landfall location, onshore cable route and substation, as well as detailed information on their construction, operation and decommissioning. The worst case scenarios with regard to the LVIA are represented by the potential impacts in *Table 29.2* below. These parameters are applied in the assessment of potential impacts and ensure that it reflects the worst case scenario in every aspect.

Table 29.2. Worst Case Assumptions

Impact	Key design parameters forming realistic worst case scenario	Assumptions and Rationale
<b>Construction</b>		
Impacts of landfall construction on physical elements, landscape character and visual amenity.	One Secondary Construction Consolidation Site (CCS) required.	CCS would facilitate access to the route, allow storage of materials and accommodate site offices.
Impacts of landfall transition bays on physical elements, landscape character and visual amenity.	Four transition bays constructed (each a maximum of 15m x 10m x 3m depth).	East Anglia ONE would not install transition bays for subsequent projects.
Impacts of landfall construction period and working hours on landscape character and visual amenity.	Construction period of up to 10 weeks, with maximum working days of 12 hours and 7 days a week.	Includes the commencement and re-instatement works. Construction hours and days to be agreed with relevant planning authority in advance
Impacts of landfall construction lighting on landscape character and visual amenity.	There is potential for 24 hour lighting for security at all CCS sites.	Assumes 7 day week.
Impacts of onshore cable route construction on physical elements, landscape character and visual amenity.	Excavation, construction and jointing operations at 2 bays at up to 62 jointing bay locations along the onshore cable route. Access to site where existing track not used, including up to 17.8km of haul road. Jointing bay dimensions of 10m x 5m x 5m depth.	
Impacts of onshore cable route PRoW diversions on visual amenity.	Temporary stopping up /management at up to 32 points on PRoWs.	
Impacts of onshore cable route construction period and working hours on landscape character and visual amenity.	Construction period of up to 29 weeks, with maximum working days of 12 hours and 7 days a week.	Includes the commencement and re-instatement works. Construction hours and days to be agreed with relevant planning authority in advance.
Impacts of onshore cable route construction lighting on landscape character and visual	Flood lighting during hours of darkness at 7 CCS.	Requirement for lighting would be limited to times when particular CCS locations are active.

amenity.		
Impacts of substation construction period and working hours on landscape character and visual amenity.	<p><b>Single Phase:</b> Maximum construction period of 55 weeks, with maximum working days of 12 hours.</p> <p>As a worst case scenario, it has been assumed that some periods of 24 hour construction may be required, for which task related flood lighting may be necessary.</p> <p><b>Two Phased:</b> Maximum construction period of 123 weeks, with maximum working days of 12 hours. Construction period split into two phases with maximum interval with no construction of 5 months.</p>	<p>Includes the commencement and re-instatement works. Single phased period would be continuous.</p> <p>Construction hours and days to be agreed with relevant planning authority in advance.</p>
<b>Operation</b>		
Impacts on physical elements, landscape character and visual amenity as a result of vegetation reinstatement along access roads and around CCS.	<p>Area re-instated to former conditions with full agricultural activities able to continue with exception to those which penetrate the ground along the onshore cable route, e.g. to more than 0.5m.</p> <p>3-5 years required for replanting to infill hedgerows. 15 years required for tree growth to reach 7m.</p> <p>Permanent easements of 35m retained through hedgerows and woodlands.</p>	
Impacts on physical elements, landscape character and visual amenity as a result of operations and maintenance of onshore cable route	<p>One annual visit to jointing bays to carry out routine integrity tests.</p> <p>Non-scheduled maintenance to address faults as and when these may arise would also be necessary, and this maintenance could be required in between jointing bay or kiosk locations.</p>	
Impacts on physical elements, landscape character and visual amenity as a result of substation.	<p><b>Single Phase:</b> Maximum landtake 3.04ha (LFAC).</p> <p>Maximum compound dimensions 160m wide x 190m long (LFAC).</p> <p>Maximum Substation Buildings dimensions: two buildings of 58m wide x 85m long x 25m high to the roof ridge.</p> <p>Maximum height of equipment and ancillary buildings generally 15m or lower.</p> <p>Floor levels of substation buildings approximately 54m AOD.</p> <p>Proposed bunding approximately 4 or 5m above general ground levels. Tree planting with approximately 200-400mm growth per year (depending on species).</p> <p><b>Two Phased:</b> As above but with</p>	<p>These dimensions would accommodate the various substation designs.</p> <p>The gradient of the roof is based on use of profile sheeting set at practical minimum falls.</p> <p>Ancillary buildings make up the external area to the south of the substation halls.</p>

	Substation Buildings constructed separately – one in each phase. Dimensions of each 58m wide x 85m long x 25m high.	
Impacts of substation operational lighting on landscape character and visual amenity.	<p><b>Single Phase and Two Phased:</b></p> <p>Operational lighting requirements at the substation site may entail:</p> <p>Security lighting around perimeter fence of compound, to allow CCTV coverage;</p> <p>Car park lighting – as per standard car park lighting, possibly motion sensitive; and</p> <p>Repair and maintenance – task related flood lighting may be necessary.</p> <p>No additional lighting is proposed along Bullen Road or along the additional access roads within the substation site boundary.</p>	
Decommissioning		
Impacts of landfall location and onshore cable route on landscape character and visual amenity.	<p>Onshore cables de-energised and left in situ. Kiosks removed.</p> <p>Jointing bays left in- situ. Where pre-installed ducts are used, cables may be extracted once de-energised.</p>	
Impacts of substation on landscape character and visual amenity.	<p><b>Single Phase and Two Phased:</b></p> <p>Substation removed, components re-used and land returned to initial state.</p>	

**29.4.2 Embedded Mitigation**

- 45. Embedded mitigation forms an integral part of the proposal and moderates the worst case scenario. Mitigation measures are referenced in *Table 29.3*, highlighting where landscape elements are to be retained or restored.
- 46. Landscape works agreed to be undertaken as part of East Anglia ONE also form embedded mitigation. These works comprise planting and bunding and are summarised below. The detail of the works is covered in the East Anglia ONE Landscape Masterplan (July 2016) and East Anglia ONE Landscape Management Plan (July 2016), which form part of the submission required to discharge conditions associated with the DCO.
- 47. Embedded mitigation for the proposed East Anglia THREE project has assumed the pulling through of cables into ducts already installed as part of East Anglia ONE. This would minimise the impacts on both landscape character and visual amenity. Overhead electricity transmission lines would have a much greater impact on both landscape character and visual amenity

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owing to the prominence of the supporting pylons as structures in the landscape, either appearing at variance with the rural character where other pylons are not present or adding to the cumulative impact where they are, especially around the existing Bramford Sub-station and converter station location where there is already a concentration of pylons.

48. The pulling through of the onshore cables is the most important mitigation measure undertaken, as it also notably reduces the potential for impacts when compared with the alternative processes of open-trenching and HDD. The potential for significant impacts during the short term of the construction and decommissioning stages and the long term of the operation stage are greatly reduced by the pull through process along the onshore cable route.
49. The final routing of cables connecting into the substation is not known at the current time. Therefore, the pre-installed ducts would end just beyond the western boundary of the screening trees and bunding installed by East Anglia ONE to the east of the East Anglia THREE substation. The final stretch of cables would be open trenched from the end of the ducts to the substation. This would cover a maximum distance of 300m. Likewise, National Grid would install ducts to connect into the existing Bramford Sub-station but these would end at the boundary of the National Grid land, therefore EATL would need to open trench up to the end of these ducts, a distance of up to 235m. In both cases the cables would be laid directly into trenches. The open trenching would occur during the construction phase of the proposed East Anglia THREE project, and would therefore occur in the context of the larger scale construction of the proposed East Anglia THREE substation. The open trenching would occur to the east of the proposed East Anglia THREE substation, in a location where a number of electricity transmission lines converge and the landscape is largely influenced by the existing presence of large scale energy infrastructure. The open trenching would be low lying and screened from many surrounding receptors by existing planting and planting established as part of East Anglia ONE. It would be in respect of this context that the relatively small scale works associated with the open trenching would have a limited influence on landscape and visual receptors.
50. Mitigation planting for East Anglia ONE is shown in Figure 29.9 and for East Anglia THREE in Figure 29.10. Mitigation planting proposed for East Anglia ONE includes substantial woodland planting to screen the East Anglia THREE substation. The planting to be implemented as part of East Anglia ONE is to the south-west, immediate north and east of the East Anglia THREE substation. Further planting to be implemented as part of East Anglia THREE is to the north and north-east of the East Anglia THREE substation. While existing woodland currently screens those aspects to the west, north-west and north-east, the mitigation planting would largely infill the gaps to ensure the East Anglia THREE substation location would eventually be enclosed from

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almost all visual aspects. The mitigation planting to the south-west would be set on a 4m high bund and to the north on a 5m high bund, which would add to the height of the trees relative to the levels of the substations.

51. The mitigation planting would be designed to comprise a mix of faster growing 'nurse' species and slower growing core 'species'. The core species would comprise a mix of preferred native species that would outlive the nurse species and characterise the woodland structure over the longer term. It is anticipated that the growth rate of these species would be 200-300mm per annum taking into account the clay soils and the 'made' nature of the land. The nurse species would be faster growing and shorter-lived, providing shelter to bring on the core species. The mix would contain species such as alder, birch, poplar and rowan, with average growth rates of 400mm per annum. It is anticipated that 6m growth would take 15 years and that at the end of the 25 year consent period the trees would have reached approximately 11m (assuming planting height of 1m). The nurse species would be sufficiently fast growing to provide substantial screening of the East Anglia THREE substation towards the last 5 to 10 years of the consent period.
52. It is anticipated that the construction of East Anglia ONE, including mitigation planting, would commence in 2017. As the construction of the proposed East Anglia THREE project is due to commence at the earliest between 2020 and 2025, the mitigation planting would already have had a minimum of three years of growth which equates to approximately 1.2m in height on top of a base height of approximately 1m (for the faster growing nurse species). The mitigation planting to the south-west would be set on a 4m high bund, which would add to the relative height of the trees. This would mean by the time the proposed East Anglia THREE project would be constructed, the nurse species in the mitigation planting would be at a height of approximately 6.2m in the area to the south-west and 2.2m in the area to the east and immediate north. It is anticipated that by the end of the 25 year consent period, the planting to the south-west, immediate north and east would be at a height of approximately 12.2m, although with the bunding to the west the total height would be 16.2m.
53. Mitigation planting proposed for East Anglia THREE includes substantial woodland planting on a bund of up to 5m high to the north and further woodland planting to the north-east of the East Anglia THREE substation. This would add to the screening effect already provided by existing woodland and the narrow band of new woodland planting that would be implemented to the north as part of East Anglia ONE. The additional planting in the wider area to the north would reach a maximum height of approximately 11m after 25 years which, in association with the bunding would give an overall maximum height of 16m above the baseline ground level. Figures 29.9 and 29.10 show East Anglia ONE and East Anglia THREE mitigation planting. Detailed

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information on embedded mitigation in relation to the East Anglia THREE substation is contained within an *Outline Landscape and Ecological Management Strategy (OLEMS)*.

54. While a proportion of the woodland, cited in the LVIA as being of importance to the screening of the proposed East Anglia THREE project, is outwith the control of East Anglia THREE limited (EATL), it is subject to the protection afforded by the Forestry Act (1967).
55. Part II of the Forestry Act 1967 is entitled 'Commissioner's Power to Control Felling of Trees' which requires those with the intention of felling trees to apply to the commissioner for a licence. There are restrictions which would be applied in the consideration of issuing such a licence and ultimately the act seeks to protect forest areas.
56. Furthermore, Millers Wood, Bullen Wood, Bushey Grove and Fore Grove are all identified as Ancient Semi-Natural Woodland in the local plan and, therefore, also as Country Wildlife Sites (CWS). While CWS are not protected under statute, their importance is recognised by local planning authorities in their consideration of related planning applications.
57. In light of the statutory protection afforded by the Forestry Act (1967) and the designation of the woodlands as CWS, it would be unlikely for these woodland areas to be intentionally removed and therefore such a scenario is not considered in the assessment.
58. It has been agreed with the Local Authorities that this LVIA should consider the baseline as at the date of production of the LVIA (i.e. without potential future effects of ash die back). Notwithstanding this, EATL has agreed to continue discussions with the Local Authorities in relation to the potential future effects of ash die back, including considering whether it is appropriate to mitigate such effects (if any). It is recognised that the disease is having a significant impact on ash trees within the Suffolk area. Initial indications are that the existing woodlands around the East Anglia THREE substation, but outwith the site boundary, contain ash species. Further information regarding the presence, location and health of the ash trees would be required as the basis for an accurate assessment.
59. East Anglia THREE are willing to consider working with the Local Authorities to help land owners implement woodland management plans to maintain the health and longevity of the woodland areas. This would involve an analysis of the existing condition of the woodland, and then selective and phased removal of diseased trees with careful management of replacement tree planting. In the long term this would help to produce a mixed age woodland with an overall longer life expectancy. The approach to management plans is set out in the OLEMS for East Anglia THREE.



- 60. Mitigation measures to be implemented as part of East Anglia THREE project include the planting of a 10m wide woodland strip within the 15m adjacent to the western edge of the existing Gobert’s Grove woodland to the north east of the East Anglia THREE substation. This would be located within the site boundary and its purpose would be to ensure the long term screening effect in respect of views from the north and north-east, regardless of the condition of the existing woodland at Gobert’s Grove. Details of this planting proposal is contained in the East Anglia THREE OLEMS and set out in the East Anglia ONE Landscape Masterplan and Management Plan.
- 61. *Table 29.3* summarises the embedded mitigation for the proposed East Anglia THREE project and these measures are included in the East Anglia THREE OLEMS. These measures are consistent with the embedded mitigation set out in the East Anglia ONE Landscape Masterplan and Management Plan.

Table 29.3 Embedded Mitigation in Relation to Landscape and Visual Impacts

Embedded Mitigation in Relation to Landscape and Visual Impacts	
Parameter	Mitigation Measures
General	
Project design	Project decision from outset that cable would be underground not overhead, so as not to be part of the visible landscape and to minimise landscape and visual impacts. Use of pre-installed ducts would further reduce potential impacts during construction of East Anglia THREE.
Landfall	
Project design	Avoid vegetated shingle at landfall.
Construction	Temporary works would be within a single field accessed by existing road. Excavated material from the trenches (earth / sand / shingle) would be stockpiled on the fields or beach for short periods but re-laid to match existing profiles.
Onshore cable route	
Project design	Careful location of 2 primary and 5 secondary CCSs and 62 jointing bay locations including up to 248 kiosks to avoid mature trees, hedgerows and other sensitive features.
Construction	Replace any land drainage disturbed by the works. Carefully handle topsoil to British Standard BS3882: 2007. Reinstate bank profiles. Retain and re-lay vegetation to sides of ditches. Reinstatement of affected field boundaries in the same style or with the same species mix of the original and / or to match adjacent boundaries. Early installation of protective fencing would be utilised in order to minimise impacts to trees and their roots.
Substation	
Project	Careful siting of substation location to the north of the existing Bramford

Embedded Mitigation in Relation to Landscape and Visual Impacts	
design	Substation to ensure it is associated with existing large scale infrastructure development. Siting also ensures that the screening effect of surrounding woodland blocks is best utilised.
Construction	Limited 24 hour lighting at substation site during particular construction activities.
Operation	Planting and bunding. Operational lighting requirements at the substation site may entail: <ul style="list-style-type: none"> <li>• Security lighting around perimeter fence of compound, to allow CCTV coverage;</li> <li>• Car park lighting – as per standard car park lighting, possibly motion sensitive; and</li> <li>• Repair and maintenance – task related flood lighting may be necessary.</li> </ul> No additional lighting is proposed along Bullen Road or along the additional access roads within the Substation Site Boundary.

## 29.5 Assessment Methodology

### 29.5.1 Guidance

62. This section summarises the methodology contained in Volume 3: *Appendix 29.1 – Landscape and Visual Impact Assessment Methodology*. The methodology accords principally with guidance set out in the updated GLVIA 3, as well as the other following reference documents;
- Guidelines for Landscape and Visual Impact Assessment: Third Edition (Landscape Institute and IEMA 2013);
  - Guidance on the Impact of Offshore Wind Farms: Seascape and Visual Impact Report (DTI 2006);
  - UK Offshore Energy Strategic Environmental Assessment (Department of Energy and Climate Change 2009);
  - Guide to Best Practice in Seascape Assessment (CCW, Brady Shipman Martin and University College Dublin 2001);
  - Visual Representation of Windfarms Good Practice Guidance Version 2 (Scottish Natural Heritage 2014);
  - Advice Note 01/11 Photography and Photomontage in Landscape and Visual Impact Assessment (Landscape Institute 2011); and
  - Landscape Character Assessment Guidance for England and Scotland (SNH and TCA 2002).

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### 29.5.1.1 National Policy Statement

63. The assessment of potential impacts on the landscape and visual receptors has been made with reference to relevant National Policy Statements (NPS), as discussed in Chapter 3 Policy and Legislative Context. The most relevant NPSs to the LVIA are:

- National Policy Statement for Energy (NPS EN-1 July 2011);
- National Policy Statement for Renewable Energy Infrastructure (NPS EN-3 July 2011); and
- National Policy Statement for Electricity Networks Infrastructure (NPS EN-5 July 2011).

64. In NPS EN-1, para 5.9.5 states that the applicant should carry out an LVIA, which should include reference to any landscape character assessment and associated studies as a means of assessing impacts on landscape character relevant to the project. The applicant's assessment should also take into account relevant local development policies, which have been based on these assessments.

### 29.5.2 Data Sources

65. *Table 29.4* below sets out the features of the key data sources used in the assessment.

Table 29.4. Data Sources Features

Data	Year	Coverage	Confidence	Notes
Consultation with Suffolk County Council	03/2014	Agreement on issues relevant to East Anglia THREE project LVIA	High	Consultation with officers relevant to LVIA issues
National Character Areas	2014	Classification of English landscape into broad character types	High	Designation undertaken by Natural England.
Suffolk Landscape Character Assessment	2010	Classification of Suffolk landscape into character types	High	Based on Countryside Agency Guidelines
Suffolk Coasts and Heaths AONB <sup>1</sup>	1970	Identification of a landscape of national importance	High	'Designation History Series Suffolk Coast and Heaths AONB' sets out justification for designation.
Register of Historic Parks and Gardens	Sep 2010	Listing of protected Parks and Gardens in England	High	Designation undertaken by Historic England with process set out on website.
Ordnance Survey 25,000 Raster from Vattenfall	Mar 2014	Mapping information	High	
Ordnance Survey 250,000 Raster from OS Open data	Jan 2014	Mapping information	High	
East Anglia ONE Environmental Statement	Nov 2012	Reporting impacts of East Anglia ONE project	High	Environmental Statement.
East Anglia THREE Scoping Report and Consultation Comments	Nov 2012 Dec 2012	Defining scope of East Anglia THREE project	High	Statutory and other Consultees provided feedback on scope of LVIA.

<sup>1</sup> Subsequent to the LVIA for this project being carried out by the applicant, the character and Special Qualities of the AONB have been formally set out and published in relation to a separate project, but are applicable to the AONB as a whole and follow the recognised Natural England format. This information can be found at <http://www.suffolkcoastal.gov.uk/yourdistrict/sizewell/aonb-special-qualities-document/>

### 29.5.3 Impact Assessment Methodology

66. Chapter 6 Environmental Impact Assessment Methodology sets out the general method which has guided the assessment of landscape and visual impacts. *Appendix 29.1 Seascape, Landscape and Visual Assessment Methodology* sets out in detail the methodology specific to the assessment. The methodology applied in the assessment of the proposed East Anglia THREE project differs in some respects from the methodology applied in East Anglia ONE. The East Anglia THREE methodology is based principally on GLVIA 3 which is an update of GLVIA 2 and which was published in 2013. The methodology applied in East Anglia ONE was based on a combination of GLVIA 2 and the DTI Guidance on the Impact of Offshore Windfarms.
67. The main changes include the consideration of the value and susceptibility of receptors as components of the overall sensitivity ratings, the consideration of visual receptors as people and assessing visual impacts more in respect of people's experiences, and defining the geographical extent of impacts rather than basing the assessment on specific locations.
68. GLVIA3 sets out an approach to the assessment of sensitivity which combines ratings of value with ratings of susceptibility. While GLVIA2 described sensitivity as the degree to which a landscape or visual receptor could accommodate change, this was assessed in relation to development generically. GLVIA3 in paragraph 5.43 highlights the importance of making reference to specific types of development, such that susceptibility is being assessed in respect of the features and attributes particular to the proposed development being assessed.
69. Sensitivity ratings assessed in the LVIA for East Anglia ONE are typically higher than the sensitivity ratings assessed in this, the LVIA for the proposed East Anglia THREE project. This is due to a combination of the change in methodology as described above, as well as the change in the baseline situation, brought about by the consent of East Anglia ONE. This consent affords a degree of certainty in relation to the construction of East Anglia ONE and, therefore, the assessment is based on a predicted baseline in which the components of this development are assumed to exist.
70. In respect of the landfall location and onshore cable route, the sensitivity would be typically lower than that assessed for the East Anglia ONE project as the cables would be pulled through existing ducts, avoiding the use of trenching or HDD. Receptors would therefore be less susceptible to this smaller scale and lower impact process. In respect of the substation, the sensitivity would also be typically lower as the East Anglia ONE substation is assumed to be present<sup>2</sup> as part of the predicted baseline, which, along with

<sup>2</sup> As discussed previously in section 29.3.2 this is based on the dimensions contained in the East Anglia ONE Offshore Wind Farm (Corrections and Amendments) Order 2016

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the operational Bramford Sub-station and associated electricity transmission lines, establishes this type and scale of development as an integral part of the localised baseline character. In specific instances, these factors reduce the susceptibility of the landscape and visual receptors to the East Anglia THREE substation.

71. OPEN's LVIA methodology accords with the guidance set out in the GLVIA3. Where it diverges from specific aspects of the guidance, in a small number of areas, reasoned professional justification for this is provided as follows.
72. GLVIA 3 sets out an approach to the assessment of magnitude of change in which three separate considerations are combined within the magnitude of change rating. These are the size or scale of the impact, its geographical extent and its duration and reversibility. This approach is to be applied in respect of both landscape and visual receptors with reference made in paragraphs 5.48, 5.50-5.52, 6.38 and 6.40-6.41.
73. OPEN considers that the process of combining all three considerations in one rating can distort the aim of identifying significant impacts of large scale development. For example, an increased magnitude of change, based on size or scale, may be reduced to a lower rating if it occurred in a localised area and for a short duration. This might mean that a potentially significant impact would be overlooked if impacts are diluted down due to their limited geographical extent and/or duration or reversibility. Conversely, a low magnitude of change, based on size or scale, may be increased to a higher rating if it occurred across a wider area or for a longer duration, giving rise to a significant impact despite the inherently low magnitude of change.
74. OPEN has chosen to keep these three considerations separate, by basing the magnitude of change on size or scale to determine where significant and not significant impacts occur, and then describing the geographical extent of these impacts and their duration and reversibility separately.
75. Presented below is a summary of the methodology, highlighting the criteria used as the basis for the assessment, the considerations taken into account in rating these criteria, with definitions for the different levels of rating and an explanation of how these criteria are combined to determine whether the impacts are significant or not significant.

#### **29.5.3.1 Types of Impact**

76. The impacts are categorised into three types: impacts on landscape receptors; impacts on visual receptors; and cumulative impacts on landscape and visual receptors.

### 29.5.3.1.1 Landscape Impacts

77. The LVIA considers the impacts on the physical elements of the site and the impacts on the landscape character of the site and its surroundings.

- Physical elements are those parts of the landscape that may be removed or altered as a result of the proposed East Anglia THREE project, for example trees, hedgerows, grassland.
- Landscape character is the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape and is often influenced by the way that landscape is perceived. Impacts on landscape character arise either through the introduction of new components that alter the pattern of existing elements, or through visibility of the proposed East Anglia THREE project, which may alter the way in which the pattern of elements is perceived. This category of impacts is considered in terms of landscape character receptors, which fall into two groups; landscape character types and landscape designations.

### 29.5.3.1.2 Visual Impacts

78. The LVIA considers the impact on people's views. Visual impacts include impacts on principal visual receptors and viewpoints.

- An assessment of the impacts on principal visual receptors includes residents of settlements, travellers using roads and railways, people using recreational routes, features and attractions throughout the study area.
- An assessment of the impacts on viewpoints representative of locations relevant to the principal visual receptors and from specific viewpoints, chosen because they are key or promoted viewpoints in the landscape.

### 29.5.3.2 Cumulative Impacts

79. Cumulative impacts arise where the study areas for two or more developments overlap so that both are experienced at proximity where they may have a greater incremental impact, or where developments may combine to have a sequential impact, irrespective of any overlap in study areas. This means that the addition of the proposed East Anglia THREE project to a situation where other developments are apparent in the baseline landscape and visual context may result in a greater impact than where the proposed East Anglia THREE project is seen in isolation.

### 29.5.3.3 Sensitivity

80. In accordance with GLVIA3, sensitivity is determined by the combination of the value of the receptor and its susceptibility to the proposed East Anglia

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THREE project. The basis for the assessment is made clear using evidence and applying professional judgement in the assessment of each receptor.

#### **29.5.3.3.1 Value**

81. The value of a landscape receptor is a reflection of the value which society attaches to that landscape and is influenced by the presence or not of landscape designations, the quality of the landscape and the experience of that landscape.
82. The value of a view or series of views is a reflection of the recognition and the importance attached either formally through identification on mapping or being subject to planning designations, or informally through the value which society attaches to the view(s). The rating is determined through consideration of the formal or informal recognition of the view and its scenic quality.
83. Ratings of high, medium to high, medium, medium to low and low are used to describe the value of the receptors.

#### **29.5.3.3.2 Susceptibility**

84. The susceptibility of a landscape character receptor is a reflection of its ability to accommodate the changes that would occur as a result of the addition of the proposed East Anglia THREE project. The rating is determined through consideration of the character of that landscape and its association with the landscape where the proposed East Anglia THREE project is located. Susceptibility also considers the specific nature of the proposed East Anglia THREE project in terms of its potential impacts on the landscape receptor.
85. The susceptibility of a viewer relates to the nature of the viewer experiencing the view and how susceptible they are to the potential impacts of the proposed East Anglia THREE project. The rating is determined through consideration of the nature and experience of the viewer, as well as the principle characteristics of the view.
86. Ratings of high, medium to high, medium, medium to low and low are used to describe the susceptibility of the receptors.

#### **29.5.3.4 Magnitude of Change**

87. The magnitude of change on landscape and visual receptors is an expression of the scale of the change that would result from the proposed East Anglia THREE project, and is dependent principally on the size or scale of the change. The geographical extent and the duration and reversibility of the impacts are assessed separately but used to describe the area over which the impact would be experienced and how long that impact would last.



Table 29.5 Definitions of the Magnitude of Change Levels

Magnitude	Definition
<b>High</b>	A major alteration to the baseline characteristics of the landscape / view, introducing a new prevailing influence and / or components that are substantially uncharacteristic in the receiving landscape.
<b>Medium</b>	A moderate alteration to the baseline characteristics of the landscape / view, introducing a new and readily apparent influence and/or components that may be prominent but are not uncharacteristic in the receiving landscape.
<b>Low</b>	A minor alteration to the baseline characteristics of the landscape / view, introducing a new and slightly apparent influence and/or components that are characteristic in the receiving landscape.
<b>Negligible</b>	A negligible alteration to the baseline characteristics of the landscape / view, introducing a new and barely discernible influence and/or components that are substantially characteristic in the receiving landscape.

88. Intermediate ratings of medium to high and medium to low can also be applied.
89. The geographical extent over which the impacts of the proposed East Anglia THREE project would be experienced can be described using the following scales:
- At the site level, within the site of the proposed East Anglia THREE project itself;
  - At the localised level, within the immediate setting of the site;
  - At the receptor level, within the extent of the landscape or visual receptor; and
  - At the multiple receptors level, within the extent of a number of landscape or visual receptors.
90. Duration is a separate consideration, whereby the period of time over which the impact is experienced, does not alter the magnitude of change rating, but describes how long the impact would last. This is of particular relevance in respect of the Single Phase and Two Phased options, whereby the impacts of the Two Phased approach would be spread over a longer period of time.
91. In terms of the proposed East Anglia THREE project, very short-term relates to a period of 0 to 1 year and applies mostly to the initial construction and decommissioning works. Short-term relates to a period of 1 to 5 years covering the entire construction and decommissioning phases and the period for reinstatement. Medium term relates to a period of 5 to 10 years and relates mostly to the time required for the majority of the vegetation to re-establish and grow to a reasonable size. Long term relates to a period of 10 to 25 years and relates to the majority of the operational phase of the proposed East Anglia THREE project.

92. Reversibility is a judgement about the prospects and practicality of a particular impact being reversed. The majority of the impacts relating to the proposed East Anglia THREE project would be reversible.

**29.5.3.5 Significance of the Impact**

93. The objective in assessing the impacts of the proposed East Anglia THREE project is to predict the significant impacts of the proposed East Anglia THREE project on landscape and visual receptors. In accordance with the GLVIA 3, the landscape and visual impacts are assessed to be either significant or not significant. The LVIA does not define levels of significance as guidance does not provide for these.

94. The significance of impacts is assessed through a combination of the sensitivity of the landscape element, landscape character receptor or visual receptor, and the magnitude of change that would result from the proposed East Anglia THREE project.

95. OPEN’s methodology requires the application of professional judgement in accordance with the Landscape Institute’s GLVIA3. Although it is not reliant on the use of a matrix, the following matrix has been included to illustrate how combinations of the ratings for sensitivity and magnitude of change can give rise to significant impacts, as well as to give an understanding of the threshold at which significant impacts may arise. *Table 29.6* provides this illustration.

Table 29.6 Impact Significance Matrix

Sensitivity	Magnitude					
	High	Medium-High	Medium	Medium-Low	Low	Negligible
High	Significant	Significant	Significant	Significant or not significant	Not significant	Not significant
Medium-High	Significant	Significant	Significant or not significant	Significant or not significant	Not significant	Not significant
Medium	Significant	Significant or not significant	Significant or not significant	Not significant	Not significant	Not significant
Medium-Low	Significant or not significant	Significant or not significant	Not significant	Not significant	Not significant	Not significant
Low	Significant or not significant	Not significant	Not significant	Not significant	Not significant	Not significant

96. Impacts that are assessed in the red boxes in the matrix are assessed to be significant in terms of the requirements of the EIA Regulations. Those impacts that are assessed in the orange boxes may be significant, or not significant, depending on the specific factors and impact that is assessed in

respect of a particular landscape or visual receptor. Those impacts that are assessed in the green boxes are not judged to result in a significant impact. In accordance with the GLVIA3, experienced professional judgement is applied to the assessment of all impacts and reasoned justification is presented in respect of the findings in each case.

Table 29.7 Impact Significance Definitions

Impact Significance	Definition
<b>Significant</b>	A significant impact occurs where the proposed East Anglia THREE project has a defining impact on the landscape / visual receptor.
<b>Not significant</b>	An impact is not significant where the proposed East Anglia THREE project does not have a defining impact on the landscape / visual receptor.
<b>No change</b>	No change occurs where the proposed East Anglia THREE project has no impact on the landscape / visual receptor.

- 97. A significant impact would occur where the combination of sensitivity and magnitude of change results in the proposed East Anglia THREE project having a defining impact on the physical element, landscape character receptor or visual receptor, so that it becomes the defining characteristic, albeit where it may be one of a number of defining characteristics. A not significant impact would occur where the proposed East Anglia THREE project does not become the defining characteristic, and the baseline characteristics of the physical element, landscape character receptor or visual receptor continue to provide the definitive influence.

**29.5.4 Cumulative Impact Assessment**

- 98. Chapter 6 Environmental Impact Assessment Methodology presents the general method and summarises the different steps of the Cumulative Impact Assessment for this chapter. *Appendix 29.1* sets out the more detailed methodology specific to the requirements of the LVIA process.
- 99. The objective of the Cumulative Landscape and Visual Impact Assessment (CLVIA) is to describe, visually represent and assess the ways in which the proposed East Anglia THREE project would have additional impacts when considered together with other existing, consented or proposed East Anglia projects and to identify related significant cumulative impacts arising as a result of the proposed East Anglia THREE project. The guiding principle in preparing the CLVIA is to ‘focus on the likely significant impacts and in particular those which are likely to influence the outcome of the consenting process’, in accordance with SNH guidance.
- 100. Projects with the potential to contribute to a significant cumulative impact are presented in Table 29.12 along with an initial assessment of their relevance to

the cumulative assessment. Potential cumulative impacts are most likely to relate to East Anglia ONE and future EAOW projects owing to their close proximity and scale.

### 29.5.5 Graphic Production

101. The written LVIA is accompanied by a set of graphics contained in Volume 2. Reference is made throughout the written text to these graphics, as they are an integral part of the overall assessment and of importance in illustrating specific issues. They should be viewed in accompaniment to the written text.
102. The graphics can be divided into two categories; maps and visualisations. The maps are based on the study area around the landfall location, onshore cable route, and substation, and present data of relevance to the assessment, such as the location and extent of landscape character types, landscape designations and principal visual receptors. A Zone of Theoretical Visibility ('ZTV') map is also included in relation to the East Anglia THREE substation. This digitally calculates the extent and level of theoretical visibility across a given area, using OS Terrain 5 mapping with 10 m contour intervals as the basis for the calculations. As this is based only on the 'bare earth', it does not take account of potential screening by vegetation or buildings, and is why it is referred to as 'theoretical visibility' and not 'actual visibility'.
103. The visualisations are based on the 16 viewpoint locations which are representative of the visual amenity of visual receptors in the surrounding area to the proposed East Anglia THREE substation. These viewpoints have been agreed with the statutory consultees. For each viewpoint there is a location plan and baseline photography. Beyond this, visualisations show the following scenarios;
- First phase of the Two Phased approach to the substation construction;
  - Second phase of the Two Phased approach / Single Phased approach;
  - Completed substation with mitigation planting and bunding after 15 years;
  - Completed substation with a future East Anglia project; and
  - Completed substation with a future East Anglia project with mitigation planting and bunding after 15 years.
104. The East Anglia THREE substation is shown to be added to a predicted baseline in which the East Anglia ONE substation is already present<sup>3</sup> - the consent of the East Anglia ONE project affords certainty with regard to the presence of the substation as part of the predicted baseline. The dimensions

<sup>3</sup> As discussed previously in section 29.3.2 this is based on the dimensions contained in the East Anglia ONE Offshore Wind Farm (Corrections and Amendments) Order 2016

and layout of the substation shown represent a non-material change to the Order for East Anglia ONE and proposed final design of the East Anglia ONE substation.. The first phase of the Two Phased approach shows only the western half of the substation developed. The second phase of the Two Phased approach shows the eastern half of the substation developed in addition to the western half. This equates to the Single Phased approach in which the whole substation would be developed in one phase.

105. Further visualisations are included which show the effect of mitigation planting and bunding 15 years after completion of the East Anglia THREE substation. This helps to visualise to what extent the substation would be screened from the different viewpoints. The cumulative visualisations show the effect of adding the East Anglia THREE substation to a cumulative scenario in which a future East Anglia project substation already exists. This scenario is also illustrated with mitigation planting and bunding after a 15-year period.
106. For those viewpoints with potential to undergo significant impacts, the visualisations have been prepared as photomontages, using the baseline photography and adding onto this a computer generated model of the substation. For the remaining viewpoints, the visualisations have been prepared as computer models. More detailed information on graphic production is included in the Assessment Methodology in *Appendix 29.1*.

## 29.6 Baseline Assessment

### 29.6.1 Introduction

107. The following section summarises the baseline condition of the study areas for the landfall, onshore cable route and substation. More detailed descriptions of the landscape and visual receptors associated with the assessment are contained in *Appendix 29.3* and *Appendix 29.4*.
108. The baseline conditions are the existing conditions of the site and study area prior to the introduction of the proposed East Anglia THREE project. Establishing the baseline conditions develops an understanding of the important components or characteristics, as well as how these are changing in response to existing forces for change. The baseline assessment helps to define the scope of the assessment by identifying those receptors which will require detailed assessment.
109. The baseline conditions are presented under the following three headings:
  - Landscape character;
  - Landscape related planning policies and designations; and
  - Visual receptors and views.

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110. For the purposes of the assessment the onshore cable route is divided into nine sections, the boundaries mostly defined by major road or river crossings. These sections are used as the basis for the assessment of the onshore cable route. Each section comprises more than one Landscape Character Type (LCT) and where necessary, reference to these individual LCTs is made. The sections are shown in Figures 29.4a – 29.4d.

### 29.6.2 Landscape Character

111. Landscape Character Assessments are produced at the national level by Natural England and at the local level by Suffolk County Council. These publications categorise the landscape into Landscape Character Types; areas which share a distinct and recognisable set of characteristics and pattern of components.
112. Natural England, at a national level, has classified the English landscape into National Character Areas (NCA), each of which presents characteristics which make it distinct from the other NCAs. This information is documented in the National Character Areas Study and is useful as a background reference to the assessment.
113. A more local and detailed level of landscape classification has been carried out by local authorities. In respect of East Anglia THREE onshore works, Suffolk County Council's Local Character Types (LCTs) are of direct relevance to the assessment.
114. Those LCTs which occur within the Study Areas of the landfall location, the onshore cable route and the substation are shown in *Figure 29.3* and referenced in Volume 3: *Appendix 29.2 Landscape and Visual Impact Assessment Baseline*. It is accepted that the boundaries of each of these LCTs, while clearly defined on plan would not be so readily apparent on the ground, where characteristics of adjoining LCTs are likely to be present.

#### 29.6.2.1 Overview of Landscape Character

115. The landscape character of Suffolk, where the onshore components of the proposed East Anglia THREE project are located, is predominantly low-lying, with a relatively flat landscape close to the coast, which becomes gently undulating inland. The coastal landscape is open and exposed, with a narrow band of low cliffs occurring to the north of Felixstowe. The estuary of the River Deben separates the landscape and is edged by saltmarshes and intertidal flats.
116. The majority of the landscape throughout the study area is agricultural, with intensive arable production being the main type of farming. While the majority of the landscape has been modified by agricultural practices, there are a number of areas where the special qualities of the natural landscape are evident, such as the beaches and cliff faces, the estuarine marshes and flats,

the riverside edges and the woodlands, many of which are ancient and which occur repeatedly across the wider landscape. The prolific extent of hedgerows and trees play an important role in providing enclosure and adding visual interest in an otherwise low and predominantly open landscape.

117. The relatively low-lying and level landform, combined with the extent of hedgerow and tree cover means that views within the study area are relatively limited in extent. This effect is accentuated in the shallow valleys which occur where views are especially intimate. More expansive views occur along the coast and across the marshlands where the scale of the landscape is broader and there are fewer intervening features to screen and filter views.

#### **29.6.2.2 Landscape Character of Landfall**

118. The landfall is located in the Rolling Estate Sandlands LCT which is associated with the coastal landscape to the north of Felixstowe and along the estuary of the River Deben. The coastline comprises narrow shingle beach and low cliffs, with farmland abutting hard onto the cliff tops. Expansive views are drawn out across the North Sea, and often feature passing vessels.

#### **29.6.2.3 Landscape Character of Onshore Cable Route**

119. The onshore cable route passes through eleven different LCTs. The landscape around the proposed East Anglia THREE project is predominantly farmed agricultural land. Large open fields feature extensively along the route, many used for arable crops. Field boundaries are often hedgerows with occasional hedgerow trees and intermittent woodlands or woodland shelterbelts. The gently undulating agricultural landscape continues for the majority of the study area making it difficult to discern subtle changes between landscape character types within the narrow confines of the 1km study area along the onshore cable route.
120. A noticeable change in character occurs where there is a change from large scale agricultural farmland to more intimate narrow valleys. In these areas the open fields are replaced with smaller scale fields consisting of rough grassland and native scrub woodland in places, and with generally a greater provision of enclosure from hedgerows and tree cover. The character of the landscape also changes as the route passes through the coastal levels at either side of the River Deben. Here the landscape is flat and open, allowing long range views across the landscape and the river estuary, with a strong influence from the large, expansive sky.

#### **29.6.2.4 Landscape Character of Substation Location**

121. The substation is located in the Ancient Plateau Claylands LCT which is characterised by a flat or gently rolling arable landscape of clay soils and a field pattern of ancient enclosure partially modified by agricultural improvement. There are also the characteristic features of a dispersed

settlement pattern of loosely clustered villages of medieval origin, albeit with some modern expansion. Hamlets and isolated farmsteads occur along the network of winding lanes and paths, often enclosed by associated mature hedgerows. Deciduous woodland, often ancient in origins, adds to the rural character of the landscape, as well as the containment of local views.

122. Built development in this landscape is typically small in scale and rural in character, such that the rural landscape defines the overall character of the LCT. The exception to this occurs around the Bramford substation, where also the consented East Anglia ONE converter station is to be located. Existing woodland in this area largely screens the substation and converter station such that the impact of these structures is limited to close range and localised parts of the LCT. In association with the Bramford Substation, there is a convergence of electricity transmission lines, in respect of which, the pylons form readily visible structures, extending above the height of the woodland cover. The concentration of these structures comes to characterise this localised part of the LCT, although the impact dissipates with distance from the substation as the transmission lines disperse in different directions and intervening woodland screens the combined effect.

### 29.6.3 Landscape Designations

123. Landscape designations which occur within the Study Areas of the landfall location, the onshore cable route and the substation location are shown in *Figure 29.2* and referenced in Volume 3: *Appendix 29.2 Landscape and Visual Impact Assessment Baseline*. Reference is also made in these appendices to designations relating to archaeology and cultural heritage.

#### 29.6.3.1 Area of Outstanding Natural Beauty (AONB)

124. AONBs are landscapes that are recognised to be of national importance. They are designated and protected under the Countryside and Rights of Way Act 2000, which places specific duties on local authorities to produce a management plan and places responsibility on all 'relevant authorities' in the area to conserve and enhance the natural beauty of the designated area. The first AONBs came into existence in 1956 and the designation of Suffolk Coast and Heaths AONB was confirmed in 1970.
125. The Suffolk Coast and Heaths AONB extends approximately 60km along the coast of Suffolk from the Stour Estuary in the south to Kessingland in the north. It is characterised by a low-lying coastal landscape including shingle beaches, crumbling cliffs, marshes, estuaries, heathland, forests and farmland. The AONB contains the few remaining fragments of Sandlings Heath and some of the least developed coastline in southern England. Neither of these areas occur within the onshore cable route study area while a short section of the coastline occurs in the landfall location study area.



126. The part of the study area subject to the Suffolk Coast and Heaths AONB is the eastern part which extends from Bawdsey, on the coast, to Woodbridge where Martlesham Creek meets the River Deben. While the AONB designation predates the Suffolk Landscape Character Assessment, the special qualities of the AONB are based on the LCTs which occur in the area. The route passes through five of the eight LCTs which make up the AONB, of which four are agricultural landscapes, with the Saltmarsh and Intertidal Flats LCT being the only largely unmodified landscape.
127. At the coast, the landfall and initial section of the onshore cable route lie within an area of Rolling Estate Farmlands LCT, before passing into the Coastal Levels LCT, and then passing through a very narrow band of Saltmarsh and Intertidal Flats LCT, prior to crossing the River Deben. On the opposite bank, the route passes again through the Coastal Levels LCT and then a mix of different agricultural landscapes where subtle variations in character occur as a result of the changing topography and extent of enclosure afforded by mature tree cover and hedgerows.
128. Beyond the crossing of the River Deben, the onshore cable route lies on the western edge of the AONB where the influence of the Saltmarshes and Intertidal Flats LCT is not readily evident and the character of the landscape is largely influenced by the agricultural land uses. With the exception of small sections of Saltmarshes and Intertidal Flats and Valley Meadowlands LCTs, the location of the onshore cable route would be through an agricultural landscape where the extent of mature tree cover and hedgerows combined with the subtle variations in landform add to the rural identity.

### 29.6.3.2 Special Landscape Areas (SLA)

129. SLAs are landscapes that are recognised to be of local importance. Saved Policy CL2 from the Mid Suffolk Local Plan (1998) states *'Within Special Landscape Areas, particular care will be taken to safeguard landscape quality, and where development does occur it should be sensitively designed, with high standards of layout, material and landscaping.'* With specific reference to utility installations and power lines, there is an expectation that these should be routed away from SLAs to avoid visual intrusion. Suffolk Coastal District Policy AP21 also states that: *'In the Area of Outstanding Natural Beauty and Special Landscape Areas the form of buildings, choice of materials, and colours must be sympathetic to the general character of the area and seek to reduce visual impact.'*
130. Mid Suffolk Core Strategy states in Paragraph 3.18: *'The Landscape Character Assessment does not replace the Special Landscape Area local designations. These designations will form part of the Development Control Policies DPD and will remain adopted until superseded by a level 3 Landscape Character Assessment of the District.'* The level 3 Landscape

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Character Assessment was not available for areas within the study area at the time of writing.

131. The SLAs are shown in *Figure 29.2* and referenced where relevant within the assessment in relation to the sensitivity of the landscape. The East Anglia THREE onshore cable route passes through areas designated as SLA, while the East Anglia THREE substation lies outwith the SLA designations.

#### **29.6.4 Visual Receptors and Views**

132. Principal visual receptors which occur within the Study Areas of the landfall location, the onshore cable route and the substation location are shown in *Figures 29.4a to 29.4d* and referenced in Volume 3: *Appendix 29.2 – Landscape and Visual Impact Assessment Baseline*.
133. Principal visual receptors include roads, settlements, Public Rights of Way (PRoWs) and other features from which visual receptors would experience views. The relatively discreet nature of the landfall location and the onshore cable route means that only the views of close range receptors would be affected and that impacts would be most likely to occur during construction, when machinery, spoil heaps and stored materials would form a more visible feature than the restored land and small kiosks which would be the only visible features post construction. The substation is a larger scale development with a greater extent of visibility and therefore visual receptors over a wider area would potentially be affected, with impacts most likely to occur during operation, as well as construction and decommissioning.

##### **29.6.4.1 Landfall Location**

134. Starting at the landfall location, the principal visual receptor with the potential to be affected would be the Suffolk Coast Path which extends from Felixstowe to Lowestoft. Some visibility may also occur from the residential properties to the south of Bawdsey and the minor road which connects with the ferry point.

##### **29.6.4.2 Onshore Cable Route**

135. The main settlements which have the potential to be affected by the onshore cable route include the villages of Waldringfield and Martlesham on the west bank of the River Deben and the southern side of the town of Woodbridge to the north of Martlesham Creek. To the west of Woodbridge, the onshore cable route passes between the villages of Great Bealings and Little Bealings both of which have potential to be affected. Where the onshore cable route passes under the A14, the route is sufficiently south of Claydon that it is unlikely to lead to significant impacts.
136. The majority of the roads which cross the onshore cable route are minor roads which access rural areas and which carry low volumes of traffic. To the west of Woodbridge, the onshore cable route passes under the larger and busier A12, as well as the Lowestoft to Ipswich Rail Line. To the south of

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Claydon, the onshore cable route passes under the A14 and the Ipswich to Norwich Rail Line.

137. The onshore cable route crosses a large number of footpaths; the most important of these in relation to the hierarchy of footpaths are the Fynn Valley Walk and the Gipping Valley River Path, both of which are long distance footpaths. National Cycle Route 1 crosses at various points along the onshore cable route and then passes around the northern side of the substation location.

#### **29.6.4.3 Substation**

138. The ZTV for the substation gives an initial indication of those principal visual receptors which have the potential to be affected. The valley location of a number of the villages reduces their potential to gain visibility of the substation location. It is only the villages set up on the higher ground that have the potential for visibility, such as the fringes of some of the villages, for example Burstall and Hintlesham. The extent of tree cover in and around most of the villages, combined with the screening effect of the village buildings, reduce actual visibility from many of the properties. The settled nature of this landscape means that a number of dispersed properties, such as farms, occur though the rural landscape and where open aspects occur there is the possibility of impacts arising.
139. There are no main roads in the study area, with the exception of the A14 which passes through the eastern edge and which is shown on the ZTV to gain very small patches of visibility. The ZTV shows that only sections of the rural minor road network would gain visibility of the substation. This would be greatly reduced by the extent of hedgerows, hedge-trees, hedge-banks and trees which align with most of the minor roads. It is only where these have been removed that open views from the road occur, for example to the south-west of Flowton and north-east of Elmsett.
140. Similar to the study area of the onshore cable route, there are many footpaths through the study area of the substation. The presence of hedgerows, hedge-trees, hedge-banks and trees alongside many of the footpaths and across the wider landscape reduce the extent to which the substation would be visible. There are a number of PRowS which pass close to the site, and others which are slightly more distant but with short open sections, from which views of the substation may be gained.

### **29.7 Residual Impacts**

141. The detailed assessment of impacts on landscape and visual receptors is presented in the following appendices;

- *Appendix 29.3: Landscape and Visual Impact Assessment of Landfall Location and Onshore Cable Route; and*
- *Appendix 29.4: Landscape and Visual Impact Assessment of Substation.*

142. Presented below is text and tables which summarise the findings of these detailed assessments for the Single Phase and Two Phased approaches. In the Single Phase approach all construction works would take place within a relatively continuous period. In the Two Phased approach the construction works would occur in two separate phases at the substation.
143. In respect of the substation at Bramford, the main impact of the Two Phased approach would be the construction of half the overall built form in the first phase and the construction of the second half of the built form in the second phase. The Single Phase and Two Phased approaches would only have implications during the construction phase – during the operational and decommissioning phases the impacts would be the same regardless of whether the construction has taken place under a Single Phase or Two Phased approach.
144. In terms of the implications of the LFAC and HVDC electrical solutions on the assessment, for the landfall and onshore cable route there would be no visible differences (more cables will be used for the LFAC solution but these will be contained in the same number of ducts and buried underground). The HVDC solution would require a converter station while the LFAC solution would require a substation. Although the compound for the LFAC solution would be 10m wider, the buildings for both electrical solutions would be the same dimensions.
145. Where significant impacts have been identified, the assessments for the receptors being significantly affected are summarised with specific and relevant detail.

### **29.7.1 Potential Impacts of Landfall, Onshore Cable Route and Substation Construction**

#### **29.7.1.1 Potential Impacts of Landfall Location Construction**

146. For the purposes of the assessment it is assumed that East Anglia ONE would be installed. HDD construction works would, therefore, already have taken place at the landfall location, and as a result the impact of the East Anglia THREE construction works would be greatly reduced, requiring smaller scale of works than that required for East Anglia ONE. As the cable ducts would already be installed, the main feature of the construction process would be construction of the transition bays and pulling through of the onshore cables.

#### 29.7.1.1.1 Potential Impacts of Landfall Construction on Physical Elements

147. The potential impacts of the landfall location on the physical elements of the cliffs and cliff tops would be limited as the existing ducts would already be in place and no further disturbance to the cliffs or cliff tops would occur other than access to the beach, which would be required under the short HDD option (see Chapter 5 Description of the Development). Access onto the beach by plant would potentially be required and the disturbance which the construction of a ramp would incur would give rise to a medium to high magnitude of change and a **significant** impact. This impact would cover the localised extent where the disturbance would occur, and would be very short term (0-1 years) and reversible. The impact of the construction works on the other physical elements associated with the beach and the adjacent agricultural land would be **not significant**. This finding relates principally to the relatively lower sensitivity of the physical elements associated with these locations and the relatively small scale of the construction works.

#### 29.7.1.1.2 Potential Impacts of Landfall Construction on Landscape Character

148. The potential impacts on the landscape character of the Rolling Estate Sandlands LCT and the Suffolk Coast and Heaths AONB would be limited by the presence of the existing ducts through the cliffs and adjacent farmland. This would enable the simpler and smaller scale process of pulling through cables without HDD drilling or open-cut trenching. These construction operations would be relatively small in scale, giving rise to a medium to low magnitude of change and an impact that would be **not significant**. The impacts would be very short term and reversible, and occur in a localised area around the construction works. The extent of the impacts would cover a very small proportion of the much wider LCTs and AONB.

#### 29.7.1.1.3 Potential Impacts of Landfall Construction on Visual Amenity

149. The potential impacts on the visual amenity of walkers on the Suffolk Coast Path and road-users on Ferry Road would be limited as the construction works would involve a pull-through of the cables without the requirement for HDD drilling or open-cut trenching. The visible components of the construction process would be sufficiently small in scale and relatively well contained to ensure the impacts on walkers and road-users would give rise to a medium to low magnitude of change and be **not significant**. The impacts would be very short term and reversible, and localised around the construction works.

#### 29.7.1.2 Potential Impacts of Onshore Cable Route Construction

150. Cable pulling operations would be undertaken at up to 62 locations along the onshore cable route. At each of these locations, there would be a requirement to construct up to two jointing bays and four kiosks. Access would be either, via haul road for isolated jointing bay locations, upgraded track access or directly from the public highway wherever possible. The haul

roads and CCS would be constructed as part of the proposed East Anglia THREE project, in locations where they were constructed and removed in relation to East Anglia ONE. In some locations, removal of hedgerows and other types of vegetation would be required for the construction of the jointing bays.

#### 29.7.1.2.1 Potential Impacts of Onshore Cable Route Construction on Physical Elements

151. The potential impacts on the physical elements would be limited by the existing presence of the ducts. Disturbance to, or loss of vegetation would be limited where the jointing bays would be constructed and cables pulled through. The majority of the works would take place in the less sensitive agricultural land with relatively little disturbance to hedgerows or woodland. Where sections of hedgerow would be removed in relation to the construction of the haul roads and CCSs, these would be the specimens replanted following the completion of East Anglia ONE and therefore would be relatively immature. Their removal would, therefore, have less of an impact than if they were more mature and well established specimens.
152. The impact on the physical elements would be **not significant** owing to the relatively small proportion of the wider physical elements that would be disturbed or removed and the reversibility of impacts through the reinstatement of vegetation on completion of the construction works. The impacts would be contained within those areas where the disturbance would occur, and would be very short term and reversible.

#### 29.7.1.2.2 Potential Impacts of Onshore Cable Route Construction on Landscape Character

153. The potential impacts on landscape character would be limited by the existing presence of the ducts, whereby the pull-through process would reduce the scale of the construction works and therefore the extent to which the character of the landscape would be altered. Haul roads and CCSs would be a requirement and a concentration of construction activity would occur in these locations and in relation to the jointing bays. The removal of hedgerows in relation to the haul roads and CCSs would coincide with sections where previous removals had occurred in relation to East Anglia ONE and, therefore, the removal of replanted specimens would have less of an impact than if they were more mature and well established specimens. The magnitude of change would be low or medium to low and the impact on the LCTs and the AONB would be **not significant** owing to the relatively small scale of the construction works, the limited extent to which the characterising features of the landscape would be altered, the impermanent nature of the construction works and the reversibility of any residual impacts. The impacts would be short-term and contained within the localised areas around the haul roads, CCSs and jointing bays, such that the wider extent of the LCTs and AONB would remain unaffected.

#### 29.7.1.2.3 Potential Impacts of Onshore Cable Route Construction on Visual Amenity

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154. The potential impacts of the onshore cable route on the visual amenity of the residents, road-users, walkers, horse riders, sailors and other visual receptors would arise principally from the construction and activity associated with the haul roads, CCSs and jointing bays, as well as the presence of machinery, equipment and storage associated with the construction works.
155. While the construction works would come close to a number of PRowS, roads, settlements and rivers, the impacts would be **not significant**. This would be on account of the relatively small scale of the construction works, the limited visibility of the construction works across the wider area, the impermanent nature of the construction works and the reversibility of any residual impacts. The impacts would be very short-term and contained within the localised extents around the haul roads, CCSs and jointing bays.

### 29.7.1.3 Potential Impacts of Substation Construction

156. For the purposes of the assessment it is assumed that East Anglia ONE would be operational and that it would occupy the land to the immediate west of where the East Anglia THREE substation would be constructed. In respect of some receptors, the construction of East Anglia THREE would be seen in conjunction with the East Anglia ONE substation. Impacts would arise primarily in relation to the construction of the main building associated with the proposed East Anglia THREE substation. Smaller scale construction works, such as the open trenching of the onshore cable route to the east of the substation would have a limited influence on landscape and visual receptors, owing to their small scale, as well as the existing influence of energy infrastructure on this close range and localised area.

#### 29.7.1.3.1 Potential Impacts of Substation Construction on Physical Elements

157. The East Anglia THREE substation would give rise to the loss of agricultural land and the potential removal of select hedgerows and trees. An area of agricultural land would be developed upon, however, owing to the low sensitivity of the agricultural land and its common occurrence across the wider landscape, the impact of the loss would be **not significant**. In respect of the loss of select trees and hedgerows, only a small proportion would be removed and these losses would be offset by the substantial extent of mitigation planting being proposed. This assessment applies to both the Single Phase and Two Phased approaches. Despite the impacts occurring twice during the Two Phased approach, they would remain not significant during each phase, although the impacts would occur for a longer period of time. The impacts would be localised, very short term and reversible.

#### 29.7.1.3.2 Potential Impacts of Substation Construction on Landscape Character

158. In respect of the potential impacts on landscape character, the East Anglia THREE substation in addition to East Anglia ONE substation would give rise to variable impacts depending on the extent of screening. The impact on

landscape character to the north-west and north-east would be reduced by the screening effect of the intervening woodland at Bushey Grove and Gobert's Grove, and to the south by the partial screening effect of the existing Bramford Sub-station and surrounding woodland. In these directions the magnitude of change would be low and the impact during construction would be **not significant**.

159. The addition of East Anglia THREE substation to the immediate east of the East Anglia ONE substation would mean that from the landscape to the west and south-west the construction works would be seen set behind the operational East Anglia ONE substation. This would screen the majority of the ground level works and while the emerging converter hall or substation hall and associated cranes would be visible above the East Anglia ONE components, they would be seen in a developed context. The magnitude of change would be medium to low and the impact in these directions would be **not significant**.
160. To the east and north, where the landscape is exposed to the construction of the East Anglia THREE substation, this would form a more notable feature. The construction works would be seen in a context in which the influences from East Anglia ONE substation and Bramford Sub-station would be less apparent. Out to a radius of 800m to the north and 800m to the east the magnitude of change would be medium to high and the impact on the Ancient Plateau Claylands LCT would be **significant**. The impacts would be very short-term and reversible.
161. This assessment applies to both the Single Phase and Two Phased approaches, with the predicted significant impacts occurring during the two separate construction periods and therefore for an overall longer period of time. The not significant impacts would also apply equally to the Single Phase and Two Phased approaches.

#### 29.7.1.3.3 Potential Impacts of Substation Construction on Visual Amenity

162. An initial assessment to consider the potential impacts of the substation on the viewpoints is presented in *Table 29.8* below. Many of the viewpoints are discounted from the assessment owing to the limited extent to which the East Anglia THREE substation or the East Anglia ONE substation are visible, either as a result of distance, the screening effect of intervening woodland or the screening effect of the substations of one another. In these instances, the impacts are assessed as **not significant**. The shaded cells in the table indicate which viewpoints have the potential to give rise to significant impacts and are to be assessed in detail. Both the Single Phase and Two Phased approaches have been considered in this initial assessment, although ultimately both would lead to the same magnitude of change, albeit occurring



over a longer period of time in respect of the Two Phased approach. The implications of phasing are considered in the detailed assessments.

Table 29.8. Potential Impacts on Visual Amenity

Visual Receptor	Potential Impacts
VP 1- Offton Road, near Elmsett Village	East Anglia THREE substation and East Anglia ONE substation would be distant and partially screened by intervening woodland.
VP2 – Flowton Village	East Anglia THREE substation and East Anglia ONE substation would be partially screened by intervening woodland.
VP3 –Flowton to Burstallhill Minor Road	East Anglia THREE substation and East Anglia ONE substation would be partially screened by intervening woodland.
VP4 – Minor Road to Hintlesham Priory	East Anglia THREE substation and East Anglia ONE substation would be screened by intervening woodland.
VP5 – Orchard Lands, near Canes Farm	East Anglia THREE substation would be visible to the rear of East Anglia ONE substation with screening from close range hedgerows and partial screening from more distant tree cover. There would be the potential for a significant impact.
VP 6 – PROW 147/006/0, near Hill Farm	East Anglia THREE substation would be located to the rear of East Anglia ONE substation and intervening tree cover would form partially screening. There would be the potential for a significant impact.
VP7 - Burstall	East Anglia THREE substation and East Anglia ONE substation would be partially screened by intervening woodland and seen set partially below the horizon.
VP8 – A1071, near Valley Farm	East Anglia THREE substation and East Anglia ONE substation would be distant and screened by intervening woodland.
VP9 – Thornbush Hall	East Anglia THREE substation and East Anglia ONE substation would be screened by intervening woodland.
VP 10 – PRoW 155/047/0, near Fidgeon’s Farm	East Anglia THREE substation and East Anglia ONE substation would be visible from this viewpoint with the potential to give rise to a significant impact.
VP 11 – PRoW 155/002/0, near Bullenhall Farm	East Anglia THREE substation and East Anglia ONE substation would be visible from this viewpoint with the potential to give rise to a significant impact.
VP12 – PRoW 155/003/0, near Tye House	East Anglia THREE substation and East Anglia ONE substation would be visible from this viewpoint with the potential to give rise to a significant impact.
VP13 – Tye Lane	No visibility of East Anglia THREE substation.
VP14 – Valley Road, near Nettlestead	East Anglia THREE substation and East Anglia ONE substation would be distant and partially screened by intervening woodland.
VP15 – Church Hill, near Canes Farm	East Anglia THREE substation and East Anglia ONE substation would be screened by intervening woodland.
VP16 – PRoW 155/003/0, north-east of site	East Anglia THREE substation would be screened by intervening woodland.

#### 29.7.1.3.4 Single Phase: Potential Impacts of Substation Construction on Viewpoint 5

163. For the purpose of the assessment it is assumed East Anglia ONE substation would be operational and partially visible as a collection of electrical infrastructure components, although from this viewpoint, mostly screened by intervening tree cover. The construction of East Anglia THREE substation would occur to the rear of East Anglia ONE substation. The intervening tree cover would screen the majority of the ground level construction works, while the emergence of the substation hall and the tall cranes associated with their construction would be visible above the tree tops.
164. The construction works would be seen to be located in an area where there is already a concentration of pylons, as well as two existing substations. It would, therefore, not appear as a new or unfamiliar feature in this view, but would add to the concentration of energy developments in this area. The East Anglia THREE construction works would not increase the horizontal extent of development as pylons already occur in the same part of the view. While the emerging structure of the East Anglia THREE substation would be in close alignment with the East Anglia ONE substation, it would be more apparent owing to its taller height and more solid form. The magnitude of change as a result of the construction works would be moderated by the influence that the existing Bramford Sub-station and associated pylons have on this view. Taking these factors into account, the magnitude of change would be medium and the impact would be **not significant**. The impact would be localised, very short term and reversible.

#### 29.7.1.3.5 Two Phased: Potential Impacts of Substation Construction on Viewpoint 5

165. In the Two Phased approach to construction it would be the converter hall or substation hall closest to East Anglia ONE that would be constructed during phase one and then the substation hall adjacent to the east that would be constructed during Phase Two. The impact of the construction of Phase One would have the same impact as the Single Phased approach assessed above, as the construction works associated with Phase One would be seen at the same minimum range from the viewpoint. Phase Two construction would be largely screened by phase one and therefore would have less of an impact. The impact of Phase One and Phase Two would be **not significant**. The impact would be localised, short term and reversible.

#### 29.7.1.3.6 Single Phase: Potential Impacts of Substation Construction on Viewpoint 6

166. For the purpose of the assessment it is assumed East Anglia ONE substation would be operational, partially visible from this viewpoint as a collection of electrical infrastructure components, although mostly screened by the intervening tree cover. The construction of East Anglia THREE substation would occur to the rear of East Anglia ONE substation. The intervening tree cover would screen the majority of the ground level construction works, while

the emergence of the substation hall and the tall cranes associated with their construction would be visible above the tree tops.

167. The construction works would be seen to be located in an area where there is already a concentration of pylons, as well as two existing substations. It would, therefore, not appear as a new or unfamiliar feature in this view, but would add to the concentration of energy developments in this location. While the emerging structure of the East Anglia THREE substation would be in close alignment with the East Anglia ONE substation, it would be more readily apparent owing to its taller height and more solid form. The magnitude of change as a result of the construction works would be moderated by the influence that the existing Bramford Sub-station and associated pylons have on this view. Taking these factors into account, the magnitude of change would be medium and the impact would be **not significant**. The impact would be very short-term, localised and reversible.

#### 29.7.1.3.7 Two Phased: Potential Impacts of Substation Construction on Viewpoint 6

168. In the Two Phased approach to construction it would be the converter hall or substation hall closest to East Anglia ONE that would be constructed during Phase One and then the substation hall adjacent to the east that would be constructed during Phase Two. The impact of the construction of Phase One would have the same impact as the Single Phased approach assessed above, as the construction works associated with Phase One would be seen at the same minimum range from the viewpoint. Phase Two construction would be largely screened by phase one and therefore would have less of an impact. The impact of Phase One and Phase Two would be **not significant**.

#### 29.7.1.3.8 Single Phase: Potential Impacts of Substation Construction on Viewpoint 10

169. It is assumed East Anglia ONE substation would be operational, albeit with very limited visibility occurring where distant components are seen through or above the intervening tree cover. The construction of East Anglia THREE substation would occur to the fore and right of East Anglia ONE substation. The intervening tree cover would screen the majority of the ground level construction works, with the emergence of the converter hall or substation hall and cranes associated with its construction visible above the tree tops. It would be mostly the roof structure that would be visible, which, at a range of 1.1km would form a comparatively minor feature in the view.
170. The construction works would be seen to be located in a part of the view already characterised by large scale pylons and a mast. The comparison between the scale of the pylons and masts and the scale of the construction works would act to reduce the perceived scale of the construction works. While the emerging structure of the East Anglia THREE substation would form an increase to the extent of development in the view, it would be largely screened by intervening woodland, and be seen as a relatively minor

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component. Taking all these factors into account the magnitude of change would be medium to low and the impact would be **not significant**. The impact would be localised in extent, very short term and reversible.

#### 29.7.1.3.9 Two Phased: Potential Impacts of Substation Construction on Viewpoint 10

171. In the Two Phased approach to construction it would be the converter hall or substation hall closest to East Anglia ONE that would be constructed during Phase One and then the substation hall adjacent to the east that would be constructed during Phase Two. The impact of the construction of phase one would have a slightly lesser impact than the Single Phase assessed above, as the construction would be seen at a slightly longer range from the viewpoint and seen to occupy a slightly more contained horizontal extent. The impact of phase one would be **not significant**.
172. The impact of Phase Two would be the same as assessed in respect of the Single Phase approach assessed above, giving rise to a **not significant** impact. Overall, the duration of the impact would be increased over a longer period of time.

#### 29.7.1.3.10 Single Phase: Potential Impacts of Substation Construction on Viewpoint 11

173. It is assumed that the East Anglia ONE substation would be operational, although visibility of components would be limited to those parts rising above the tops of the intervening tree cover. The construction of the East Anglia THREE substation would occur to the fore and right of the East Anglia ONE substation, and in the absence of any substantial tree cover, would be readily visible from this viewpoint and sections of the PRoW in either direction. The addition of the construction works within close proximity to this viewpoint, would give rise to a medium magnitude of change and a **significant** impact. The impact would be localised in extent, very short term and reversible.

#### 29.7.1.3.11 Two Phased: Potential Impacts of Substation Construction on Viewpoint 11

174. In the Two Phased approach to construction it would be the converter hall or substation hall closest to East Anglia ONE that would be constructed during Phase One and then the substation hall adjacent to the east that would be constructed during Phase Two. The impact of the construction of Phase One would have a slightly lesser impact than the Single Phase assessed above, as the construction would be seen at a slightly longer range from the viewpoint and seen to occupy a slightly more contained horizontal extent. The impact of Phase One would be **significant** as the construction works would be readily visible and seen at relatively close proximity.
175. The impact of Phase Two would be the same as assessed in respect of the Single Phase approach assessed above, giving rise to a **significant** impact. Overall, the duration of the impact would be increased over a longer period of time.

**29.7.1.3.12 Single Phase: Potential Impacts of Substation Construction on Viewpoint 12**

176. It is assumed East Anglia ONE substation would be operational, with components visible in the gap on the skyline between Gobert's Grove to the left of centre of the view and Bushey Grove to the right. The construction of East Anglia THREE substation would occur to the fore of East Anglia ONE substation, making it a closer range feature to the viewpoint. While some screening would occur from the intervening woodland, the construction works would be readily visible in the gap between Bushey Grove and Gobert's Grove. The relative proximity of the construction works to the viewpoint and the prominence of their location along the skyline would give rise to a medium to high magnitude of change and a **significant** impact, despite the existing presence and influence of energy infrastructure and the partial screening by existing woodland. The impact would be localised in extent, very short-term and reversible.

**29.7.1.3.13 Two Phased: Potential Impacts of Substation Construction on Viewpoint 12**

177. In the Two Phased approach to construction it would be the converter hall or substation hall closest to East Anglia ONE that would be constructed during Phase One and then the substation hall adjacent to the east that would be constructed during Phase Two. The impact of the construction of Phase One would have a slightly lesser impact than the Single Phase assessed above, as the construction would be seen at a slightly longer range from the viewpoint and seen to occupy a slightly more contained horizontal extent. The impact of Phase One would be **significant** as the construction works would be readily visible and seen at relatively close proximity.

178. The impact of Phase Two would be the same as assessed in respect of the Single Phase approach assessed above, giving rise to a **significant** impact. Overall, the duration of the impact would be increased over a longer period of time.

Table 29.9 Summary of Impacts of Landfall Location, Onshore Cable Route and Substation

Project Stage / Receptor Type	Receptor / Project stage	Sensitivity	Magnitude of change	Significance of impact	Duration
<b>Construction of Landfall Location</b>					
Physical elements	Beach	Medium to low	Medium to low	<b>Not significant</b>	Very short-term
	Cliffs / cliff top	Medium to high	Medium to high in area of access road Medium to low in remaining areas	<b>Significant</b> in area of access route <b>Not significant</b> in remaining areas	Very short-term
	Agricultural land	Low	Medium	<b>Not significant</b>	Very short-term
Landscape character receptors	Rolling Estate Sandlands LCT	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
	Suffolk Coast and Heaths AONB	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
Visual receptors	Suffolk Coast Path	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
<b>Construction of Onshore Cable Route</b>					
Physical elements	Agricultural land	Low	Low	<b>Not significant</b>	Very short-term
	Marshy grassland and swamp / Calciferous grassland	Medium	Medium to low	<b>Not significant</b>	Very short-term
	Hedgerow / Hedgerow trees	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
	Trees and woodlands	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
	Watercourses	High	Medium to low	<b>Not significant</b>	Very short-term
Landscape Character Section 1	Rolling Estate Sandlands	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
Section 2	Rolling Estate Sandlands /	Medium to	Medium to low	<b>Not significant</b>	Very

Project Stage / Receptor Type	Receptor / Project stage	Sensitivity	Magnitude of change	Significance of impact	Duration
	Coastal Levels / Plateau Estate Farmlands	high			short-term
	Saltmarshes and Intertidal Flats	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
Section 3	Rolling Estate Sandlands / Estate Sandlands/ Plateau Estate Farmlands	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
	Valley Meadowlands	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
Section 4	Rolling Estate Sandlands / Estate Sandlands	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
Section 5	Valley Meadowlands / Rolling Valley Farmlands and Furze	Medium to low	Medium to low	<b>Not significant</b>	Very short-term
Section 6	Ancient Rolling Farmlands / Rolling Valley Farmlands and Furze	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
Section 7	Ancient Rolling Farmlands / Rolling Valley Farmlands and Furze	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
Section 8	Ancient Rolling Farmlands / Rolling Estate Farmlands	Medium	Medium to low	<b>Not significant</b>	Very short-term
Section 9	Ancient Plateau Claylands / Rolling Valley Farmlands / Valley Meadowlands	Medium	Medium to low	<b>Not significant</b>	Very short-term
Suffolk Coast and Heaths AONB	Saltmarsh and Intertidal Flats / Valley	Medium to high	Medium to low	<b>Not significant</b>	Very short-term

Project Stage / Receptor Type	Receptor / Project stage	Sensitivity	Magnitude of change	Significance of impact	Duration
	Meadowlands / Coastal Levels / Estate Sandlands / Rolling Estate Sandlands / Estate Farmlands				
Section 1	Walkers	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
	Road-users	Medium	Medium to low	<b>Not significant</b>	Very short-term
Section 2	Walkers	Medium	Medium to low	<b>Not significant</b>	Very short-term
	River-users	Medium	Medium to low	<b>Not significant</b>	Very short-term
Section 3	Walkers / horse riders	Medium	Medium to low	<b>Not significant</b>	Very short-term
	Road-users	Medium to low	Medium to low	<b>Not significant</b>	Very short-term
Section 4	Walkers / horse riders	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
	Residents	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
	Road-users	Medium to low	Medium to low	<b>Not significant</b>	Very short-term
	Cyclists	Medium	Medium to low	<b>Not significant</b>	Very short-term
Section 5	Walkers	Medium	Medium to low	<b>Not significant</b>	Very short-term
	Residents	Medium	Medium to low	<b>Not significant</b>	Very short-term
	Road-users	Medium to low	Medium to low	<b>Not significant</b>	Very short-term
Section 6	Walkers	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
	Residents	Medium to high	Low	<b>Not significant</b>	Very short-term
	Road-users	Medium	Medium to low	<b>Not significant</b>	Very short-term
	Cyclists	Medium	Medium to low	<b>Not significant</b>	Very short-term



Project Stage / Receptor Type	Receptor / Project stage	Sensitivity	Magnitude of change	Significance of impact	Duration
Section 7	Walkers	Medium to high	Medium to low	<b>Not significant</b>	Very short-term
	Road-users	Medium to low	Medium to low	<b>Not significant</b>	Very short-term
Section 8	Walkers / horse riders	Medium	Medium to low	<b>Not significant</b>	Very short-term
	Road-users	Medium to low	Medium to low	<b>Not significant</b>	Very short-term
Section 9	Walkers	Medium	Medium to low	<b>Not significant</b>	Very short-term
	Road-users	Medium to low	Medium to low	<b>Not significant</b>	Very short-term
<b>Construction of Substation</b>					
Physical Elements	Agricultural land	Low	Low	<b>Not significant</b>	Long-term
	Trees and hedgerows	Medium to high	Low	<b>Not significant</b>	Long-term
Landscape Character	Ancient Plateau Claylands: 800m to north and east,	Medium	Medium to high	<b>Significant</b>	Single Phased: Very short-term Two Phased: Short-term
	Ancient Plateau Claylands: remaining area	Medium	Low / Medium to low	<b>Not significant</b>	SP: Very short-term TP: Short-term
Visual Amenity	VP 5 – Orchard Lands, near Canes Farm	Medium - residents	Medium	<b>Not significant</b>	SP: Very short-term TP: Short-term
	VP 6 – PRoW 147/006/0, near Hill Farm	Medium - walkers	Medium	<b>Not significant</b>	SP: Very short-term TP: Short-term
	VP 10 – PRoW 155/047/0, near Fidgeon's Farm	Medium - walkers	Medium to low	<b>Not significant</b>	SP: Very short-term TP: Short-

Project Stage / Receptor Type	Receptor / Project stage	Sensitivity	Magnitude of change	Significance of impact	Duration
					term
	VP 11 – PRow 155/002/0, near Bullenhall Farm	Medium - walkers	Medium	<b>Significant</b>	SP: Very short-term TP: Short-term
	VP12 – PRow 155/003/0, near Tye House	Medium – walkers / residents low – road-users	Medium to high	<b>Significant – walkers / residents</b> <b>Not significant – road-users</b>	SP: Very short-term TP: Short-term

**29.7.2 Potential Impacts of Landfall Location, Onshore Cable Route and Substation Operation.**

**29.7.2.1 Potential Impacts of Landfall Location and Onshore Cable Route Operation**

- 179. The operational impacts of the project would require limited maintenance along the landfall and onshore cable route. As a worst case scenario, it is assumed one visit per year per jointing bay would be made for maintenance purposes. Routine maintenance works during operation would either be via excavation at jointing bays or inspection of above-ground kiosks.
- 180. Once the construction phase is complete and the proposed East Anglia THREE project is operational, there would be limited visible evidence of the landfall location and the onshore cable route as they would be concealed below ground surface. Kiosks, if used, would be located at each of the jointing bays and would be the only above ground feature on the onshore cable route. It is assumed that the proposed East Anglia ONE project would also be operational and this would, therefore, also be concealed below ground surface.

**29.7.2.1.1 Potential Impacts of Landfall Location and Onshore Cable Route on Physical Elements**

- 181. The potential impacts during operation on the physical elements would be **not significant** as no further removals or alterations would occur and where gaps in hedgerows had been formed during the construction phase, during the operational phase re-planting would gradually grow to infill these gaps.

**29.7.2.1.2 Potential Impacts of Landfall Location and Onshore Cable Route on Landscape Character**

- 182. The potential impacts during operation on landscape character would be **not significant**, as there would be no visible evidence of the constructed components, other than the intermittent, small scale and relatively discreet kiosks, and no further presence of construction works or machinery. While

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there would be residual impacts on landscape character and visual amenity relating to the time required for hedgerow vegetation to re-establish, the impact would be **not significant** owing to the limited scale of these impacts and the gradual reduction in these impacts as the vegetation grows. The extent of the impacts would be localised and the duration short term.

#### 29.7.2.1.3 Potential Impacts of Landfall Location and Onshore Cable Route on Visual Amenity

183. The potential impacts during operation on visual amenity would be **not significant**, as there would be no visible evidence of the constructed components, other than the intermittent, small scale and relatively discreet kiosks, and no further presence of construction works or machinery. While there would be a residual impact on visual amenity relating to the time required for hedgerow vegetation to re-establish, the impact would be **not significant** owing to the limited extent of these impacts in relation to the distance from many of the visual receptors, the existing condition of the hedgerows and the gradual reduction in these impacts as the vegetation grows. The extent of the impacts would be localised and the duration short term.

#### 29.7.2.2 Potential Impacts of Substation Operation

184. For the purposes of the assessment it is assumed that the East Anglia ONE substation would be operational. This has an influence on the assessment of the East Anglia THREE substation because East Anglia ONE substation already has an influence on the baseline character, along with Bramford Substation and associated electricity transmission lines in the area. This creates a context, in which the introduction of East Anglia THREE substation would appear to be associated with these existing uses and be seen to add to the extent of this type of development.

##### 29.7.2.2.1 Potential Impacts of Substation Operation on Physical Elements

185. Once operational, the impacts would be **not significant** as there would be no further loss or alteration to the physical elements of the landscape. Mitigation planting, which would have been established as part of East Anglia ONE would occur to the south-west, east and immediate north. The trees would be planted on a 4m high earth bund to the south-west, which would add to the height of the screening effect. Mitigation planting as part of East Anglia THREE would occur to the north and north-east with trees planted on a 5m high earth bund to the north. Taking into account the fact that East Anglia ONE planting would be implemented a minimum of three years prior to construction of East Anglia THREE substation, the height of the nurse species after 15 years would be as follows; 8.2m in the areas to the west, east and immediate north, and 7m in the remaining areas to the north and north-east. The planting to the north and west that sits on the earth bunds would reach a maximum combined height of 12.2m above baseline ground level to the west and 12m above to the north. By the end of the 25-year period the maximum

heights would be 12.2m where there is no bunding, 16.2m on the bund to the west, 16m on the bund to the north and 11m in the remaining areas to the north.

#### 29.7.2.2.2 Potential Impacts of Substation Operation on Landscape Character

186. The substation would be located in the Ancient Plateau Claylands LCT and the **significant** impacts would occur 800m to the north and east. The presence of mitigation planting to the north and east would limit the duration of the significant impacts to the first 15 years by which time the planting would have established sufficiently enough to reduce the influence of the substation on the character of the landscape. For the remaining 10 years of the likely project duration, the impacts would be **not significant**.

#### 29.7.2.2.3 Potential Impacts of Substation Operation on Visual Amenity

187. Viewpoint 5: It is assumed East Anglia ONE substation would be operational, although from this viewpoint, the components would be largely screened by intervening tree cover. While East Anglia THREE substation would occur to the rear of East Anglia ONE substation, owing to its larger size and solid form it would be more readily apparent. Existing tree cover would screen the lower parts of East Anglia THREE substation. The location of the substation at a distance of 1.04km from the viewpoint means it would not be seen as a close range feature and the scale comparisons with the surrounding pylons would act to reduce the perceived scale of the substation.
188. In considering the wider extent this viewpoint represents, views from the minor road, lower ground floors and garden grounds would be likely to be screened by intervening hedgerows and, therefore, much more limited than is shown in the photomontages. While views from the upper floors would potentially show a view similar to that photo-montaged, the orientation for most properties would typically be aligned towards Bramford Sub-station, such that East Anglia THREE substation would not form the main feature. While nurse species in the mitigation planting would take 25 years to reach approximately 12m, in the interim it would bolster the existing tree planting, giving the screening effect more depth and substance.
189. Taking all these factors into account, the magnitude of change on this view would be medium. The impact of the East Anglia THREE substation on the view would be **not significant**, owing principally to the screening effect of the intervening tree cover and the existing influence of other energy developments in this view, most notably the pylons, and the comparatively lesser influence which would arise as a result of the addition of the East Anglia THREE substation.
190. Viewpoint 6: It is assumed the East Anglia ONE substation would be operational, although from this viewpoint the components would be largely screened by intervening tree cover. East Anglia THREE substation would

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occur to the rear of East Anglia ONE substation, although components of the closer range East Anglia ONE would also be seen to the right of the substation hall. East Anglia THREE substation would form an increase in the overall extent of energy developments in the view, albeit in an area where electricity transmission pylons already occur. Existing tree cover would screen the lower parts of East Anglia THREE substation, such that only the middle and upper parts would be visible between and above the trees.

191. While nurse species in the mitigation planting would take 25 years to reach approximately 12m, in the interim it would bolster the existing tree planting, giving the screening effect more depth and substance. East Anglia THREE substation would be seen in the context of a landscape where the presence of Bramford substation, East Anglia ONE substation and the electricity transmission pylons already have an influence on views from this PRoW.
192. Taking all these factors into account, the magnitude of change on this view would be medium. The impact of the East Anglia THREE substation on the view would be **not significant**, owing principally to the screening effect of the intervening tree cover and the existing influence of development in this view, most notably the pylons, and the comparatively lesser influence which would arise as a result of the addition of the East Anglia THREE substation.
193. Viewpoint 10: It is assumed that the East Anglia ONE substation would be operational, with a very limited possibility of visibility occurring where components might be seen to extend above the intervening tree cover. The East Anglia THREE substation would occur to the right (east) of the East Anglia ONE substation, and the larger and more solid form of the substation hall would make it a more visible feature. Existing tree cover would screen the lower parts of East Anglia THREE substation, such that only the roof structure would be visible above the tree tops. The substation would appear relatively small scale from this distance of 1.1km, especially in comparison to the much taller masts and pylons visible in this sector of the view. While East Anglia THREE substation would form an increase in the overall extent of development visible in the view, it would not form a notable feature and the magnitude of change would be medium.
194. The impact of the East Anglia THREE substation on the view would be **not significant** owing principally to the screening effect of the intervening tree cover, the existing influence of development in this view and the comparatively small addition which the additional substation would make in respect of the existing development. The impact would be localised, long term and reversible.
195. Viewpoint 11: For the purpose of this assessment, it is assumed that East Anglia ONE substation would be operational, although only partly visible from

this viewpoint owing to the relatively small scale of the components and the screening effect of the intervening tree cover. East Anglia THREE substation would occur largely to the fore of East Anglia ONE substation, although components of East Anglia One would continue to be partly visible above the tree tops to the left. East Anglia THREE would be readily visible from this viewpoint and sections of the PRow in either direction. In this view, East Anglia THREE substation would appear as a close range feature although its perceived scale would be moderated by the presence of the larger scale pylons. In the absence of any other large scale buildings in the view, it would, nonetheless, form a notable addition to the presence of energy developments in this view and the magnitude of change would be medium.

- 196. The impact of the East Anglia THREE substation operation on the view would be **significant** for the first 15 years and then not significant for the last 10 years of the 25-year consent period as mitigation planting becomes more fully established and partially screens visibility of the substation. The impact would be localised, long term and reversible.
- 197. Viewpoint 12: It is assumed that the East Anglia ONE substation would be operational and in Viewpoint 12, visible as a large-scale structure. The East Anglia THREE substation would occur to the fore and left of the East Anglia ONE substation, making it a closer range feature to the viewpoint. While some screening would occur from the intervening woodland, the East Anglia THREE substation would be readily visible in the gap between Bushey Grove and Gobert’s Grove and the magnitude of change would be medium to high.
- 198. Mitigation planting along the northern side of the East Anglia THREE substation would gradually reduce the magnitude of change as the planting would grow to screen the majority of the substation. This would gradually reduce the magnitude of change to medium to low. The impact would be **significant** for the first 15 years and then **not significant** for the last 10 years of the 25-year consent period.

Table 29.10 Summary of Impacts of Landfall Location, Onshore Cable Route and Substation Operation

Project Stage / Receptor Type	Receptor / Project stage	Sensitivity	Magnitude of change	Significance of impact	Duration
Operation of Landfall Location					
Physical elements	Beach / Cliff / Agricultural land	Medium to low / medium to high / low	Low / negligible	<b>Not significant</b>	Short-term
Landscape character receptors	Rolling Estate Sandlands Suffolk Coast and	Medium to high	Low / negligible	<b>Not significant</b>	Short-term

Project Stage / Receptor Type	Receptor / Project stage	Sensitivity	Magnitude of change	Significance of impact	Duration
	Heaths AONB				
Visual receptors	Suffolk Coast Path	Medium to high	Low / negligible	<b>Not significant</b>	Short-term
<b>Operation of Onshore Cable Route</b>					
Physical elements	Agricultural land / marshy grassland / hedgerows / hedgetrees / trees / woodland / water courses	Variable between low and high	Low / negligible	<b>Not significant</b>	Short-term
Landscape character receptors	All LCTs Suffolk Coast and Heaths AONB	Variable between medium and medium to high	Low / negligible	<b>Not significant</b>	Short-term
Visual receptors	All PRowS / Bridleways / NCRs / minor roads / roads and railways / residential areas / rivers	Variable between low and medium to high	Low / negligible	<b>Not significant</b>	Short-term
<b>Operation of Substation</b>					
Physical elements	Agricultural land Trees and hedgerows	Low Medium to high	No change	<b>Not significant</b>	Long-term
Landscape Character	Ancient Plateau Claylands: 800m to north and east	Medium	Medium to high	<b>Significant year 0-15</b>	Long term
	Ancient Plateau Claylands: 800m to north and east	Medium	Medium	<b>Not significant year 15-25</b>	Long term
	Ancient Plateau Claylands: Remaining areas	Medium	Low	<b>Not significant</b>	Long-term
Visual Amenity	VP 1- Offton Road, near Elmsett Village	Medium to low – road-users	Medium to low	<b>Not significant</b>	Long-term
	VP2 – Flowton	Medium –	Medium to	<b>Not significant</b>	Long-term

Project Stage / Receptor Type	Receptor / Project stage	Sensitivity	Magnitude of change	Significance of impact	Duration
	Village	walkers / residents Medium to low – road-users	low		
	VP3 –Flowton to Burstallhill Minor Road	Medium	Medium to low	<b>Not significant</b>	Long-term
	VP4 – Minor Road to Hintlesham Priory	No impact due to lack of visibility			
	VP5 – Orchard lands, near Canes Farm	Medium – walkers / residents medium to low – road-users	Medium	<b>Not significant</b>	Long term
	VP 6 – PRoW 147/006/0, near Hill Farm	Medium - walkers	Medium	<b>Not significant</b>	Long term
	VP7 - Burstall	Medium	Medium	<b>Not significant</b>	Long term
	VP8 – A1071, near Valley Farm	No impact due to lack of visibility			
	VP9 – Thornbush Hall	Medium	Low	<b>Not significant</b>	Long term
	VP 10 – PRoW 155/047/0, near Fidgeon’s Farm	Medium - walkers	Medium	<b>Not significant</b>	Long term
	VP 11 – PRoW 155/002/0, near Bullenhall Farm	Medium	Medium year 0-15 Medium to low year 15-25	<b>Significant</b> year 0-15 <b>Not significant</b> year 15-25	Long term
	VP12 – PRoW 155/003/0, near Tye House	Medium – walkers / residents Low – road-users	Medium to high – year 0-15 Medium year 15-25	<b>Significant</b> year 0-15 <b>Not significant</b> year 15-25	Long term
	VP13 – Tye Lane	No impact due to lack of visibility			
	VP14 – Valley Road, near Nettlestead	No impact due to lack of visibility			
	VP15 – Church Hill,	Medium to low	Low	<b>Not significant</b>	Long-term



Project Stage / Receptor Type	Receptor / Project stage	Sensitivity	Magnitude of change	Significance of impact	Duration
	near Canes Farm				
	VP16 – PRoW 155/003/0, north-east of site	Medium	Medium to Low	<b>Not significant</b>	Long-term

**29.7.3 Potential Impacts of Landfall Location, Onshore Cable Route and Substation Decommissioning**

- 199. It is anticipated that the landfall location and onshore cable route would be decommissioned and the cables left in-situ. The kiosks at the jointing bays would be removed. This means that there would be no further impact on the landscape and visual receptors.
- 200. There would be no impact on the physical elements. The magnitude of change on the landscape character types, designated AONB and SLA, and visual receptors would be low at the most. Even with variable sensitivities attributed to these receptors at the landfall location and along the length of the onshore cable route, the impacts would be **not significant**, owing to the absence of any high sensitivity receptors and the anticipated low magnitudes of change.
- 201. If the decommissioning of the substation location does not involve the re-use of the site for future developments, the buildings would be removed. This would reduce the extent of built development and allow for the restoration of the physical elements of the agricultural landscape to take place. The magnitude of change would be low and the impacts of decommissioning on the physical elements would be **not significant**.
- 202. The decommissioning of the substation location would introduce temporary structures, temporary lighting and traffic movements of machinery, which although associated with the existing development, would appear at variance with the rural character of the surrounding landscape. Mitigation planting around the substation location would, by the end of the 25-year consent, have reached approximately 12m, and would screen most of the ground level operations. The deconstruction of the substation location, especially at the higher levels and where temporary lighting is required, would give rise to a medium to low magnitude of change on the landscape and visual receptors and the impacts would be **not significant**.

Table 29.11. Summary of Impacts of Landfall Location, Onshore Cable Route and Substation during Decommissioning

Project Stage / Receptor Type	Receptor / Project stage	Sensitivity	Magnitude of change	Significance of the impact	Duration
<b>Decommissioning of Landfall</b>					
Physical elements	Beach / Cliff / Agricultural land	Medium to low / Medium to high / low	Low / negligible	<b>Not significant</b>	Very short-term
Landscape character receptors	Rolling Estate Sandlands Suffolk Coast and Heaths AONB	Medium to high	Low / negligible	<b>Not significant</b>	Very short-term
Visual receptors	Suffolk Coast Path Ferry Road	Medium to high / medium	Low / negligible	<b>Not significant</b>	Very short-term
<b>Decommissioning of Onshore Cable Route</b>					
Physical elements	Agricultural land / marshy grassland / hedgerows / hedgetrees / trees / woodland / water courses	Variable between low and high	Low / negligible	<b>Not significant</b>	Very short-term
Landscape character receptors	All LCTs Suffolk Coast and Heaths AONB	Variable between medium and medium to high	Low / negligible	<b>Not significant</b>	Very short-term
Visual receptors	All PRoWs / Bridleways / NCRs / minor roads / roads and railways / residential areas / rivers	Variable between low and medium to high	Low / negligible	<b>Not significant</b>	Very short-term
<b>Decommissioning of Substation</b>					
Physical elements	Agricultural land Trees and hedgerows	Low Medium to high	Low	<b>Not significant</b>	Very short-term
Landscape character	Ancient Plateau Claylands	Medium	Low	<b>Not significant</b>	Very short-term
Visual amenity	All viewpoints	Variable: low-medium	Low	<b>Not significant</b>	Very short-term

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## 29.8 Cumulative Impacts

### 29.8.1 Introduction

203. The cumulative assessment of landscape and visual impacts considers the potential for cumulative impacts to arise in relation to other developments. *Table 29.12* lists other wind farm and major infrastructure projects which are potentially relevant to the proposed East Anglia THREE project along with an initial assessment as to whether the potential cumulative impacts require to be assessed in detail in this Cumulative Landscape and Visual Assessment (CLVIA). The assessment of residual impacts in section 29.7 highlights the fact that significant impacts are more likely to relate to the substation than the landfall location or onshore cable route. In respect of the CLVIA, this is also true as the substations would be the most visible and readily apparent components of the onshore electrical transmission works, while the onshore cable route and landfall location would be relatively discreet within the wider landscape, especially once beyond construction.
204. East Anglia ONE forms part of the predicted baseline, based on the assumption that the East Anglia ONE substation would be built prior to the construction of the proposed East Anglia THREE substation. Reference is made to the presence of the East Anglia ONE substation in the cumulative assessment, in respect of how it influences the overall cumulative impact.

Table 29.12 Summary of Projects considered for the CLVIA

Project	Status	Construction / Operation period	<sup>4</sup> Approx. Distance from East Anglia THREE (km)	Project definition	Project data status	Included in CIA	Rationale
East Anglia ONE	Application	2018 –2019 / 25 years	0	Offshore Windfarm Project Project description available	Complete / high	Yes	Location of East Anglia ONE largely coincides with East Anglia THREE project. Impacts considered as part of predicted baseline.
A future EAOW project	Pre-application	No information	0	Offshore Windfarm Project Outline project data only	Incomplete / low	Yes	Location of a future EAOW project largely coincides with East Anglia THREE project therefore high potential for cumulative impacts to arise.
Sizewell C	Pre-application	Unknown	24.7	Nuclear Power Station No project detail available	Low	No	The distance between Sizewell C and the East Anglia THREE project limits the potential for significant cumulative impacts to arise.
Bramford-Twinstead	Pre-application	Unknown	0	Outline only	Complete / high	No	Insufficient information available to inform a CLVIA.
SnOasis	Planning permission granted	Unknown	0.7	Winter sport centre. Master plans available	Incomplete / low	No	The distance between SnOasis and the East Anglia THREE substation limits the potential for significant cumulative impacts to arise and it is unlikely for significant cumulative impacts to arise in

<sup>4</sup> Shortest distance between the considered project and East Anglia THREE– unless specified otherwise.

Project	Status	Construction / Operation period	<sup>4</sup> Approx. Distance from East Anglia THREE (km)	Project definition	Project data status	Included in CIA	Rationale
							relation to the onshore cable route despite proximity.
Old Fisons site (land west of Paper Mill Lane)	Planning application TBD	Unknown	0.7	Business park and housing scheme. Master plans available	Complete / high	No	The distance between Old Fison’s site and the East Anglia THREE substation limits the potential for significant cumulative impacts to arise and it is unlikely for significant cumulative impacts to arise in relation to the onshore cable route despite proximity.
Adastral park	Planning application TBD	Unknown	0.8	Business park and housing scheme. Master plans available	Complete / high	No	The distance between Adastral Park and the East Anglia THREE substation limits the potential for significant cumulative impacts to arise and it is unlikely for significant cumulative impacts to arise in relation to the onshore cable route despite proximity.
Ipswich Garden Suburb	Identified in adopted Core Strategy	Primarily after 2020	3	Urban development north of Ipswich. Master Plan at consultation phase.	Incomplete/medium	No	Greenfield site. No overlap with landfall, onshore cable route or substation(s) location. Due to distance and extent of intervening landform and tree cover there will be practically

Project	Status	Construction / Operation period	<sup>4</sup> Approx. Distance from East Anglia THREE (km)	Project definition	Project data status	Included in CIA	Rationale
							no inter-visibility.
Progress Power, Eye, Suffolk	Consented	Construction 2017-18, Operation by 2019.	28	Gas fired power station development	Complete / high	No	No overlap with landfall, onshore cable route or substation(s) location. Likely to be constructed prior to East Anglia THREE commencement.
Land North Of Woods Lane, Melton, Suffolk	Conditionally Allowed	Unknown	2.7	Outline planning for a residential development for 180 dwellings (8.27ha in size) to include open space and provision of ecological habitat areas.	High	No	No overlap with landfall, onshore cable route or substation(s) location, too distant to impact same receptors.

205. *Table 29.12* shows that the potential for significant cumulative impacts arises in relation to East Anglia ONE<sup>5</sup> and a future EAOW project but none of the other projects. The cumulative scenario of the proposed East Anglia THREE substation being added to a cumulative baseline comprising East Anglia ONE substation constitutes the predicted baseline situation, which has been assessed in detail in section 29.7, and is, therefore, not reconsidered in this section.
206. The proposed East Anglia THREE project would not give rise to significant cumulative impacts in respect of the landfall location or onshore cable route. The onshore construction phases for East Anglia ONE, East Anglia THREE and a future EAOW project would not coincide. The construction phase of East Anglia THREE, in respect of all cumulative scenarios, would take place either when the other projects did not exist or were operational. If they were operational, there would be little visible evidence of the landfall location or the onshore cable route, as the components of both would be largely concealed below ground. The addition of the East Anglia THREE substation to either of these situations would therefore be not significant. As the significant impacts all relate to the construction phase and the construction phases would not coincide, all impacts during the construction phase would be solely attributable to East Anglia THREE, with no cumulative impacts arising.
207. In respect of the East Anglia THREE substation there is greater potential for cumulative impacts to arise in relation to the scale of the building and its longer term presence. The extent of the enclosure of mature tree cover in the rural landscape, combined with the limited number of large scale developments in close proximity, reduces this potential. The remaining cumulative scenario which requires detailed assessment is the cumulative scenario in which the East Anglia THREE substation is seen in conjunction with the East Anglia ONE substation and a future EAOW project substation.
208. The cumulative scenario is assessed at the construction, operation and decommissioning phases of the proposed East Anglia THREE project, considering the impacts on physical elements, landscape character and visual amenity.
209. There is the potential that the addition of the East Anglia THREE substation to the cumulative scenario would give rise to significant cumulative impacts in the vicinity of the substations. *Table 29.13* below provides an initial assessment of the potential for such impacts to arise. Many of the viewpoints are discounted from the detailed cumulative assessment owing to the limited extent to which the East Anglia THREE substation, or the East Anglia ONE substation and a future EAOW project substation are visible, either as a result of distance, the screening effect of intervening woodland or the screening effect of the substations of one another. In these instances, the

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<sup>5</sup> As discussed previously in section 29.3.2 this is based on the dimensions contained in the East Anglia ONE Offshore Wind Farm (Corrections and Amendments) Order 2016

impacts are assessed as not significant. The shaded cells in the table indicate which viewpoints are to be assessed in detail.

Table 29.13. Potential Cumulative Impacts on Visual Amenity

Visual Receptor	Cumulative Scenario
VP 1- Offton Road, near Elmsett Village	East Anglia THREE and a future EAOW project substations would be distant and partially screened by intervening woodland.
VP2 – Flowton Village	East Anglia THREE substation would be partially screened and a future EAOW project substation would be fully screened by intervening woodland.
VP3 –Flowton to Burstallhill Minor Road	A future EAOW substation would be largely screened by intervening woodland.
VP4 – Minor Road to Hintlesham Priory	East Anglia THREE and a future EAOW project substations would be screened by intervening woodland.
VP5 – Orchard Lands, near Canes Farm	A future EAOW project substation would not be visible from this viewpoint owing to screening by East Anglia THREE substation.
VP 6 – PROW 147/006/0, near Hill Farm	A future EAOW project substation would be screened by intervening woodland.
VP7 - Burstall	A future EAOW project substation would be partially set below horizon and screened by intervening woodland.
VP8 – A1071, near Valley Farm	East Anglia THREE and a future EAOW project substation would be distant and screened by intervening woodland.
VP9 – Thornbush Hall	East Anglia THREE and a future EAOW project substations would be screened by intervening woodland.
VP 10 – PRoW 155/047/0, near Fidgeon’s Farm	East Anglia THREE and a future EAOW project substations would be visible from this viewpoint with the potential to give rise to a significant cumulative impact.
VP 11 – PRoW 155/002/0, near Bullenhall Farm	A future EAOW project substation would be partially screened by intervening woodland and located in a portion of the view where pylons are concentrated.
VP12 – PRoW 155/003/0, near Tye House	East Anglia THREE substation would be screened by a future EAOW project substation.
VP13 – Tye Lane	No visibility of East Anglia THREE substation.
VP14 – Valley Road, near Nettlestead	East Anglia THREE and a future EAOW project substations would be distant and partially screened by intervening woodland.
VP15 – Church Hill, near Canes Farm	East Anglia THREE and a future EAOW project substations would be screened by intervening woodland.



Visual Receptor	Cumulative Scenario
VP16 – PRoW 155/003/0, north-east of site	East Anglia THREE substation would be screened by intervening woodland.

210. The initial assessment shows that potential for significant cumulative impacts to arise occurs at Viewpoint 10: PRoW Bramford 155/047/0, near Fidgeon’s Farm. The cumulative assessment for this viewpoint is presented below in relation to the construction, operation and decommissioning phases of the proposed East Anglia THREE project.

### 29.8.2 Cumulative Impacts of Substation Construction

#### 29.8.2.1 Cumulative Impacts of Substation Construction on Physical Elements

211. For the purposes of the cumulative assessments it is assumed that East Anglia ONE and a future EAOW project would be operational. It should be noted that, whilst this is in accordance with GLVIA 3 guidance, the scenario does not represent a realistic one and does not reflect cumulative construction assessment undertaken in other chapters of the East Anglia THREE Environmental Statement.

212. Each of the substations would have similar impacts on the physical elements of the site where they are constructed, relating to the loss of agricultural land and the potential removal of select hedgerow and trees. There would be a cumulative impact on physical elements, as the addition of the East Anglia THREE substation to the East Anglia ONE substation and a future EAOW project substation, would increase the loss of agricultural land and the potential removal of hedgerows and trees.

#### 29.8.2.2 Cumulative Impacts of Substation Construction on Physical Elements

213. The cumulative impact of the East Anglia THREE substation on the physical elements would be **not significant**. The main loss would be of agricultural land, however owing to the low sensitivity of the intensive arable agricultural land and its extent across the wider landscape, the impact of the loss would be **not significant**. This assessment would apply in respect of both the Single Phase and Two Phased approach. In the Two Phased approach, the impacts would remain the same, only spread across two phases and therefore longer in duration.

214. The extent of hedgerow and tree loss is very small in proportion to the wider provision, even taking into account the cumulative loss in relation to the East Anglia ONE converter station and a future EAOW project substation. Furthermore, much more extensive tree and hedgerow planting would occur as part of mitigation planting around the site.

#### 29.8.2.3 Cumulative Impacts of Substation Construction on Landscape Character

215. The East Anglia ONE substation and a future EAOW project substation would be located in the same Ancient Plateau Claylands LCT in which the proposed East Anglia THREE substation would be located. The substations would be located in close proximity and there would be the potential for a cumulative impact to arise on the landscape character of the Ancient Plateau Claylands LCT. The landscape surrounding the substations is not subject to any national or local landscape designations and, as the potential impacts on other LCTs rapidly dissipates with distance, the Ancient Plateau Claylands LCT is the only landscape receptor to be assessed.
216. The addition of the East Anglia THREE substation to the East Anglia ONE substation and a future EAOW project substation would generally give rise to **not significant** impacts. This is as a result of the screening of the construction works by a future EAOW project substation in combination with the existing screening provided by the intervening woodland. Where there is the potential for a significant cumulative impact to arise in the landscape to the north, the location of a future EAOW project substation to the fore of East Anglia THREE substation would greatly reduce the cumulative magnitude of change.
217. To the south-west, while the construction of East Anglia THREE would be seen to the fore of a future EAOW substation, it would also be seen set behind the East Anglia ONE substation. While the components of East Anglia ONE substation would screen the ground level construction works, the use of tall cranes and the emerging structure of the converter hall or substation hall would be apparent at a higher level. The cumulative magnitude of change that the addition which East Anglia THREE substation would make, would be moderated by the scale and extent of the influence of existing energy developments, such that the overall impact to the south-west would be not significant.
218. The exception, where screening would not reduce the magnitude of change, occurs to the east where the construction of the East Anglia THREE substation would be seen to the left of a future EAOW project substation and a **significant** impact would arise out to 800m in this direction. The establishment of mitigation planting to the east would limit the duration of the significant impacts to the first 15 years by which time the planting would have established sufficiently enough to reduce the influence of the substation on the character of the landscape. For the remaining 10 years of the consent period, the impacts would be **not significant**. This assessment would apply in respect of both the Single Phase and Two Phased approach. In the Two Phased approach, the impacts would remain the same, only spread across two phases and therefore longer in duration. The impacts would be very short term and reversible.

#### 29.8.2.4 Cumulative Impacts of Substation Construction on Visual Amenity

219. An initial assessment regarding the potential for cumulative impacts to arise in relation to visual amenity is set out in *Table 29.13*. In respect of the cumulative scenario, only

Viewpoint 10 is considered to have potential to give rise to significant cumulative impacts.

220. It is assumed that the East Anglia ONE substation and a future EAOW project substation would be operational and in Viewpoint 10, visible as two separate large scale structures, both partially screened at the lower level by tree cover. The smaller scale of the East Anglia ONE substation components and their location behind the intervening tree cover means that they would be largely screened in this view. The construction of the East Anglia THREE substation would occur to the left of a future EAOW project substation, such that it would increase the extent of development to a small extent, albeit within the context of the existing pylons and mast. The partial screening from the intervening tree cover would moderate the cumulative magnitude of change such that it would be medium to low and the cumulative impact would be **not significant**. This assessment would apply in respect of both the Single Phase and Two Phased approach. In the Two Phased approach, the impacts would remain the same, only spread across two phases and therefore longer in duration.

### 29.8.3 Cumulative Impacts of Substation Operation

#### 29.8.3.1 Cumulative Impacts of Substation Operation on Landscape Character

221. The addition of the East Anglia THREE substation to the East Anglia ONE substation and a future EAOW project substation would generally give rise to not significant impacts. This is principally as a result of the location of the East Anglia THREE substation between the East Anglia ONE<sup>6</sup> substation and a future EAOW project substation, which, in combination with the intervening woodland, would mean that the East Anglia THREE substation would often be fully or partially screened. The one exception occurs to the east where the East Anglia THREE substation would be seen in conjunction with a future EAOW project substation and a significant cumulative impact would arise out to 800m in this direction.

#### 29.8.4 Cumulative Impacts of Substation Operation on Visual Amenity

222. It is assumed the East Anglia ONE substation and a future EAOW substation would be operational. In Viewpoint 10, East Anglia ONE substation would be almost completely screened by intervening tree cover and a future EAOW substation would be partially screened at the lower level by tree cover. East Anglia THREE substation would occur to the left of a future EAOW substation, such that it would increase the extent of development to a small amount, albeit in the context of a future EAOW substation. The distance of 1.1km from the viewpoint, combined with the partial screening from the intervening tree cover would moderate the cumulative magnitude of change such that it would be medium to low and the cumulative impact would be not significant.

### 29.8.5 The Cumulative Impacts of Substation Decommissioning

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<sup>6</sup> As discussed previously in section 29.3.2 this is based on the dimensions contained in the East Anglia ONE Offshore Wind Farm (Corrections and Amendments) Order 2016

### 29.8.5.1 Cumulative Impacts of Substation Decommissioning on Landscape Character

223. The screening effect of the existing woodland, plus the mitigation planting which would have grown to approximately 12m over the 25-year consent period, would largely screen the ground level decommissioning works from the surrounding landscape in all directions. While higher level decommissioning works would be visible above the tree tops, the extent and duration of this visibility would lead to a **not significant** impact on landscape character.

### 29.8.5.2 Cumulative Impacts of Substation Decommissioning on Visual Amenity

224. At the end of the likely 25-year period of consent, when decommissioning would take place, the mitigation planting proposed for the eastern side of the East Anglia THREE substation, in combination with the existing tree cover would screen the majority of the decommissioning works, with the exception of the higher level operations involving cranes and the deconstruction of the building. Taking these factors into account, the cumulative magnitude of change would be medium to low and the cumulative impact would be **not significant**.

### 29.8.6 Summary of Cumulative Impacts

Table 29.14. Summary of Cumulative Impacts of Substation

Project stage / Receptor type	Landscape / Visual receptors	Sensitivity	Cumulative magnitude of change	Cumulative Impact
<b>Cumulative Impacts of Substation Construction</b>				
Physical elements	Agricultural land	low	low	<b>Not significant</b>
	Trees and hedgerows	medium to high	low	<b>Not significant</b>
Landscape character	Ancient Plateau Claylands	medium	medium 800m to east medium to low in all remaining areas	<b>Significant</b> 800m to east <b>Not significant</b> in all remaining areas
	VP 10 – PROW 155/047/0, near Fidgeon’s Farm	medium to low	medium	<b>Not significant</b>
<b>Cumulative Impacts of Substation Operation</b>				
Landscape character	Ancient Plateau Claylands:	medium	medium 800m to east year 0-15 low 800m to east, year 15-25 low in all remaining areas	<b>Significant</b> 800m to east year 0-15 <b>Not significant</b> 800m to east, year 15-25 <b>Not significant</b> in all remaining areas

	VP 10 – PROW 155/047/0, near Fidgeon’s Farm	medium	medium to low	<b>Not significant</b>
<b>Cumulative Impacts of Substation Decommissioning</b>				
Landscape character	Ancient Plateau Claylands	medium	low	<b>Not significant</b>
Visual amenity	VP 10 – PROW 155/047/0, near Fidgeon’s Farm	medium	low	<b>Not significant</b>

225. The assessment shows the limited occurrence of significant cumulative impacts in relation to the proposed East Anglia THREE project, which includes localised impacts on landscape character during the construction and operation stages in relation to the cumulative scenario with a future EAOW project. This relates to a combination of three factors; the screening effect of existing woodland cover around the substations, the screening effect of the substations to each other; and the additional screening effect of the proposed mitigation planting over the 25 year period.
226. The location and maturity of the existing woodland cover and tree belts around the substations, means that in certain directions one or more of the substations would be partially or fully screened. In these instances, the cumulative magnitude of change would be reduced as the substations would not be seen to their full extent and often a scale comparison with the overhead pylons, mast or closer range trees would arise which would act to reduce the perceived scale of the substations.
227. The close proximity of the substations to one another would mean that from certain directions the substations would screen one another. In these instances, the cumulative magnitude of change would be reduced as the extent to which the substation(s) would be visible becomes limited.

### 29.9 Inter-relationships

228. Inter-relationships exist between the Landscape, Seascape and Visual Amenity and that for Onshore Archaeology and Cultural Heritage. Information from this chapter has been used to help establish any potential landscape character and visual amenity receptors and inform the impact assessment presented here. The Onshore Archaeology and Cultural Heritage chapter makes reference to this chapter. This chapter, however, does not rely on the findings of any other chapters in the ES.

Table 29.15 Chapter Topic Inter-Relationships

Topic and description	Related Chapter	Where addressed in this Chapter
Landscape and Visual Impact Assessment	Onshore Archaeology and Cultural Heritage	29.6.3

## 29.10 Summary

### 29.10.1 Landfall Location and Onshore Cable Route Impacts

229. For the purposes of the assessment, it is assumed that East Anglia ONE has already been constructed and is operational. The key implication of this is that many of the components required for the landfall location and onshore cable route, which are designed to be shared with the proposed East Anglia THREE project, would already be constructed. This greatly reduces the potential impacts associated with the East Anglia THREE landfall location and onshore cable route.
230. As part of East Anglia ONE, a combination of HDD and open-cut trenching construction techniques would be used to install ducts for the onshore cables along the 37km length of the route. Jointing bays, in the 62 locations where the sections of cable route would be joined, would need to be constructed as part of the proposed East Anglia THREE project. The installation of the East Anglia THREE onshore cable route would require the pull through of the cables at each of the jointing bays. This would avoid any further open-cut trenching or HDD construction, although Construction Consolidation Sites for the pull through process and Haul Roads for access would be required.
231. The most notable impacts relating to the landfall location and onshore cable route would occur during the construction phase. These impacts would be moderated by a combination of the following factors. Firstly, the extent of the construction works would be relatively small in scale owing to the existing presence of the ducts, and which would mean activity would be largely concentrated at the intermittent jointing bays. This would greatly reduce the disturbance to the physical elements, landscape character and visual amenity. Secondly, without HDD drilling, the scale of the machinery would be more compact and therefore have a lesser impact on receptors. Thirdly, the impacts would be reversible, with embedded mitigation including the restoration of vegetation where loss or disturbance would occur once construction is complete. Fourthly, the duration of the impacts would be very short term and reversible.
232. The assessment has reported that during the construction phase there would be no significant impacts on any of the landscape or visual receptors, with the exception of the localised and very short term impact on the cliffs at Bawdsey, where potentially access onto the beach would be required.

233. Once at the operational phase, there would be very little evidence of the landfall location or onshore cable route as the majority of the components for each would be buried underground, apart from intermittent kiosks, located discreetly at the jointing bays and coloured green to blend in with the landscape. The impacts of the landfall location and onshore cable route on all landscape and visual receptors during the operational phase would be not significant.
234. As it is likely that the components of the landfall location and onshore cable route would be left in-situ following decommissioning, the impacts of this phase would also be not significant.
235. There would be no cumulative impacts in relation to the landfall location and onshore cable route.

### **29.10.2 Substation Impacts**

236. For the purpose of the assessment, it is assumed that the East Anglia ONE<sup>7</sup> substation is constructed and operational, occupying the land to the immediate west of the East Anglia THREE substation location. The East Anglia THREE substation would occupy a relatively flat plateau landscape, which benefits from the screening effect of mature blocks of woodland to the west, north-west and north-east. The presence of the adjacent Bramford Sub-station and surrounding woodland partially screens the East Anglia THREE substation from the south and, in association with the pylons, establishes energy infrastructure as part of the baseline character.
237. Embedded mitigation, proposed as part of East Anglia ONE, would already be in place to the south-west, immediate north and east. Further planting as part of the East Anglia THREE embedded mitigation would take place to the north. This area would complement the existing mature planting which provides screening to the north-west, west and north-east. It is predicted that the planting would take 15 years to reach 7m, albeit seen at a relative height of 12m owing to the elevation of the earth bunding. It would not be sufficiently tall to screen the initial construction phase, but then would increasingly screen the substation during the operational phase.
238. During the construction phase, significant impacts would occur on the landscape character of the Ancient Plateau Claylands LCT within a localised area, approximately 800m to the east and 800m to the north. This finding relates to the screening effect of existing mature woodland, combined with the more limited influence of East Anglia ONE substation and Bramford Sub-station which occurs in these directions. The presence of the East Anglia ONE substation and Bramford Sub-station prevents significant impacts extending to the south-west. Significant impacts would also arise in respect of Viewpoint 11, which lies to the east, and Viewpoint 12, which lies to the

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<sup>7</sup> As discussed previously in section 29.3.2 this is based on the proposed variation to the dimensions of the East Anglia ONE substation

north, which are representative of the wider PRowS and the views of walkers, as well as residents in respect of Viewpoint 12.

239. The impacts on all remaining parts of the LCT and on all other landscape and visual receptors during the construction phase would be not significant.
240. During the operational phase, the significant impacts reported above would gradually diminish as the mitigation planting would mature and the substation would become largely enclosed by a combination of existing and mitigation planting. By year 15 of the likely 25-year project duration, the screening by the mitigation planting would be sufficient to reduce the impacts on the LCT and Viewpoints 11 and 12 to not significant.
241. While the decommissioning phase would involve potential impacts similar to what would occur during the construction phase, the maturity of the mitigation planting at the 25-year point, in combination with the existing woodland, would largely screen the majority of the decommissioning works, thus ensuring that no significant impacts would arise.
242. There would be very limited cumulative impacts in relation to the cumulative scenario in which the East Anglia THREE substation would be added to the East Anglia ONE substation and a future EAOW project substation. This finding relates principally to the extent to which the East Anglia THREE substation is screened by the other future EAOW project substation as well as existing woodland. A cumulative impact would occur across the Ancient Plateau Claylands out to an extent of 800m to the east, where East Anglia THREE substation would be seen in conjunction with a future EAOW project substation. This impact would last for only the first 15 years, by which time mitigation planting would have matured sufficiently to reduce the impact to not significant.

### 29.11 Conclusions

243. The majority of the landscape and visual receptors assessed in the LVIA would undergo impacts which would be not significant. Where significant impacts would arise, they would typically be short term, localised and reversible. Potential long term impacts relating to the substation, would be reduced to medium to long term by the effects of mitigation planting. These impacts would also be localised and reversible.
244. As a lot of the necessary construction works for the landfall location and onshore cable route would have already taken place as part of East Anglia ONE, there would be very few significant impacts as a result. Also the presence of East Anglia ONE substation and Bramford Sub-station establish a baseline in which this type of development has a notable influence on existing landscape and visual receptors.



245. Embedded mitigation would reduce significant impacts in many aspects of the proposed East Anglia THREE project. Careful site selection for the landfall location and substation, and sensitive routing of the onshore cable route at the design stage has ensured that especially sensitive landscapes and landscape features have largely been avoided. It has also ensured that existing landscape features, such as the existing woodland around the substations, have been used to best effect, as well as providing for additional planting which would supplement the existing woodland and collectively screen almost every aspect of the substation location.
246. The contained extent of the construction and decommissioning works, and operational components of the proposed East Anglia THREE project, have ensured that all significant impacts occur within the close range of the proposed East Anglia THREE project, thus avoiding the spread of significant impacts beyond this close range.
247. The limited extent to which the landfall location and onshore cable route are visible, relates to the relatively flat or gently undulating landscape in which they are located. This means that the proposed East Anglia THREE project is not exposed across wider extents, as it would be if it were seen routed across hillsides, and also that there are few prominent vantage points from which expansive views, revealing a substantial section of the route, would be obtained. The limited extent of visibility is further reduced by the frequency of hedgerows and trees, which form enclosure and often contain views to within the close range. These features of the landscape ensure that the influence is largely local, and rapidly dissipates with distance from the proposed East Anglia THREE project.
248. The extent of impacts is notably reduced because the majority of the proposed East Anglia THREE project occurs in land which has been modified by intensive agricultural practices. Where CCSs and jointing bays would be constructed, the disturbance caused would not be as notable as it would, were they located in natural or semi-natural vegetation which was previously undisturbed.
249. The surrounding landscape to the substation is not subject to any national or local landscape designations which would otherwise denote a special sensitivity to the proposed East Anglia THREE project. The landscape is characterised by rural agricultural land uses, and while much of the woodland and hedgerow enclosures remain intact, many areas have been removed to consolidate fields and create a more open, and less intimate, landscape. Furthermore, the existing presence of the Bramford Substation and predicted presence of the East Anglia ONE substation, establishes energy infrastructure as a component of the baseline situation such that additional development would not have the same impact as if it were in a previously undeveloped area.
250. Despite the extended construction period that would occur under the Two Phased approach, compared to the Single Phase approach, the impacts would remain the

same. Construction works assessed under the Single Phase approach as significant or not significant would have the same impact when carried out for the first and second time in the Two Phased approach.

251. While significant impacts would arise in relation to the construction of the landfall location, onshore cable route and substation, and the operation of the substation, these impacts would all be either short or medium to long term, localised and reversible.
252. Note that for the purposes of this assessment, the dimensions of the East Anglia ONE substation are not taken from the East Anglia ONE Development Consent Order (DCO), but taken from the East Anglia ONE Offshore Wind Farm (Corrections and Amendments) Order 2016. The size of the East Anglia ONE substation is smaller in the current application and the components are generally located outwith an enclosed building. The dimensions and layout of the revised design of the East Anglia ONE substation have been used as the basis of the assessment and are shown as a model in the computer visualisations.

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Chapter 29 Ends Here

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East Anglia THREE  
Offshore Windfarm

East Anglia THREE

# Appendix 29.1

## Seascape, Landscape and Visual Assessment Methodology

Other Environmental Information

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## 29.1 SEASCAPE, LANDSCAPE AND VISUAL ASSESSMENT METHODOLOGY

### 29.1.1 Introduction

1. This methodology has been prepared by chartered landscape architects at Optimised Environments Ltd (OPEN) and describes in detail the methodology that has been used to carry out the Landscape and Visual Impact Assessment (LVIA). The LVIA identifies and assesses the significance of changes resulting from the proposed project on both the landscape as an environmental resource and on people's views and visual amenity. The LVIA methodology is structured as follows:
  - Types of impact;
  - Significance of impacts;
  - Assessment of landscape impacts;
  - Assessment of visual impacts;
  - Assessment of cumulative landscape and visual impacts;
  - Nature of impacts; and
  - Duration and reversibility.
2. The following sources have been used in the formulation of methodology for the assessment and the presentation of visual representations:
  - Guidelines for Landscape and Visual Impact Assessment: Third Edition (Landscape Institute and IEMA, 2013);
  - Assessing the Cumulative Impact of Onshore Wind Energy Developments (SNH, 2012);
  - Visual Representation of Wind Farms, Version 2 (Scottish Natural Heritage 2014);
  - Landscape Institute Advice Note 01/11 Photography and Photomontage in Landscape and Visual Impact Assessment (Landscape Institute, 2011) ;
  - Landscape Character Assessment Guidance for England and Scotland (SNH and TCA 2002);
  - Siting and Designing Wind Farms in the Landscape, Version 2 (SNH 2014);
3. OPEN's LVIA methodology accords with the guidance set out in the GLVIA3. Where it diverges from specific aspects of the guidance, in a small number of areas, reasoned professional justification for this is as follows.

4. GLVIA3 sets out an approach to the assessment of magnitude of change in which three separate considerations are combined within the magnitude of change rating. These are the size or scale of the effect, its geographical extent and its duration and reversibility. This approach is to be applied in respect of both landscape and visual receptors with reference made in paragraphs 5.48, 5.50-5.52, 6.38 and 6.40-6.41.
5. OPEN considers that the process of combining all three considerations in one rating can distort the aim of identifying significant impacts in respect of large scale developments. For example, an increased magnitude of change, based on size or scale, may be reduced to a lower rating if it occurs in a localised area and for a short duration. This might mean that a potentially significant effect will be overlooked if impacts are diluted down due to their limited geographical extent, limited duration or reversibility. Conversely, a magnitude of change rating may be increased to a higher level if covering a wide geographical extent or for a longer duration and may lead to a significant impact despite the size or scale of the impact being relatively small.
6. OPEN has chosen to keep these three considerations separate, by basing the magnitude of change on size or scale to determine where significant and not significant impacts occur, and then describing the geographical extent of these impacts and their duration and reversibility separately.
7. The LVIA study area is defined as a 4km radius area from the outer edge of East Anglia THREE Substation Compound, a 1km radius around the Landfall and a 500m strip either side of the onshore cable route and associated access routes and construction compounds (Figure 29.1). This includes all those areas within which potentially significant landscape and visual impacts of the proposed project may occur. These extents were applied in the East Anglia THREE Environmental Statement, as well as the East Anglia ONE Environmental Statement.

### 29.1.2 Types of Impact

8. The LVIA is intended to determine the impacts that the proposed project will have on the landscape and visual resource.
9. For the purpose of assessment, the potential impacts on the landscape and visual resource are grouped into three categories: landscape impacts, visual impacts and cumulative landscape and visual impacts, each of which is briefly described below.
10. Landscape impacts: the LVIA considers the impacts of the proposed project on the landscape as a resource. Landscape impacts occur as either impacts on the landscape elements of the site, or impacts on the landscape character of the site and surroundings. The assessment of landscape impacts is carried out as follows:

- Assessment of impacts on landscape elements, which are the direct impacts on the landscape elements of the site as a result of the proposed project, such as the removal of trees or alteration to ground cover.
  - Assessment of impacts on landscape character, which arise either through the introduction of new elements that alter the landscape character in the immediate locale, or through visibility of the proposed project, which may alter the landscape character as perceived from surrounding parts. Landscape Character is defined as the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and relates to the way in which this pattern is perceived. Landscape character receptors fall into two groups; landscape character areas and landscape designations.
11. Visual impacts: the LVIA considers the impact of the proposed project on views and visual amenity. Visual impacts include impacts on visual receptors, i.e. groups of people that may experience an impact, and views (viewpoints). The visual assessment is carried out as follows:
- An assessment of the impacts of the proposed project on views from principal visual receptors, including residents of settlements; motorists using roads; people using recreational routes, features and attractions throughout the study area; and
  - An assessment of the impacts of the proposed project on representative viewpoints that have been selected to assess the impact on locations relevant to these visual receptors and from specific viewpoints, chosen because they are key or promoted viewpoints in the landscape.
12. Cumulative landscape and visual impacts: cumulative impacts arise where the study areas for two or more developments overlap so that both are experienced at proximity where they may have a greater incremental impact, or where developments may combine to have a sequential impact. In accordance with guidance (SNH 2012), the LVIA assesses the impact arising from the addition of the proposed project to the cumulative situation.

### 29.1.3 Significance of Impacts

13. The objective in assessing the impacts of the proposed project is to predict the significant impacts of the proposed project on the landscape and visual resource. In accordance with the Environmental Impact Assessment Regulations the LVIA impacts are assessed to be either significant or not significant. The LVIA does not define levels of significance as the Regulations do not provide for these.
14. The significance of impacts is assessed through a combination of two considerations - the sensitivity of the landscape receptor or visual receptor, and the magnitude of change that will result from the proposed project.

15. OPEN’s methodology requires the application of professional judgement in accordance with the Landscape Institute’s GLVIA3. Although it is not reliant on the use of a matrix, the following matrix has been included to illustrate how combinations of the ratings for sensitivity and magnitude of change can give rise to significant and not significant impacts, as well as to give an understanding of the threshold at which significant impacts may arise. Table 29.1/1 below provides this illustration.

Table 29.1/1 Impact Significance Matrix

Sensitivity	Magnitude					
	High	Medium-High	Medium	Medium-Low	Low	Negligible
High	Significant	Significant	Significant	Significant or not significant	Not significant	Not significant
Medium-High	Significant	Significant	Significant or not significant	Significant or not significant	Not significant	Not significant
Medium	Significant	Significant or not significant	Significant or not significant	Not significant	Not significant	Not significant
Medium-Low	Significant or not significant	Significant or not significant	Not significant	Not significant	Not significant	Not significant
Low	Significant or not significant	Not significant	Not significant	Not significant	Not significant	Not significant

16. Impacts that are assessed within the red boxes in the matrix are assessed to be significant in terms of the requirements of the EIA Regulations. Those impacts that are assessed within the orange boxes may be significant, or not significant, depending on the specific factors and impact that is assessed in respect of a particular landscape or visual receptor. Those impacts that are assessed within the green boxes are assessed to be not significant. In accordance with the GLVIA3, experienced professional judgement is applied to the assessment of all impacts and reasoned justification is presented in respect of the findings.
17. A significant impact occurs where the proposed project would provide a defining influence on a landscape element, landscape character receptor or visual receptor. A not significant impact occurs where the impact of the proposed project is not material and the baseline characteristics of the landscape element, landscape character receptor or visual receptor continue to provide the definitive influence. In this instance the proposed project may have an influence but this influence would not be definitive. Significant cumulative landscape and visual impacts arise where the addition of the proposed project to the baseline under consideration leads to this type of development becoming a prevailing landscape and visual characteristic.

#### 29.1.4 Assessment of Landscape Impacts

18. Impacts on landscape character arise either through the introduction of new elements that physically alter this pattern of elements, or through visibility of the proposed project, which may alter the way in which the pattern of elements is perceived. This

category of impacts is made up of physical impacts and landscape impacts. The latter fall into two groups; landscape character areas and designated areas.

#### **29.1.4.1 Assessment of Impacts on Landscape Elements**

19. The physical impacts of the proposed project are restricted to the area of the site where existing landscape elements may be changed. Physical impacts are the direct impacts as a result of the proposed project on the fabric of the site, such as the removal of trees and alteration to ground cover. The objective of the assessment of physical impacts is to determine what the likely physical impacts of the proposed project will be, which landscape elements will be affected, and whether these impacts will be significant or not significant. The variables considered in the sensitivity of landscape elements and the magnitude of change that the proposed project will have on them are described below.

#### **29.1.4.2 Sensitivity of Landscape Elements**

20. The sensitivity of a landscape element is an expression of its ability to accommodate the proposed project. This is dependent on the value of the landscape element and its susceptibility to the change that will arise from the addition of the proposed project.
  - The value of a landscape element is a reflection of its importance in the pattern of elements which constitute the landscape character of the area. For example, the value of woodland is likely to be increased if it provides an important component of the local landscape character. If a landscape element is particularly rare – as a remnant of an historic landscape layout for example – its value is likely to be increased;
21. The susceptibility of a landscape element is a reflection of the degree to which the element can be restored, replaced or substituted. For example, it may be possible to replant peripheral hedgerows following the excavation required for the building of the East Anglia THREE substation, and this would reduce the susceptibility of this element. The evaluation of sensitivity is described for each receptor in the assessment. The following levels of sensitivity are applied; high, medium-high, medium, medium-low and low. The sensitivity of each receptor is a product of the specific combination of value and susceptibility, including the potential for mitigation, as evaluated by professional judgement.

#### **29.1.4.3 Magnitude of Change on Landscape Elements**

22. The magnitude of change on landscape elements is quantifiable, and is expressed in terms of the degree to which a landscape element will be removed or altered by the proposed project. Definitions of magnitude of change are applied in order that the process of assessment is made clear. These are:

- High, where the proposed project will result in the complete removal or alteration of a key landscape element;
  - Medium, where the proposed project will result in the removal of a notable part of a landscape element or a notable alteration to a key landscape element; and
  - Low, where the proposed project will result in the removal of a minor part of a landscape element or a minor alteration to a key landscape element; and
  - Negligible, where the proposed project will result in the removal of a negligible amount of a landscape element or is barely discernible.
  - None, where the proposed project will result in no change to the landscape element.
23. There may also be intermediate levels of magnitude of change where the change falls between two of the definitions; medium-high and medium-low.

#### **29.1.4.4 The Significance of Impacts on Landscape Elements**

24. The significance of the impact on landscape elements is dependent on all of the factors considered in the sensitivity of the receptor and the magnitude of change upon it. This requires professional judgement to assess whether or not the proposed project will have an impact that is significant or not significant.
25. A significant impact will occur where the degree of removal or alteration of the landscape element is such that the characteristic of the element will be redefined. If the landscape element is of a high sensitivity, a significant impact can occur with a moderate degree of removal or alteration. A not significant impact will occur where the form of the landscape element is not redefined as a result of the proposed project. If the landscape element is of lower sensitivity, it may undergo a higher level of removal or alteration yet remain as a not significant impact.

#### **29.1.4.5 Assessment of Impacts on Landscape Character**

26. The objective of the assessment of impacts on landscape character is to determine what the likely impacts of the proposed project will be, which landscape character receptors will be affected, and whether these impacts will be significant or not significant. The methodology for the assessment of impacts on landscape character involves the undertaking of a baseline study, evaluation of sensitivity and magnitude of change, and an assessment of significance.

#### **29.1.4.6 Baseline Study and Scope of the Assessment**

27. The baseline study of each landscape character receptor collates and presents information relevant to the assessment drawn from a combination of desk study and field-work. The baseline study covers the following issues:

- The description of the landscape character receptor drawn from the relevant documentation such as the Landscape Character Assessment or citations in respect of landscape designations;
  - A description of the landscape character receptor based on field work to determine how typical or not the landscape character receptor is in relation to documented descriptions;
  - Those features and patterns of the landform, land-cover and land-use which make the landscape character receptor distinctive;
  - The visual and sensory experience of the landscape and how it associates with other landscapes including, in particular, the landscape character receptor where the proposed project is located; and
  - How change in this landscape character receptor, either through natural or human processes, is presently affecting character and how these changes are predicted to affect character in the future.
28. A filtering process is undertaken as part of the initial assessment to identify which landscape receptors have the potential to undergo significant impacts and significant cumulative impacts. This process is documented and highlights which receptors are to be assessed in detail in the LVIA. Those receptors which are identified as not having the potential to undergo significant impacts and significant cumulative impacts, are not included in the detailed assessment but are noted with reasons given for their exclusion.

#### **29.1.4.7 Sensitivity of Landscape Character**

29. The sensitivity of a landscape character receptor is an expression of its ability to accommodate the proposed project as part of its own character or as part of the visual setting or context of the character receptor. This is dependent on the value of the landscape receptor and its susceptibility to change.

##### **29.1.4.7.1 Value of the Landscape Receptor**

30. The value of a landscape character receptor is a reflection of the value which society attaches to that landscape. The assessment of the landscape value is classified as high, medium-high, medium, medium-low or low and the basis for this assessment is made clear using evidence and professional judgement, based on the following range of factors:
- Landscape designations: A receptor that lies within the boundary of a recognised landscape related planning designation will be of increased value, depending on the proportion of the receptor that is covered and the level of importance of the designation; international, national, regional or local and the reasons for its designation

which may be set out in a citation. It is important to note that the absence of designations does not preclude local resource value, as an undesignated landscape character receptor may be important as a resource in the local or immediate environment, particularly when experienced in comparison with other nearby landscapes.

- **Landscape quality:** The quality of a landscape character receptor is a reflection of its attributes, such as scenic quality, sense of place, rarity and representativeness and the extent to which these attributes have remained intact. A landscape with consistent, intact and well-defined, distinctive attributes is generally considered to be of higher quality and, in turn, higher value, than a landscape where the introduction of inappropriate elements has detracted from its inherent attributes.
- **Landscape experience:** The experience of the landscape character receptor can add to its value and relates to a number of factors including the perceptual responses it evokes, the cultural associations that may exist in literature or history, or the iconic status of the landscape in its own right, the recreational value of the landscape for outdoor pursuits, and the contribution of other values relating to the nature conservation or archaeology of the area.

#### **29.1.4.7.2 Susceptibility to Change**

31. The susceptibility of a landscape character receptor to change is a reflection of its ability to accommodate the changes that will occur as a result of the addition of the proposed project. The assessment of the susceptibility of the landscape receptor to change is classified as high, medium-high, medium, medium-low or low and the basis for this assessment is made clear using evidence and professional judgement, based on the following criteria:

- **The specific nature of the proposed project:** The susceptibility of landscape receptors is assessed in relation to change arising from the proposed project, including its specific components and features, its size, scale, location, context and its specific characteristics.
- **Landscape character:** The key characteristics of the landscape character receptor is considered in the evaluation of susceptibility, as they determine the degree to which the receptor may accommodate the influence of the proposed project. For example, a landscape that is of a particularly wild and remote character may have a high susceptibility to the influence of the proposed project due to the contrast that it would have with the landscape, whereas a developed, industrial landscape, where built elements and structures are already part of the landscape character, may have a lower susceptibility. However, there are instances when the quality of a landscape may have been degraded to an extent whereby it is considered to be in a fragile state, and



therefore a degraded landscape may have a higher susceptibility to the proposed project.

- Landscape association: The extent to which the proposed project will influence the character of landscape receptors across the study area, relates to the associations that exist between the landscape receptor where the proposed project is located and the landscape receptor from which the proposed project is being experienced. In some situations, this association will be strong where the landscapes are directly related, for example the influence on a valley landscape by an enclosing upland landscape where the proposed project is set along the skyline, and in other situations weak where the landscapes are not directly related, for example the influence on a coastal landscape which is strongly associated with the seaward aspect and not the landward aspect where the proposed project is situated.

#### **29.1.4.8 Sensitivity Rating**

32. An overall sensitivity rating for each landscape character receptor is made by combining the assessment of the value and its susceptibility to change. The following levels of sensitivity are applied; high, medium-high, medium, medium-low and low. The basis for the assessment of sensitivity for each receptor is made clear using evidence and professional judgement.

#### **29.1.4.9 Magnitude of Change on Landscape Character Receptors**

33. The magnitude of change on landscape character is an expression of the size or scale of the change that will result from the proposed project. A separate assessment is also made of the geographical extent of the area over which this will occur and the duration and reversibility of such changes. Duration and reversibility are discussed further in Section 29.1.8 of this Appendix. The basis for this assessment is made clear using evidence and professional judgement, based on the following criteria.
- The degree to which the pattern of elements that makes up the landscape character will be altered by the proposed project, by removal or addition of elements in the landscape. The magnitude of change will generally be higher if the features that make up the landscape character are extensively removed or altered, and/or if many new or large scale components are added to the landscape;
  - The extent to which the proposed project would change the key characteristics of the landscape, which may be critical to the distinctive character of the landscape. This may include, the scale of the landform, its relative simplicity or irregularity, the nature of the landscape context, the grain or orientation of the landscape, the degree to which the receptor is influenced by external features, the juxtaposition of the proposed project with these key characteristics.

- The distance between the landscape character receptor and the proposed project. Generally, the greater the distance, the lower the scale of change as the proposed project will constitute a less apparent influence on the landscape character; and
- The extent of the proposed project that will be seen from the landscape receptor. Generally, the greater the extent of the proposed project that can be seen, the higher the scale of change.

#### **29.1.4.10 Geographical Extent**

34. The geographical extent over which the landscape impacts will be experienced is also assessed, which is distinct from the size or scale of impact. This evaluation is not combined in the assessment of the level of magnitude but instead expresses the extent of the receptors which will experience a particular magnitude of change and can therefore affect the geographical extent of the significant and not significant impacts.
35. The extent of the impacts will vary depending on the specific nature of the proposed project and is principally assessed through analysis of the extent of physical change to the landscape or the extent to which the landscape character would change through visibility of the proposed project.
36. The geographical area over which the impacts of the proposed project would be experienced is also evaluated. The extent of the impact would vary depending on the specific nature of the proposed project and is principally a reflection of the extent of the landscape receptor that will be affected by visibility of the proposed project.

#### **29.1.4.11 Duration and Reversibility**

37. The duration and reversibility of landscape impacts are based on the period over which the proposed project is likely to exist and the extent to which it will be removed and its impacts reversed at the end of that period. Duration and reversibility are not incorporated into the overall magnitude of change, but are stated separately in relation to the assessed impacts.
38. In terms of the proposed East Anglia THREE project, very short-term relates to a period of 0 to 1 year and applies mostly to the initial construction and decommissioning works. Short-term relates to a period of 1 to 5 years covering the entire construction and decommissioning phases and the period for reinstatement. Medium term relates to a period of 5 to 10 years and relates mostly to the time required for the majority of the vegetation to re-establish and grow to a reasonable size. Long term relates to a period of 10 to 25 years and relates to the majority of the operational phase of the proposed East Anglia THREE project.

39. Reversibility is a judgement about the prospects and practicality of a particular impact being reversed. The majority of the impacts relating to the proposed East Anglia THREE project would be reversible.

#### **29.1.4.12 Levels of Magnitude of Change**

40. The basis for the assessment of the magnitude of change for each receptor is made clear using evidence and professional judgement.
41. The levels of magnitude of change that can occur are defined as follows:
- High, the proposed project will result in a major alteration to the baseline characteristics of the landscape, providing the prevailing influence and/or introducing elements that are substantially uncharacteristic in the receiving landscape;
  - Medium, the proposed project will result in a moderate alteration to the baseline characteristics of the landscape, providing a readily apparent influence and/or introducing elements that may be prominent but are not uncharacteristic in the receiving landscape;
  - Low, the proposed project will result in a minor alteration to the baseline characteristics of the landscape, providing a slightly apparent influence and/or introducing elements that are characteristic in the receiving landscape; and
  - Negligible, the proposed project will result in a negligible alteration to the baseline characteristics of the landscape, providing a barely discernible influence and/or introducing elements that are substantially characteristic in the receiving landscape.
42. There may also be intermediate levels of magnitude of change where the change falls between two of the definitions; medium-high and medium-low.

#### **29.1.4.13 The Significance of Impacts on Landscape Character**

43. The significance of the impact on each landscape character receptor is dependent on all of the factors considered in the sensitivity of the receptor and the magnitude of change resulting from the proposed project. These judgements on sensitivity and magnitude are combined to arrive at an overall assessment as to whether the proposed project will have an impact that is significant or not significant on the landscape character receptor. The matrix shown in Table 1 helps to inform the threshold of significance when combining sensitivity and magnitude to assess significance.
44. A significant impact will occur where the combination of the variables results in the proposed project having a defining impact on the receptor. A not significant impact will occur where the impact of the proposed project is not definitive, and the landscape character of the receptor continues to be characterised principally by its baseline

characteristics. In this instance the proposed project may have an influence on the receptor and may alter the landscape character, but this influence will not be a defining one.

### 29.1.5 Assessment of Visual Impacts

45. The assessment of visual impacts is an assessment of how the introduction of the proposed project will affect the views available to people and their visual amenity. The assessment of visual impacts is carried out in two parts:
- An assessment of the impacts that the proposed project will have on a series of viewpoints that have been selected to represent the views available to people from representative or specific locations within the study area; and
  - An assessment of the impacts that the proposed project will have from principal visual receptors, including residents of settlements, motorists using roads and people using recreational routes, features and attractions throughout the study area.
46. The objective of the assessment of impacts on visual receptors is to determine what the likely impacts of the proposed project will be on the people experiencing views across the study area, and whether these impacts will be significant or not significant. The methodology for the assessment of visual impacts involves the undertaking of a baseline study, evaluation

#### 29.1.5.1 Baseline Study

47. The baseline study establishes the visual baseline, including the different groups of visual receptors (people) within the study area. The descriptions of the baseline views gained at specific representative viewpoints are included alongside the assessments of these viewpoints. The scope of assessment, includes a description of the area from which the proposed project may be visible and how viewpoints would be affected by this visibility. The baseline study establishes the visual baseline in relation to the following issues:
48. The location, type and number of visual receptors experiencing visibility of the proposed project, the likely views experienced and the activity / occupation they are engaged in;
- The location, character and type of each viewpoint with an indication of the type of visual receptor likely to be experiencing the view from each viewpoint;
  - The nature of the view in terms of both the direction of view towards the proposed project as well as the wider available view, making reference to the principal orientation, focal features, and visible extent in terms of both horizontal degrees and distance;

- The character of the view in terms of its content and composition, its horizontal and vertical scale as well as depth and sense of perspective, important attributes such as prominent skylines and focal points and ultimately identifying the defining patterns and features which characterise the view; and
  - The influence of human intervention and how the addition of artefacts and modification through land use affect the baseline situation. This may include other operational projects where they are a feature of the baseline landscape and visual context.
49. A filtering process is undertaken as part of the initial assessment to identify which visual receptors have the potential to undergo significant impacts and significant cumulative impacts. This is documented in Appendix 29.2 and highlights which receptors are to be assessed in detail in the LVIA. Those receptors which are identified as not having the potential to undergo significant impacts and significant cumulative impacts, are not included in the detailed assessment, but are noted with reasons given for their exclusion.

#### **29.1.5.2 Sensitivity of Visual Receptors**

50. The sensitivity of visual receptors is determined by a combination of the value of the view and the susceptibility of the visual receptors to the change that the proposed project will have on the view.

##### **29.1.5.2.1 Value of the View**

51. The value of a view is a reflection of the recognition and the importance attached formally through identification as a viewpoint on mapping, by signposting or through planning designation; or informally through the value which society attaches to the view. The value of a view is classified as high, medium-high, medium, medium-low or low and the basis for this assessment is made clear using evidence and professional judgement, based on the following criteria:
52. Formal recognition: The value of views can be formally recognised through their identification on maps as formal viewpoints, are sign-posted and provide facilities to facilitate the enjoyment of the view such as parking, seating and interpretation boards. Specific views may be afforded protection in local planning policy, where they are recognised as valued views. Specific views can also be cited as being of importance in relation to landscape or heritage planning designations; for example, the value of a view will be increased if it presents an important vista from a designed landscape or lies within or overlooks a designated area such as an Area of Outstanding Natural Beauty, which implies a greater value to the visible landscape.
53. Informal recognition: Views that are well-known at a local level or have scenic qualities can have an increased value, even if there is no formal recognition or designation. Views or viewpoints are sometimes informally recognised through references in art or

literature and this can also add to their value. A viewpoint that is visited or used by a large number of people will tend to have greater importance than one gained by very few people, although this is not always the case.

54. Scenic quality: The value of the view is a reflection of the scenic qualities gained in the view. This relates to the content and composition of the landscape, whereby certain patterns and features will increase the scenic quality and others will reduce the scenic quality. The value of the view will also be increased if the condition of the landscape is near to the optimum for its type.

#### 29.1.5.2.2 Susceptibility to Change

55. Susceptibility relates to the nature of the viewer and their experience from that particular viewpoint or series of viewpoints, as well as the principal characteristics of the view.
- Nature of the viewer: The nature of the viewer is described by the occupation or activity which they are engaged in at the viewpoint or series of viewpoints. The most common groups of viewers considered in the visual assessment include residents, road-users, workers and walkers. Viewers whose attention is focused on the landscape – walkers, for example are likely to have a higher sensitivity, as will residents of properties which are subject to constant views of the proposed project. Viewers travelling in cars or on trains will tend to have a lower sensitivity as their view is transient and moving. The least sensitive viewers are usually people at their place of work as they are less sensitive to changes in the view; however, this also depends on the nature of their work and the work place which they occupy.
  - Principal characteristics of the view: The principal visual characteristics are those features which define the view. The presence and relationship of certain elements, features or patterns in the baseline view influence the degree to which the landscape in the view may accommodate the influence of the proposed project. For example, a developed, industrial landscape where built elements and structures are already part of the view may have a lower susceptibility to change, whereas a view of an undeveloped landscape which has little or no built development may have a higher susceptibility to change.
  - Experience of the viewer: The experience of the visual receptor relates to the extent to which their focus is directed on the view, the duration and clarity of the view and whether it is a static or transitory view. For example, if the principal outlook from a residential property is aligned directly towards the proposed project, the experience of the visual receptor will be altered more notably than if the experience related to a glimpsed view seen at an oblique angle from a car travelling at high speed.

#### 29.1.5.2.3 Sensitivity to Change

56. An overall level of sensitivity is applied for each visual receptor or view by combining individual assessments of the value of the receptor and its susceptibility to change; high, medium-high, medium, medium-low, low. The basis for the assessments is made clear using evidence and professional judgement in the evaluation of each receptor.

#### 29.1.5.3 Magnitude of Change on Views

57. The magnitude of change that the proposed project will have on visual receptors is assessed in terms of the size or scale of the change as follows. A separate assessment is also made of the geographical extent of the area over which this will occur and the duration and reversibility of such changes. Duration and reversibility are discussed further in Section 29.1.8 of this Appendix. The basis for this assessment is made clear using evidence and professional judgement, based on the following criteria:

##### 29.1.5.3.1 Size or Scale

58. This criterion relates to the size or scale of change to the visual resource that will arise as a result of the proposed project, based on the following factors.
- The scale of the change in the view, with respect to the loss or addition of features in the view and changes in its composition;
  - The distance between the visual receptor and the proposed project. Generally, the greater the distance, the lower the magnitude of change, as the proposed project will constitute a smaller scale component of the view;
  - The proportion of the proposed project that will be seen. Generally, the larger the development appears in the view, and the more of the proposed project that can be seen, the higher the magnitude of change;
  - The field of view available and the proportion of the view that is affected by the proposed project. Generally, the more of a view that is affected, the higher the magnitude of change will be. If the proposed project extends across the whole of the open part of the outlook, the magnitude of change will generally be higher as the full view will be affected. Conversely, if the proposed project covers just a part of an open, expansive and wide view, the magnitude of change is likely to be reduced as the proposed project will not affect the whole open part of the outlook; and
  - The scale and character of the context within which the proposed project will be seen and the degree of contrast or integration of any new features with existing landscape elements, in terms of scale, form, mass, line, height, colour and texture. The scale of the landform and the patterns of the landscape, the existing land use and vegetation cover, and the degree and type of development and settlement seen in the view will be relevant. For example, a large-scale simple landform can provide a more appropriate

receiving environment than a more intimate, small-scale setting where the proposed project may result in uncomfortable scale comparisons that attracts the eye of the viewer and increases the magnitude of change.

- The consistency of the appearance of the proposed project. If the proposed project appears in a similar setting and form and from the same angle each time it is apparent it will be characterised as a single, familiar site and this tends to reduce the magnitude of change. If, on the other hand, it appears from a different angle, and this is seen in a different form and setting, the magnitude of change is likely to be higher as it will be a less familiar component of the landscape.

#### **29.1.5.3.2 Geographical Extent**

59. The geographic extent over which the visual impacts will be experienced is also assessed, which is distinct from the size or scale of effect. This evaluation is not combined in the assessment of the level of magnitude but instead is used in determining the extent which will experience a particular magnitude of change and therefore the extent of the significant and non-significant impacts. The extent of the impacts will vary depending on the specific nature of the proposed project and is principally assessed through analysis of the geographical extent of visibility of the proposed project across the visual receptor.
60. The extent of impacts on views is based on the following factors:
- The extent of a receptor (a road, footpath or settlement, for example) from which the proposed project may be seen; and
  - The extent to which the change would affect views, whether this is unique to a particular viewpoint or if similar visual changes occur over a wider area represented by the viewpoint.

#### **29.1.5.3.3 Duration and reversibility**

61. The duration and reversibility of impacts on views are based on the period over which the proposed project is likely to exist and the extent to which the proposed project will be removed and its impacts reversed at the end of that period. Duration and reversibility are not incorporated into the overall magnitude of change, and may be stated separately in relation to the assessed impacts.

#### **29.1.5.3.4 Levels of Magnitude of Change**

62. The basis of the assessment is made clear using evidence and professional judgement. The levels of magnitude of change that can occur on views are defined as follows:



- High, the proposed project will result in a major alteration to the baseline view, providing the prevailing influence and/or introducing elements that are substantially uncharacteristic in the receiving landscape;
  - Medium, the proposed project will result in a moderate alteration to the baseline view, providing a readily apparent influence and/or introducing elements that may be prominent but are not uncharacteristic in the receiving landscape;
  - Low, the proposed project will result in a minor alteration to the baseline view, providing a slightly apparent influence and/or introducing elements that are characteristic in the receiving landscape; and
  - Negligible, the proposed project will result in a negligible alteration to the baseline view, providing a barely discernible influence and/or introducing elements that are substantially characteristic in the receiving landscape.
63. There may also be intermediate levels of magnitude of change where the change falls between two of the definitions; medium-high and medium-low.

#### **29.1.5.4 The Significance of Impacts on Views**

64. The significance of the impact on each view is dependent on all of the factors considered in the sensitivity of the view and the magnitude of change resulting from the proposed project. These judgements on sensitivity and magnitude are combined to arrive at an overall assessment as to whether the proposed project will have an impact that is significant or not significant on the visual receptor. The matrix shown in Table 29.1.1 helps to inform the threshold of significance when combining sensitivity and magnitude to assess the impacts.
65. A significant impact will occur where the combination of the variables results in the proposed project having a defining impact on the view. A not significant impact will occur where the appearance of the proposed project is not definitive, and the view continues to be defined principally by its baseline characteristics. In this instance the proposed project may affect the appearance of the view, but this impact will not be a defining one.
66. The assessment of visual impacts assumes clear weather and optimum viewing conditions. This means that impacts that are assessed to be significant may be not significant under different, less clear conditions. Viewing conditions and visibility tend to vary considerably and therefore the likelihood of impacts resulting from the proposed project will vary greatly dependent on the prevailing viewing conditions.

## 29.1.6 Assessment of Cumulative Landscape and Visual Impacts

### 29.1.6.1 Introduction

67. Cumulative impacts arise where the study areas for two or more developments overlap so that both of the developments are experienced at a proximity where they may have a greater incremental impact, or where developments may combine to have a sequential impact, irrespective of any overlap in study areas. The cumulative impact assessed is the difference between the impact of a given development in its own right and the combined impact of this development and the proposed project. It is this incremental impact of the addition of the proposed project to the cumulative situation that is assessed in the LVIA, not the overall impact of multiple developments.
68. The objective of the Cumulative Landscape and Visual Impact Assessment (CLVIA) is to describe, visually represent and assess the ways in which the proposed project will have additional impacts when considered together with other existing, consented or proposed projects and to identify related significant cumulative impacts arising as a result of the proposed project. The guiding principle in preparing the CLVIA is to 'focus on the likely significant impacts and in particular those which are likely to influence the outcome of the consenting process', in accordance with SNH guidance.
69. The degree to which cumulative impacts occur, or may occur, as a result of more than one development being constructed are a result of:
- The distance between individual developments;
  - The interrelationship between their Zones of Theoretical Visibility (ZTV);
  - The overall character of the landscape and its sensitivity to developments;
  - The siting and design of the developments themselves; and
  - The way in which the landscape is experienced.

### 29.1.6.2 Types of Cumulative Impact

70. The CLVIA is not required to examine the total impact arising from a number of developments, but to look at the additional impacts, for example, due to the relationship between developments being discordant, and potentially reduced impacts, for example due to the relationship between developments being complementary. Two or more adjacent developments may complement one another, or may be discordant with one another, and it is the increased or reduced level of significance of impacts which arises as a result of this change that is assessed in the cumulative assessment.
71. Cumulative impacts on landscape character arise when two or more developments, through the introduction of new landscape features, change the key characteristics of a

landscape or change it to such an extent that they create a different 'development' landscape type. Developments may also have a cumulative impact on the character of landscapes that are designated for their landscape value. Development proposals in nationally designated landscapes tends to be rare, therefore cumulative impacts on the character of designated landscapes tend to be indirect.

72. Cumulative impacts on visual amenity consist of combined and sequential impacts. Combined visibility occurs where the observer is able to see two or more developments from one viewpoint. Combined visibility may either be 'in combination', where several developments are within the observer's main angle of view at the same time, or 'in succession', where the observer has to turn to see the various developments. Sequential visibility occurs when the observer has to move to another viewpoint to see different developments. Sequential impacts are assessed along regularly used routes such as major roads, railway lines and footpaths. The occurrence of sequential impacts ranges from 'frequently sequential' (the features appear regularly and with short time lapses between, depending on speed of travel and distance between the viewpoints) to 'occasionally sequential' (long time lapses between appearances, because the observer is moving slowly and/or there are large distances between the viewpoints).

### **29.1.6.3 Assessing the Significance of Cumulative Landscape and Visual Impacts**

73. The significance of cumulative impacts is determined through a combination of the sensitivity of the landscape receptor or visual receptor and the cumulative magnitude of change resulting from the proposed project. The sensitivity of landscape receptors and visual receptors is taken from the main assessment carried out in the LVIA, as this does not change. The cumulative magnitude of change is assessed with additional criteria, as described below.

#### **29.1.6.3.1 Cumulative Magnitude of Change**

74. The cumulative magnitude of change is an expression of the degree to which landscape character receptors and visual receptors will be changed by the addition of the proposed project to developments that are already operational, consented or at application stage. The cumulative magnitude of change is assessed based on a number of criteria, set out as follows:
- The location of the proposed project in relation to other developments. If the proposed project is seen in a part of the view that is not affected by another development, this will generally increase the cumulative magnitude of change as it will extend the influence of development into an area that is currently unaffected. Conversely, if the proposed project is seen in the context of other developments, the cumulative magnitude of change may be lower as it is not extending development to undeveloped parts of the outlook. This is particularly true where the scale and layout of the

proposed project is similar to that of the other sites, as where there is a high level of integration and cohesion with an existing site, the various developments may appear as a single site;

- The extent of the developed skyline. If the proposed project will add notably to the developed skyline in a view, the cumulative magnitude of change will tend to be higher, as the appearance of the skyline has a particular influence on both views and landscape receptors;
- The number and scale of developments seen simultaneously or sequentially. Generally, the greater the number of clearly separate developments that are visible, the higher the cumulative magnitude of change will be. The addition of the proposed project to a view where a greater number of smaller developments are apparent will usually have a higher cumulative magnitude of change than a view of one or two large developments, as this can lead to the impression of a less co-ordinated or strategic approach;
- The scale comparison between developments. If the proposed project is of a similar scale to other visible developments, particularly those seen in closest proximity to it, the cumulative magnitude of change will generally be lower, as it will have more integration with the other sites and will be less apparent as an addition to the cumulative situation;
- The consistency of image of the proposed project in relation to other developments. The cumulative magnitude of change of the proposed project is likely to be lower if its turbine height, arrangement and layout design are broadly similar to other developments in the landscape, as they are more likely to appear as relatively simple and consistent components of the landscape;
- The context in which the developments are seen. If developments are seen in a similar landscape context, the cumulative magnitude of change is likely to be lower due to visual integration and cohesion between the sites. If developments are seen in a variety of different landscape settings, this can lead to a perception that development is unplanned and uncoordinated, affecting a wide range of landscape characters.
- The distance of the proposed project from the viewpoint or receptor. As in the assessment of the proposed project itself, the greater the distance, the lower the cumulative magnitude of change will tend to be; and
- The magnitude of change of the proposed project as assessed in the main assessment. The lower this is assessed to be, the lower the cumulative magnitude of change is likely to be. Where the proposed project itself is assessed to have a negligible magnitude of change on a view or receptor there will not be a cumulative

impact as the contribution of the proposed project will equate to the 'no change' situation.

75. Definitions of cumulative magnitude of change are applied in order that the process of assessment is made clear. These are:
- High, the addition of the proposed project to other developments in the landscape or view, will result in a major incremental cumulative change, loss or addition to the cumulative situation;
  - Medium, the addition of the proposed project to other developments in the landscape or view will result in a moderate incremental cumulative change, loss or addition to the cumulative situation;
  - Low, the addition of the proposed project to other developments in the landscape or view will result in a minor incremental cumulative change, loss or addition to the cumulative situation; and
  - Negligible, where the addition of the proposed project to other developments in the landscape or view will result in a negligible incremental change, loss or addition to the cumulative situation;
  - None, where the addition of the proposed project to other developments in the landscape or view will have no incremental change, loss or addition to the cumulative situation and its addition equates to a 'no change' situation.
76. There may also be intermediate levels of cumulative magnitude of change the change falls between two of the definitions; medium-high and medium-low.

#### **29.1.6.4 Significance of Cumulative Impact**

77. The objective of the cumulative assessment is to determine whether any impacts that the proposed project will have on landscape receptors and visual receptors, when seen or perceived in combination with other existing and proposed projects, will be significant or not significant. Significant landscape and visual impacts arise where a landscape characterised by a type of development is created as a result of the addition of the proposed project to other existing or proposed projects. This results in a type of development becoming the prevailing landscape and visual characteristic. The creation of a landscape characterised by a type of development may evolve as follows:
- A small scale, single development will often be perceived as a new or 'one-off' landscape feature or landmark within the landscape. Except at a local site level, it usually cannot change the overall existing landscape character, or become a new characteristic element of a landscape;

- With the addition of further development, it can become a characteristic element of the landscape, as the developments appear as landscape elements or components that are repeated. Providing there was sufficient 'space' or undeveloped landscape/skyline between each development, or the overlapping of several developments was not too dense; the proposed projects would appear as a series of developments within the landscape and would not necessarily become the dominant or defining characteristic of the landscape nor have significant cumulative impacts; and
- The next stage would be to consider larger commercial developments and or an increase in the number of developments within an area that either overlap or coalesce and/or 'join-up' along the skyline. The impact is to create a 'developed landscape' where the development is the prevailing or defining characteristic of the landscape. The result would be to change the existing landscape character of a landscape type, or the landscape in a view and resulting in a significant cumulative impact. A developed landscape may already exist as part of the baseline landscape context.

78. Less extensive, but nevertheless significant cumulative landscape and visual impacts may also arise as a result of the addition of the proposed project, where it results in a landscape or view becoming defined by the presence of more than one development, so that other patterns and components are no longer definitive, or where the proposed project contrasts with the scale or design of an existing or proposed project. Higher levels of significance may arise from cumulative landscape and visual impacts related to the proposed project being in close proximity to other developments when they are clearly visible together in views, however provided that the proposed project is designed to achieve a high level of visual integration, with few notable visual differences between developments, these impacts may not necessarily be significant. In particular, the impacts of the extension to a development are often less likely to be significant, where the impact is concentrated, providing that the design of the developments are compatible and that the overall capacity of the landscape is not exceeded. The capacity of the landscape or view may be assessed as being exceeded where the landscape or visual receptor becomes defined by development, or if the proposed project extends across landscape character types or clear visual/topographic thresholds in a view. Higher levels of significance may result from developments that have some geographical separation, but remain highly inter-visible, potentially resulting in extending impacts into new areas, such as an increased proliferation of development on a skyline, or the creation of multiple, separate development defined landscapes.
79. It is assumed in the assessment that East Anglia ONE is constructed and is operational and that the proposed East Anglia THREE project will be added to this baseline situation. In the cumulative assessment a further scenario is considered in which East Anglia THREE is added to a situation which comprises East Anglia ONE and a future East Anglia project, with the assumption, for the purposes of the

assessment that the future East Anglia project is also to be considered as a relevant project within the cumulative assessment.

### 29.1.7 Nature of Impacts

80. The nature of impacts refers to whether the landscape and/or visual impact of the proposed project is positive or negative (herein referred to as 'beneficial' and 'adverse').
81. Guidance provided by the Landscape Institute on the nature of impact in GLVIA3 states that 'in the LVIA, thought must be given to whether the likely significant landscape and visual impacts are judged to be positive (beneficial) or negative (adverse) in their consequences for landscape or for views and visual amenity', but it does not provide guidance as to how that may be established in practice. The nature of impact is therefore one that requires interpretation and, where applied, this involves reasoned professional opinion.
82. In relation to many forms of development, the LVIA will identify 'beneficial' and 'adverse' impacts by assessing these under the term 'Nature of Impact'. The landscape and visual impacts of developments are difficult to categorise in either of these brackets as, unlike other disciplines, there are no definitive criteria by which the impacts of developments can be measured as being categorically 'beneficial' or 'adverse'. In some disciplines, such as noise or ecology, it is possible to quantify the impact of a development in numeric terms, by objectively identifying or quantifying the proportion of a receptor that is affected by the proposed project, and assessing the nature of that impact in justifiable terms. However, this is not the case in relation to landscape and visual impacts where the approach combines quantitative and qualitative assessment.

The attribution of 'beneficial' and 'adverse' nature of impacts is used inconsistently by landscape professionals when preparing LVIA's for developments and there is not a consensus of opinion that supports its use for development assessments. Generally, a precautionary approach is adopted by OPEN, which assumes that significant landscape and visual impacts will be weighed on the adverse side of the planning balance. Beneficial impacts may, however, arise in certain situations. Judgements on the nature of impact are based on professional experience and reasoned opinion informed by best practice guidance.

83. Adverse, neutral or beneficial, impacts are based on the following definitions:
  - Beneficial impacts contribute to the landscape and visual resource through the enhancement of desirable characteristics or the introduction of new, beneficial attributes. The removal of undesirable existing elements or characteristics can also be beneficial, as can their replacement with more appropriate components;

- Neutral impacts occur where the proposed project neither contributes to nor detracts from the landscape and visual resource and can be accommodated with neither beneficial or adverse impacts or, where the impacts are so limited that the change is hardly noticeable. A change to the landscape and visual resource is not considered to be adverse simply because it constitutes an alteration to the existing situation;
- Adverse impacts are those that detract from or weaken the landscape and visual resource through the introduction of elements that contrast, in a detrimental way, with the existing characteristics of the landscape and visual resource, or through the removal of elements that are key in its characterisation.

84. Unless it is stated otherwise, the impacts considered in this assessment are considered to be adverse in order that a worst case assessment is represented

### **29.1.8 Duration and reversibility**

85. The impacts of the proposed project are of variable duration, and are assessed as very short term, short-term, medium term or long-term, and permanent or temporary/reversible. It is proposed that the operational life of the development will be up to 25 years. During this time, the East Anglia THREE substation will be the most apparent feature, with smaller scale features such as kiosks, marker posts and some sections of jointing bays evident along the onshore cable route. These impacts are considered to be long-term.
86. Other infrastructure and operations such as the construction processes and plant, the construction compound and lay down areas will be apparent only during the initial period of the proposed project, and are considered to be very short-term impacts. The pulling through of cables for the landfall and onshore cable route will also be very short-term. Very short-term covers a period of 0 to 1 years and will mostly apply to construction works at the outset of the proposed project and decommissioning works.
87. In respect of the construction phase of the East Anglia THREE substation, two alternative approaches are currently being considered by EATL; a Single Phase and a Two Phased approach. Under the Single Phase approach, the build out time is estimated to be approximately 55 weeks, this would consist of 43 weeks of construction and mechanical and electrical fitting followed by 12 weeks of testing and commission.
88. If a Two Phased approach to construction is taken the build out time is estimated to span approximately 123 weeks; this would consist of 76 weeks of construction and mechanical and electrical fitting split between two periods over a total of 112 weeks. At the end of each construction phase 12 weeks of testing and commission would follow.



In both approaches the impact would be considered short term. Short-term covers a period of 1 to 5 years and will mostly apply to the construction period and decommissioning period, as well as the re-instatement works that will follow.

89. Medium term effects are used to describe the period that it will take for hedgerows and trees to re-establish and will typically be 5 to 10 years from planting. As planting in the different locations will occur at different times, the measure of medium term will vary between locations.
90. Long term effects are used to describe those effects which will last between 10 and 25 years and relate to the residual effects of the presence and operational processes of visible components of the proposed project.
91. Reversibility is a judgement about the prospects and practicality of a particular impact being reversed. The majority of the impacts relating to the proposed project will be reversible. The major impacts on the landscape and visual resource, which result from the presence of the East Anglia THREE substation, are temporary and reversible, as the building will be removed on decommissioning. The impacts that will occur during the construction period and decommissioning of the site, from the use of tall cranes and heavy machinery, stockpiling of topsoil and presence of construction compounds / laydown areas are also temporary and reversible.
92. Permanent impacts include physical removal of landscape elements required for the development of the site, and any residual impacts that remain following decommissioning. Underground cabling will remain, but will have no permanent landscape and visual impacts. The access tracks may be retained at the request of the landowner or otherwise they will be re-graded and local vegetation reinstated from the seed bank material.
93. In order to avoid repetition, the duration and reversibility of impacts are not reiterated throughout the assessment.

### **29.1.9 Graphic Production**

94. The written LVIA is accompanied by a set of graphics contained in Volume 2. Reference is made throughout the written text to these graphics, as they are an integral part of the overall assessment and of importance in illustrating specific issues. They should be viewed in accompaniment to the written text.
95. The graphics can be divided into two categories; maps and visualisations. The maps are based on the study area around the landfall location, onshore cable route, and substation, and present data of relevance to the assessment, such as the location and extent of landscape character types, landscape designations and principal visual receptors. A Zone of Theoretical Visibility ('ZTV') map is also included in relation to the East Anglia THREE substation. This digitally calculates the extent and level of

theoretical visibility across a given area, using OS Terrain 5 mapping with 10 m grid spacing as the basis for the calculations. As this is based only on the 'bare earth', it does not take account of potential screening by vegetation or buildings, and is why it is referred to as 'theoretical visibility' and not 'actual visibility'.

96. The visualisations are based on the 16 viewpoint locations which are representative of the visual amenity of visual receptors in the surrounding area to the proposed East Anglia THREE substation. These viewpoints have been agreed with the statutory consultees. For each viewpoint there is a location plan and baseline photography. Beyond this, visualisations show the following scenarios;
- First phase of the Two Phased approach to the East Anglia THREE substation construction;
  - Second phase of the Two Phased approach / Single Phased approach;
  - Completed East Anglia THREE substation with mitigation planting and bunding after 15 years;
  - Completed East Anglia THREE substation with a future East Anglia project; and
  - Completed East Anglia THREE substation with a future East Anglia project with mitigation planting and bunding after 15 years.
97. The East Anglia THREE substation is shown to be added to a predicted baseline in which the East Anglia ONE substation is already present - the consent of East Anglia ONE affords certainty with regard to the presence of the substation as part of predicted baseline. The first phase of the Two Phased approach shows only the western half of the substation developed. The second phase of the Two Phased approach shows the eastern half of the substation developed in addition to the western half. This equates to the Single Phased approach in which the whole substation would be developed in one phase.
98. Further visualisations are included which show the effect of mitigation planting and bunding 15 years after completion of the East Anglia THREE substation. This helps to visualise to what extent the substation will be screened from the different viewpoints. The cumulative visualisations show the effect of adding the East Anglia THREE substation to a cumulative scenario in which a future East Anglia project already exists. This scenario is also illustrated with mitigation planting and bunding after a 15-year period.
99. For those viewpoints with potential to undergo significant effects, the visualisations have been prepared as photomontages, using the baseline photography and adding onto this a computer generated model of the substation. For the remaining viewpoints, the visualisations have been prepared as computer models.

100. The photographs used to produce the photomontages have been taken using Canon EOS 5D and 6D Digital SLR cameras with fixed 50 mm lenses. These cameras have a full-frame (35 mm negative size) CMOS sensor.
101. To create the baseline panoramic photographs, the frames are individually cylindrically projected and then digitally joined to create a fully cylindrically projected panorama using PTGui software or Adobe Photoshop. This process avoids the wide-angle effect that would result should these frames be arranged in a perspective projection, whereby the image is not faceted to allow for the cylindrical nature of the full 360-degree view but appears essentially as a flat plane. Tonal alterations are made using Adobe software to create an even range of tones across the photographs once joined.
102. Computer modelling is used to assist in the assessment process and to illustrate the effects of the proposed development through the production of zone of theoretical visibility diagrams (ZTVs), wirelines, and photomontages. The ZTVs have been generated using ESRI ArcGIS software, based on the Ordnance Survey Terrain 5 digital terrain model (DTM), resampled to a 10m grid. The ZTV viewer height is set to 2 m above ground level and the analysis takes into account earth curvature and light refraction. The ZTVs are not calculated using mathematically approximate methods and unless stated, they are based on a bare-ground survey. No surface features, such as buildings and trees, are included in the analysis.
103. Wireline representations that illustrate the proposed project model set within a computer-generated image of landform are used in the assessment to predict the theoretical appearance of the East Anglia THREE substation. These are produced with 'Visual Nature Studio' software and are based on Terrain 5 Ordnance Survey DTM. There are limitations in the accuracy of this data so that landform may not be picked up precisely. This may result in the substation being more or less visible than is shown.
104. Photomontages have been produced using 'Visual Nature Studio' software, to provide a more realistic image of the appearance of the proposed development. The baseline photographs shown for each viewpoint cover a 72-degree (or in some cases, up to 144-degree) field of view. These are cylindrically projected images and should be viewed at a principle distance of 522 mm.
105. The photographs and other graphic material such as wirelines and photomontages used in this assessment are for illustrative purposes only and, whilst useful tools in the assessment, are not considered to be completely representative of what will be apparent to the human eye. The assessments are carried out from observations in the field and therefore may include elements that are not visible in the photographs.

### **Appendix 29.1 Ends Here**



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East Anglia THREE  
Offshore Windfarm

East Anglia THREE

# Appendix 29.2

## Seascape, Landscape and Visual Environmental Baseline

Environmental Statement  
Volume 3

Document Reference – OEI / Volume 4 / LVIA  
assessment / Appendix 2

Author – Optimised Environment Limited  
East Anglia Offshore Wind Limited  
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## 29.2 SEASCAPE, LANDSCAPE AND VISUAL BASELINE ASSESSMENT

### 29.2.1 Introduction

1. This document presents the environmental baseline in terms of seascape character, landscape character and visual amenity across the relevant study areas associated with the proposed East Anglia THREE project.
2. The baseline assessment describes the environment prior to the introduction of the proposed East Anglia THREE project and provides the basis against which to assess the magnitude of change as a result of the proposed East Anglia THREE project.
3. The proposed East Anglia THREE project comprises the offshore Windfarm, the offshore and onshore cable route including the landfall location at the coast, and the substation to the west of Ipswich.

### 29.2.2 Offshore Baseline

4. The offshore components of the proposed East Anglia THREE project comprise wind turbines, offshore electrical platforms, meteorological masts and underwater cabling. The 100 to 172 wind turbines would be of a maximum tip height of 247m. The closest possible location a wind turbine would be located is 69km from the coastline. At this distant range, the wind turbines would not be visible from ground level along the coast owing to the curvature of the earth. From the highest point of 20m AOD on the cliff near Bawdsey, some sections of the blades of the closer wind turbines would be theoretically visible, although actual visibility would be unlikely as this would require excellent visibility conditions which occur very infrequently.
5. From coastal areas, there would potentially be views of construction vessels and cable laying vessels which would use lighting during hours of darkness as part of the construction process. The glow of construction lighting from vessels at more distant turbine sites may be visible at night. While there is an existing flow of vessels visible from the coast, the construction and cable laying vessels would add to the volume, but not to the extent that it would give rise to a significant impact on landscape or visual receptors along the coast. There is greater potential for impacts to occur from the seascape, with these impacts acting upon the seascape character as well as visual receptors on-board sea-borne vessels.
6. In terms of policy, the UK Marine Policy Statement (2011) makes reference to the definition of 'landscape' contained in the European Landscape Convention (2000), in the absence of a legal definition of seascape in the UK. It states '*In the context of this document, references to seascape should be taken as meaning landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other.*'

7. The UK Marine Policy Statement identifies the scope of the Marine Plans in terms of the considerations that would be required;
8. *'When developing Marine Plans, marine plan authorities should consider at a strategic level visual, cultural, historical and archaeological impacts not just for those coastal areas that are particularly important for seascape, but for all coastal areas, liaising with terrestrial planning authorities as necessary.'*
9. The Draft East Inshore and East Offshore Marine Plans (2014) have been prepared in response to the UK Marine Policy Statement and present a series of objectives aimed at balancing economic development against environmental protection. *'Objective 5 – To conserve heritage assets, nationally protected landscapes and ensure that decisions consider the seascape of the local area'* ensures that it is not only the coastal landscapes that are considered, but also the inshore area out to approximately 12 nautical miles and the offshore area out to the international maritime border with the Netherlands, Belgium and France.
10. The East Inshore and Offshore Character Areas identified in the Marine Plans that are of relevance to the LVIA for the proposed East Anglia THREE project are the Suffolk Coastal Waters (inshore) and the East Anglian Shipping Waters (offshore). Specific information with regard to the character of these areas is presented in the 'Seascape Characterisation around the English Coast' (Marine Plan Areas 3 and 4 and Part of Area 6 Pilot Study) (2012).
11. In terms of seascape character, the inshore and offshore areas are described in the Seascape Characterisation citation in terms of 'Key Characteristics', 'Physical Influences', 'Cultural Influences' and 'Aesthetic and Perceptual Responses'. For the inshore area of the 'Suffolk Coastal Waters' the citation refers to the coastal features as the principal influence on the seascape character, with comparatively little reference to the seascape features.
  - *'Suffolk Coast and Heaths AONB and Heritage coast designations recognise a rich mixture of unique and vulnerable coastal lowland landscapes;*
  - *Low-lying coastline dominated by coastal processes and estuarine influences;*
  - *Unified coastal interface with a nationally significant concentration of vegetated shingle structures and coastal lagoon habitats;*
  - *Colourful seafront coastlines lined by brightly painted beach huts;*
  - *Steeply sloping shelved shingle beaches;*
  - *Prolific wildlife value, particularly bird life;*

- *Dramatic and contrasting developments such as Sizewell nuclear power station, Orfordness transmitting station and commercial dock development at Felixstowe;*
  - *Historically heavily defended coastline;*
  - *Large scale panoramic views of the seascape dominated by busy offshore North Sea shipping waters;*
  - *Perception of seascape is often from the immediate coastal interface due to long estuaries, low landform and coastal shingle structures.'*
12. In respect of the extent of the seascape area, the influence of these coastal features would reduce with distance, such that there would be very little influence out at the boundary. The offshore components would be located a distance of 47km from the outer boundary of the inshore area, such that, despite their large scale, they would appear as relatively small scale elements and their influence on the character of the seascape would be limited.
13. The citation for the offshore 'East Anglian Shipping Waters' describes the seascape as a unified and expansive area of open water with few surface features, other than 'dense concentration of shipping activity' and the additional influence of offshore wind farms, gas fields and areas used for military practice, fishing and dredging. With the absence of any special seascape features and the presence of many human interventions, the sensitivity of this area to the proposed East Anglia THREE project would be low.

### **29.2.3 Onshore Baseline – Study Area Overview**

14. The study area comprises a 4km radius around the substation and a 1km strip along the 37km onshore cable route (500m either side) with expanded sections around access tracks, Construction Consolidation Sites and the landfall location.
15. The proposed East Anglia THREE project is located in Suffolk in the southern part of East Anglia. The offshore Windfarm lies approximately 69km off the North Sea coast, with the landfall location for the offshore cable route located south of Bawdsey. The onshore cable route crosses the River Deben and Martlesham Creek, and through the surrounding agricultural landscape to wrap around the northern side of Ipswich. It ends at the substation, located next to the existing substation at Bramford.
16. The character of the study area is influenced by the transition from the coastal landscape to the interior landscape, and while the majority of the area is typified by rural agricultural farmland, there are also influences from urban areas and rural developments.
17. The baseline assessed includes the consented East Anglia ONE substation, and considers the proposed design as provided by East Anglia ONE. This includes detail

on both the substation and proposed visual mitigation that was not available to be incorporated into the East Anglia THREE Environmental Statement.

#### **29.2.4 Onshore Baseline – Landscape Character**

##### **29.2.4.1 National Designations - Areas of Outstanding Natural Beauty (AONB)**

18. AONBs are landscapes that have been recognised as being of national importance. They are protected through legislation which places the specific duty on local authorities to produce a Management Plan and places responsibility on all 'relevant authorities' in the area to conserve and enhance the natural beauty of the designated area.
19. The Management Plan for the Suffolk Coast & Heaths AONB is created through a Joint Advisory Committee. The implementation of the Management Plan is achieved through the Suffolk Coast & Heaths AONB Partnership which is made up of organisations with a particular interest in the AONB and is co-ordinated by a core team.
20. The Suffolk Coast & Heaths AONB extends approximately 60 kilometres along the coast of Suffolk from the Stour estuary in the south to Kessingland in the north. It is a low-lying coastal area including shingle beaches, crumbling cliffs, marshes, estuaries, heathland, forests and farmland. The AONB contains the few remaining fragments of Sandlings Heath and some of the least developed coastline in southern England. The countryside, towns and villages in the AONB have an unspoilt and tranquil atmosphere, and a distinctive character.
21. The part of the study area subject to the Suffolk Coast and Heaths AONB is the eastern part which extends from Bawdsey, on the coast, to Woodbridge where Martlesham Creek meets the River Deben. While the AONB predates the Suffolk Landscape Character Assessment, the special qualities of the AONB are based on the LCTs which occur in the area. The route passes through five of the eight LCTs which make up the AONB, of which four are agricultural landscapes, with the Saltmarsh and Intertidal Flats LCT being the only largely unmodified landscape.
22. At the coast, the landfall and initial section of the onshore cable route lie within an area of Rolling Estate Farmlands LCT, before passing into the Coastal Levels LCT, and then passing through a very narrow band of Saltmarsh and Intertidal Flats LCT, prior to crossing the River Deben. On the opposite bank, the route passes again through the Coastal Levels LCT and then a mix of different agricultural landscapes where subtle variations in character occur as a result of the changing topography and extent of enclosure afforded by mature tree cover and hedgerows.
23. Beyond the crossing of the River Deben, the onshore cable route lies on the western edge of the AONB where the influence of the Saltmarshes and Intertidal Flats LCT is not readily evident and the character of the landscape is largely influenced by the

agricultural landscape. With the exception of small sections of Saltmarshes and Intertidal Flats and Valley Meadowlands LCTs, the location of the onshore cable route would be through an agricultural landscape where the extent of mature tree cover and hedgerows combined with the subtle variations in landform add to the rural identity.

24. The Management Plan states that *‘The unique quality of the Suffolk Coast & Heaths AONB is defined by the rich mosaic of landscape types in a relatively small area. Coast, estuaries, heath, forest, farmland and coastal market towns together create an intimate pattern, an important part of Britain’s natural and cultural heritage. Other less tangible features, such as its tranquillity, lack of significant congestion and light pollution, and its relatively undeveloped nature, contribute to the special character of the area.’*
25. Subsequent to the LVIA for this project being carried out by the applicant, the character and Special Qualities of the AONB have been formally set out and published in relation to a separate project, but are applicable to the AONB as a whole and follow the recognised Natural England format. This information can be found at [http://www.suffolkcoastal.gov.uk/yourdistrict/sizewell/aon b-special-qualities-document/](http://www.suffolkcoastal.gov.uk/yourdistrict/sizewell/aon-b-special-qualities-document/)
26. There are 8 landscape character types within the AONB, these are listed in the table below and their special qualities are outlined. Those LCTs which feature in the study area of the landfall location and onshore cable route are highlighted in grey.

Landscape Character Type	Special Qualities
Sand dunes and shingle ridges	<ul style="list-style-type: none"> <li>• Shingle features, some vegetated, notably Orford Ness;</li> <li>• Short sections of crumbling soft cliffs – Dunwich, Covehithe, their landscape prominence and associated biodiversity and geodiversity through exposure of geological strata;</li> <li>• Bodies of water (broads/saline lagoons) – Shingle Street, Benacre;</li> <li>• Sense of space, isolation and tranquillity, long-distance walking routes;</li> <li>• Coastal towns and villages – Aldeburgh, Southwold, Walberswick, Dunwich;</li> <li>• Beach huts and fishermen’s huts;</li> <li>• Distinctive built heritage in the landscape such as Martello towers and Cold War buildings on Orford Ness, which add a sense of history to the landscape;</li> <li>• The iconic resort of Thorpeness, built as a bespoke holiday village in the early 1900s; and</li> <li>• Havergate Island in the Ore estuary, Suffolk’s only island.</li> </ul>
Saltmarsh and intertidal flats	<ul style="list-style-type: none"> <li>• Extensive areas of saltmarsh and mudflats;</li> <li>• Navigation opportunities for small boats;</li> <li>• Numerous boats on swinging moorings provide an attractive feature in the landscape;</li> <li>• Open and extensive views;</li> </ul>

	<ul style="list-style-type: none"> <li>• Specialist wildlife; and</li> <li>• Walking where estuary-side paths exist.</li> </ul>
Coastal levels	<ul style="list-style-type: none"> <li>• Extensive wet, grazing marshes;</li> <li>• Large reedbeds;</li> <li>• Ancient drainage and enclosure patterns;</li> <li>• Open and extensive views;</li> <li>• Specialist wildlife; and</li> <li>• Freshwater sources (well-points and reservoirs).</li> </ul>
Open coastal and wooded fens	<ul style="list-style-type: none"> <li>• Large reedbeds, with a strong sense of tranquillity;</li> <li>• Flat open landscapes;</li> <li>• An undeveloped nature to these areas; and</li> <li>• Freshwater habitats especially reedbeds and their associated wildlife.</li> </ul>
Valley meadowlands	<ul style="list-style-type: none"> <li>• Small-scale undeveloped landscapes; and</li> <li>• Freshwater habitats especially.</li> </ul>
Estate sandlands and rolling estate sandlands	<ul style="list-style-type: none"> <li>• Rare lowland heath and its associated wildlife;</li> <li>• Large skies, open vistas across heath/wooded mosaics;</li> <li>• Distinctive field patterns and elm and pine hedges;</li> <li>• Coniferous forest meeting multiple needs and a few iconic ancient woods;</li> <li>• Good walking, cycling and riding opportunities;</li> <li>• Glorious colour of red crag pits; and</li> <li>• Natural, unspoilt cliffs and beaches.</li> </ul>
Estate farmlands	<ul style="list-style-type: none"> <li>• Spring cereal crops and their important wildlife;</li> <li>• Large open views from the uplands down to the Orwell and Stour estuaries;</li> <li>• Ancient woodlands, distinctive field patterns and designed parkland landscapes with ancient trees; and</li> <li>• A particularly quiet and undisturbed part of the AONB (and project area).</li> </ul>
Seascape	<ul style="list-style-type: none"> <li>• There is currently no description of the seascape character or special qualities for the Suffolk Coast.</li> </ul>

#### 29.2.4.2 Local Designations – Special Landscape Areas (SLA)

27. SLAs are landscapes that are designated for their local importance. Saved Policy CL2 from the Mid Suffolk Local Plan (1998) states *‘Within Special Landscape Areas, particular care will be taken to safeguard landscape quality, and where development does occur it should be sensitively designed, with high standards of layout, material and landscaping.’* With specific reference to utility installations and power lines, there is an expectation that these should be routed away from SLAs to avoid visual intrusion. Suffolk Coastal District Policy AP21, also states that: *‘In the Area of Outstanding Natural Beauty and Special Landscape Areas the form of buildings, choice of materials, and colours must be sympathetic to the general character of the area and seek to reduce visual impact.’*
28. Mid Suffolk Core Strategy states in Paragraph 3.18: *‘The Landscape Character Assessment does not replace the Special Landscape Area local designations. These designations will form part of the Development Control Policies DPD and will remain*

*adopted until superseded by a level 3 Landscape Character Assessment of the District.* The level 3 Landscape Character Assessment was not available for areas within the study area at the time of writing. SLAs are shown in Figure 29.2, and referenced in the baseline descriptions in this Appendix and in the assessment in Chapter 29. The East Anglia THREE onshore cable route passes through areas designated as SLA, while the East Anglia THREE substation lies outwith the SLA designation.

### 29.2.4.3 Heritage Coast

29. Heritage Coasts are 'defined' rather than designated areas and form part of a national network around England. Their purpose is to:
- Conserve, protect and enhance the natural beauty of the coasts, their marine flora and fauna, and their heritage features.
  - Facilitate and enhance their enjoyment, understanding and appreciation by the public.
  - Maintain and improve the health of inshore waters affecting Heritage Coasts and their beaches through appropriate environmental management measures.
  - Take account of the needs of agriculture, forestry and fishing, and of the economic and social needs of the small communities on these coasts.
30. Natural England describe the Suffolk Heritage Coast as: '*... a secret coastline of reed-fringed creeks, tidal marsh and low, heath-backed cliffs. Its changing faces make this a discreet but distinctive landscape.*' It runs from Kessingland to Felixstowe and incorporates the Blyth, Alde/Ore and lower Deben estuaries. It is contained mainly within the Suffolk Coast & Heaths AONB.

### 29.2.4.4 National Landscape Character

31. National Character Areas (NCAs); previously known as Joint Character Areas (JCAs) were originally identified by the Countryside Agency who mapped 159 areas of landscape character across England. This mapping, often referred to as 'The Character of England', and the associated descriptions have been revised and developed by Natural England into National Character Area Profiles and provide a picture of the differences in landscape character at the national scale. It is considered that whilst the NCAs provide a recognised, national, spatial framework the scale of the mapping and information makes it of limited use as a planning tool. It provides a useful overview of the landscape within the area and a context for more detailed Landscape Character Assessments.
32. The study area for the onshore cable route is located within the Suffolk Coast and Heaths NCA (NCA 82) to the far east of the proposed East Anglia THREE project, and

the South Suffolk and North Essex Clayland NCA (NCA 86) for the rest of the Development Area. This is shown in Figure 29.3.

33. *'The Suffolk Coast and Heaths NCA lies on the North Sea coast between Great Yarmouth in the north and the port town of Harwich in the south, forming a long, narrow band that extends between 10 and 20 km inland. Its inland western boundary is with the South Norfolk and High Suffolk Claylands and South Suffolk and North Essex Claylands NCAs, with projections up many small river valleys.'*
34. The Suffolk Coast and Heaths landform is described as *'mainly flat or gently rolling, often open but with few commanding viewpoints'*. The Suffolk Coast & Heaths AONB is contained within the NCA. The area is a combination of heathland and agricultural land - much of which has been reclaimed from the heathland. Woodland has also been planted on the former heathland. This forms a mosaic of natural and semi natural landscape features. The coast is interrupted by five estuaries; Stour, Orwell, Deben, Alde/Ore and Blyth, with extensive intertidal areas of mudflat and salt marsh, adding to the areas biodiversity and ecological value.
35. The South Suffolk and North Essex Clayland NCA covers the four counties of Suffolk, Essex, Hertfordshire and Cambridgeshire. The NCA Profile describes the area as:
36. *'... an ancient landscape of wooded arable countryside with a distinct sense of enclosure. The overall character is of a gently undulating, chalky boulder clay plateau, the undulations being caused by the numerous small-scale river valleys that dissect the plateau. There is a complex network of old species-rich hedgerows, ancient woods and parklands, meadows with streams and rivers that flow eastwards. Traditional irregular field patterns are still discernible over much of the area, despite field enlargements in the second half of the 20th century.'*
37. *Farming, predominantly for arable crops, utilises 84 per cent of the land area, supported by the moderately fertile soils and equable climate.... The area's rich archaeology provides evidence of a long history of settlement and significant past wealth and importance, including Palaeolithic finds, Roman sites, medieval monasteries and castles, isolated moated farmsteads, barns and a number of large country houses.'*

#### **29.2.4.5 Local Landscape Character**

38. The Suffolk Landscape Character Assessment has been produced by Suffolk County Council and District Authorities, first published in 2008 and revised with guidance and other additions in 2011. Details can be found at [www.suffolklandscape.org.uk](http://www.suffolklandscape.org.uk). Using the NCAs as a baseline, it further refines the broad NCAs within the Suffolk County boundaries into 31 distinctive Landscape Character Types (LCT). Each LCT is defined in detail and further sub-divided into 'units' in instances where the same LCT is identified in separate geographical locations.



39. LCT and LCT units provide a more detailed description of the landscape character within the immediate area of the proposed East Anglia THREE project and indicate the features likely to be affected or crossed by the onshore cable route and substation.

#### **29.2.4.6 Onshore Cable Route**

40. To assist in the management of the onshore cable route assessment, the route has been broken down into a number of individual sections so that a particular focus can be achieved on the resulting outcome of landscape and visual impacts. These sections are based on references given to crossing points of particular features such as roads (RDX) or rivers (RVX). There are nine sections in total and these are described in the following sections.

#### **29.2.4.7 Local Landscape Character**

41. In general terms, the landscape around the proposed East Anglia THREE project is predominantly farmed agricultural land. Large open fields feature extensively along the route, many used for arable crops. Field boundaries are often hedgerows, occasionally with hedgerow trees and intermittent woodlands or woodland shelterbelts. The gently undulating agricultural landscape continues for the majority of the study area with subtle changes occurring between landscape character types, which mostly relate to variations in the relief and extent of enclosure. It is accepted that the boundaries of each of these LCTs, while clearly defined on plan, would not be so readily apparent on the ground, where characteristics of adjoining LCTs are likely to be present.
42. A noticeable change in character does occur where there is a change from large scale agricultural farmland to more intimate narrow valleys. In these areas, the open fields are replaced with smaller scale fields consisting of rough grassland and native scrub woodland in places.
43. The character of the landscape also changes as the route passes through the coastal levels at either side of the River Deben. Here the landscape is flat and open. There are long range views across the landscape and the river estuary, with a strong influence from the large expansive sky.
44. It is unlikely, given the geographical extent of the LCTs, that the landfall location, onshore cable route and substation study areas will occupy large areas within the LCTs. The baseline study, therefore, identifies the overall characteristics of the LCTs as described in the Suffolk County Council web-site and then further describes the characteristics and elements that are contained within the study area for each section of the onshore cable route and the substation, which comprises a 1km strip along the onshore cable route and 4km radius around the substation.

#### 29.2.4.8 Section 1 - Landfall Location and Onshore Cable Route to RDX 01

45. The landscape at the landfall location within the study area falls within a unit of the Rolling Estate Sandlands LCT. The key characteristics of this landscape character type are described as:
- *Rolling river terraces and coastal slopes*
  - *Sandy and free draining soils with areas of heathland*
  - *Late enclosure with a pattern of tree belts and straight hedges*
  - *Landscape parklands*
  - *A focus of settlement in the Estate Sandlands landscape*
  - *19thC red brick buildings with black glazed pantiles*
  - *Tree belts and plantations throughout*
  - *Occasional and significant semi-natural woodlands and ribbons of wet woodland*
  - *Complex and intimate landscape on valley sides*
46. This LCT unit covers a large geographical area with both coastal, riverside and inland features. The study area around the landfall location constitutes a localised area along a 2km stretch of coastline.
47. The features of the LCT within the study area include an area of sandy beach and a coastal slope which increases in height from approximately 5m AOD to the northern point of the coastline within study area to approximately 25m AOD at the south-west of the study area where it is referred to as Bawdsey Cliff on OS maps. Adjoining the coastal slope inland are medium scale agricultural fields which are bounded by tall hedgerows with mature trees beyond which there is a minor road. An area of mixed woodland shelterbelt planting also adjoins Bawdsey Cliff and provides screening for a disused MOD base (RAF Bawdsey) to the south-west of the study area. Other settlement within this area includes scattered rural dwellings and farmsteads along the minor road. Settlement increases to the north of the study area which borders the village of Bawdsey. There are further parking and visitor facilities along the coast just beyond the study area which provide access to the long distance Suffolk Coast Path and to the historic Martello towers which dot this section of coast.
48. Natural coastal processes are a feature of the coastline within the study area where the cliff has recently been subject to erosion. This has created an edge of exposed bare earth where the cliff has fallen away. A concrete 'pillbox' lookout structure has

also partially slid down the eroded landfall face. Farm fields abut hard onto the cliff edge leaving only a narrow strip for the Suffolk Coast Path.

#### 29.2.4.8.1 Sensitivity of landscape receptors

49. The LCT unit and study area are situated within the Suffolk Coast & Heaths AONB and also within the Suffolk Heritage Coast description. While the agricultural landscape, which encroaches tight onto the cliffs, reduces the scenic quality of the Rolling Estate Sandlands LCT, the designations combined with the scenic qualities of the coastal landscape give an assessed value rating of medium to high. Susceptibility to change from the proposed East Anglia THREE project is considered to be medium owing to the potentially localised impacts and the capacity to restore the landscape elements, albeit in a landscape where visibility is often open. The overall sensitivity of the Rolling Estate Sandlands LCT to the proposed East Anglia THREE project within the study area is, therefore, considered to be **medium to high**.

#### 29.2.4.8.2 Sensitivity of visual receptors

50. Within this landfall section, the Suffolk Coast Path is routed along the shingle levels of the beach from the ferry crossing to the west of Bawdsey Manor, turning inland along a track between field boundaries to Ferry Road. The Suffolk Coast Path follows Ferry Road towards Bawdsey village within the study area where it turns back towards the coast along a minor road. At the time of assessment, the section of the route around the landfall location was closed due to erosion. However, it has been assumed that it will be reinstated and is assessed as existing.
51. The main users of the Suffolk Coast Path are likely to be recreational walkers. Road users along Ferry Road will also experience the part of the route that coincides with the road.
52. The view along this section of the Suffolk Coast Path is not identified as a valued view on OS maps. The main focus of views along this section of the Suffolk Coast Path is the expansive seascape and views along the coastline, particularly to the north-east where the historic Martello towers create distinctive point features. Away from the cliffs, the landscape quickly assumes an agricultural character and it is difficult to discern a coastal edge from Ferry Road and the PRoW. Hedges and hedgerow trees along the track and Ferry Road filter and enclose views such that the agricultural character prevails. Overall, the value of the views of walkers on the Suffolk Coast Path is assessed as medium to high.
53. The susceptibility of walkers on the Suffolk Coast Path is typically medium to high owing to the awareness of their surroundings combined with the length of time they will be exposed to views. In respect of this particular context, the experience of walkers is already influenced by the modified extent of the agricultural landscape in contrast to the comparatively less modified extent of the coast. Development is already seen to

encroach onto the coastline and localised erosion detracts from the scenic quality of the coastal views.

54. The combination of the medium to high value of the view and the medium to high susceptibility leads to a **medium to high** sensitivity for walkers on the Suffolk Coast Path. This rating reflects the sensitivity of the views of walkers to the potential impact of the proposed development and is not a judgement with regard to the sensitivity of the Suffolk Coast Path or the AONB.
55. While Ferry Road is located in the AONB, there are no recognised viewpoints associated with this section of the route and the extent of views is largely contained by the surrounding hedgerows. The value of road-users' views is therefore medium.
56. The susceptibility of the road-users is limited by the brief opening which allows a view in this direction. Travelling at speeds, typically in excess of 30mph, the view will be experienced for only a short duration. Because of its perpendicular angle to that of the road, it will be apparent to westbound road-users and not readily apparent to eastbound road users. The susceptibility of road-users will be medium.
57. The combination of the medium value of the views and the medium susceptibility of road-users leads to an overall medium sensitivity for road-users on Ferry Road.

#### 29.2.4.9 Section 2 - Road Crossing RDX01 to RDX02

58. In this section of the route the onshore cable route passes through the flat landscape flanking the River Deben and beneath the river itself. There are 4 LCTs within this section of the route:
  - a. LCT 06 - Coastal Levels;
  - b. LCT 11 – Plateau Estate Farmlands;
  - c. LCT 16 – Rolling Estate Sandlands; and
  - d. LCT 20 – Saltmarsh and Intertidal Flats.
59. The key characteristics of the Rolling Estate Sandlands LCT are described above in Section 29.4.8. The Coastal Levels LCT occur at each side of the River Deben and are described as:

*Flat coastal grazing land reclaimed from saltmarsh, behind sea and river walls*

- *Flat marshland adjacent to the coast or estuaries*
- *Marine alluvium soils*
- *Sinuuous and complex mediaeval dyke networks*

- *Uniform 19th century dyke networks*
  - *Cattle-grazed wet grassland*
  - *Widespread modification for arable production*
  - *Small plantations and carr woodlands*
  - *Inland side of rising ground often wooded*
  - *Important wildlife conservation areas*
  - *Unsettled landscape with domestic buildings on the fringes*
  - *Derelict wind pumps*
60. The Plateau Estate Farmlands LCT introduce a subtle change in landscape to the Rolling Estate Sandlands LCT which occur at the fringes of the Plateau Estate Farmlands within the study area. The Plateau Estate Farmlands LCT are described as:
61. *A landscape of large regular fields with small woodlands on light loamy soils*
- *Flat landscape of light loams and sandy soils*
  - *Large scale rectilinear field pattern*
  - *Network of tree belts and coverts*
  - *Large areas of enclosed former heathland*
  - *18th- 19th & 20th century landscape parks*
  - *Clustered villages with a scattering of farmsteads around them*
  - *Former airfields*
  - *Vernacular architecture is often 19th century estate type of brick and tile*
62. The Saltmarsh and Intertidal Flats occur along the edges of the River Deben between the Coastal Levels and the water edge as shown in Figure 29.3. The key characteristics of the Saltmarsh and Intertidal Flats LCT are described as:
- Marine alluvium and some outcrops of clay, forming mud flats*
- *Inter-tidal flats dissected by creeks*
  - *A few small areas of saltmarsh*
  - *Wild unimproved land*

- *Unsettled landscape*
- *Powerful sense of isolation and wildness*
- *Integral to the setting of notable features*
- *Suffering from coastal squeeze and the associated erosion*

63. The onshore cable route in this section passes through approximately 4km of the Coastal Levels LCT and approximately 2.5km of Rolling Estate Farmlands LCT where it adjoins the Coastal Levels LCT at either side of the river. The Saltmarsh and Intertidal Flats are traversed for a short distance at either side of the river. This is illustrated in Figure 29.4a.
64. The landscape is low-lying, predominantly flat and open. The sense of openness increases with proximity to the River Deben owing to the limited occurrence of hedgerow enclosure and this produces a large scale and expansive feel to the landscape. In contrast, a sense of enclosure increases inland from the Coastal Flats, signifying the change in character to Rolling Estate Farmlands. Hedgerows and shelterbelt woodlands begin to feature in the more rolling landscape and filter long range views, although the landscape is still predominantly open.
65. The landscape is mainly agricultural. Along the Coastal Flats, arable fields have been reclaimed from marshland through the use of complex mediaeval and more uniform 19<sup>th</sup> Century dyke networks. In the more elevated parts of the Rolling Estate Sandlands, the large agricultural fields are bounded by hedgerows and trees, and interspersed intermittent shelterbelt planting.
66. Typical of the Coastal Levels LCT, settlement within this section is very sparse. Where settlement occurs it is within the more elevated Rolling Estate Sandlands LCT where farmsteads and rural dwellings are scattered across the agricultural landscape.
67. Footpaths and tracks provide access in the Coastal Levels, while within the Rolling Estate Sandlands access is enhanced through the presence of minor roads. Sailing vessels are also a common form of transport and recreational activity along the River Deben, where they introduce movement in an otherwise remote and tranquil landscape.

#### **29.2.4.9.1 Sensitivity of landscape receptors**

68. This section of the onshore cable route is situated to the eastern edge of the Suffolk Coast & Heaths AONB and forms part of the Heritage Coast. Although the landscape is mainly agricultural and influenced by human activity, historic elements such as mediaeval field formations and natural formations such as the River Deben combined with a sense of openness and tranquillity give the area a medium to high rating for value. Susceptibility to change from the proposed East Anglia THREE project is

considered to be medium owing to the potentially localised impacts and the capacity to restore the landscape character, especially in the reclaimed Coastal Levels of the River Deben where there is little enclosure. The overall sensitivity of the Rolling Estate Sandlands LCT, Plateau Estate Farmlands LCT and Coastal Levels LCT to the proposed East Anglia THREE project is **medium to high**.

69. The Saltmarsh and Intertidal Flats LCT has a medium to high value rating due to its wild and unsettled nature and its role in the setting of other features. Its fragile nature due to coastal squeeze and erosion give it a medium susceptibility to change, particularly during the construction phase and an overall sensitivity of **medium to high**.

#### 29.2.4.9.2 Sensitivity of visual receptors

70. Footpaths, bridleways and minor roads occur mainly to the west of the River Deben. Across the reclaimed marshland to the east of the River Deben there are no PROWs. Other visual receptors within this section of the onshore cable route include the River Deben itself which is used for recreational activities by users of sailing and other water-borne vessels. Small settlements of Kirton and Falkenham are situated on the edge of the study area and will experience few visual impacts as a result of the proposed East Anglia THREE project.
71. Public footpaths and bridleways within the study area are generally situated along field boundaries and have open views across the agricultural landscape. There is a mixture of open fields, fields bounded by fragmented hedgerows with large gaps in places and fields with full hedgerows. Mature trees and tall hedgerows restrict or filter views in places. Where the landscape slopes towards the River Deben, there are extensive views over the adjacent marshland, but generally views are contained within the rolling landscape. The footpaths link the settlements of Kirton and Falkenham to other areas of settlement in the area and to the River Deben.
72. Recreational users of PROWs are assessed as having a medium susceptibility to change from the proposed East Anglia THREE project. The views, although in an AONB and over the River Deben, are mainly over agricultural fields and are incidental views and not views that are formally recognised for their scenic value. Therefore, the value of the views is assessed as medium. The overall sensitivity of users of the PROWs to the proposed East Anglia THREE project is **medium**.
73. Users of sailing and other water-borne vessels on the River Deben will experience views over the surrounding marshland flats and more distant views of the rising valley sides. The main focus of the view is likely to be along the River Deben and the areas of navigation. The onshore cable route will be passed beneath the River Deben using HDD and will have little visible impact on the River or the marshlands. Any impacts on the loss of field boundaries in the expansive, open vista from the river will appear minor

in the overall view. Susceptibility to change from the proposed East Anglia THREE project is considered to be medium to low for users of sailing and other water-borne vessels on the River Deben. The value of the views is assessed as medium to high. The overall sensitivity of viewers on water-borne vessels on the River Deben to the proposed East Anglia THREE project is considered to be **medium**.

#### 29.2.4.10 Section 3 - Road Crossing RDX02 to RDX03

74. In this section the onshore cable route passes through a flat, slightly elevated agricultural landscape before dipping into a subtle valley landscape as it travels north parallel to the River Deben. There are 4 LCTs within this section of the route:
- a. LCT 07 – Estate Sandlands;
  - b. LCT 11 – Plateau Estate Farmlands;
  - c. LCT 16 – Rolling Estate Sandlands; and,
  - d. LCT 26 – Valley Meadowlands;
75. The key characteristics of the Rolling Estate Sandlands LCT and Plateau Estate Farmlands LCT are described above in sections 29.3.8 and 29.3.9. The Estate Sandlands introduce a subtle change in landscape to the Rolling Estate Sandlands which occur at the fringes of the Estate Sandlands within the study area. The Estate Sandlands are described as:
76. *A landscape of large geometric fields, plantation woodlands and remnant heathland*
- *Flat or very gently rolling plateaux of free-draining sandy soils, overlying drift deposits of either glacial or fluvial origin*
  - *Chalky in parts of the Brecks, but uniformly acid and sandy in the south-east*
  - *Absence of watercourses*
  - *Extensive areas of heathland or acid grassland*
  - *Strongly geometric structure of fields enclosed in the 18th & 19th century.*
  - *Large continuous blocks of commercial forestry*
  - *Characteristic ‘pine lines’ especially, but not solely, in the Brecks*
  - *Widespread planting of tree belts and rectilinear plantations*
  - *Generally a landscape without ancient woodland, but there are some isolated and very significant exceptions*



- *High incidence of relatively late, estate type, brick buildings*
- *North-west slate roofs with white or yellow bricks. Flint is also widely used as a walling material*
- *On the coast red brick with pan-tiled roofs, often black-glazed*

77. Valley Meadowlands LCT occurs as the landscape dips into a valley formed around the Kirton Creek, a tributary to the River Deben. It is described as:

*Flat valley floor grasslands on silty and peat soils*

- *Flat landscapes of alluvium or peat on valley floors*
- *Grassland divided by a network of wet ditches*
- *Occasional carr woodland and plantations of poplar*
- *Occasional small reedbeds*
- *Unsettled*
- *Cattle grazed fields*
- *Fields converted to arable production*

78. The onshore cable route in this section passes through approximately 1km of the Plateau Estate Farmlands LCT and approximately 0.3km of Rolling Estate Farmlands LCT where it adjoins the Valley Meadowlands LCT. The route traverses the Valley Meadowlands LCT which is approximately 0.5km in width at this point. This is illustrated in Figure 29.4a.

79. The landscape of the Plateau Estate Farmlands consists of a flat topography with large rectilinear fields consolidated from smaller fields through the removal of hedgerows. In common with the adjoining Rolling Estate Farmlands, field boundaries consist of hedgerows with occasional trees. As the onshore cable route heads north, the flat, elevated plateau changes to an undulating topography which drops towards the more intimate landscape of the Kirton Creek valley.

80. In contrast to the rectilinear field structure, the Valley Meadowlands has a more informal landscape pattern, with flat wetland pasture formed from the use of wet ditches, within the sinuous curves of the valley sides and the meandering creek. Carr woodland plantations and native woodlands follow the upper edge of the valley, accentuating the informal curves and increasing the sense of intimacy within the low lying wetland valley.

81. The largest settlement in the area is Kirton, which is a small village on the flat plateau landscape. Elsewhere there are scattered farmsteads and rural dwellings.
82. Access in the area is mainly through a network of minor roads, tracks and footpaths. While light traffic flows on the minor roads and activity of farm machinery in the open fields provides a dynamic element, a sense of remoteness and tranquillity is experienced within the Kirton Creek valley, where views along the valley connect the viewer to the undeveloped marshy reed beds and the River Deben beyond.

#### 29.2.4.10.1 Sensitivity of landscape receptors

83. This section of the onshore cable route is situated to the eastern edge of the Suffolk Coast & Heaths AONB. The Kirton valley is also designated as a Special Landscape Area (SLA) which denotes its local importance. The landscape in this section is mainly agricultural and influenced by human activity. However, the predominantly rural location and the sense of tranquillity in the Kirton Creek valley, contribute to the value of the landscape which is assessed as medium to high. Susceptibility to change from the proposed East Anglia THREE project is considered to be medium owing to the potentially localised impacts and the capacity to restore the landscape character. The overall sensitivity to the proposed East Anglia THREE project is considered to be **medium to high**.

#### 29.2.4.10.2 Sensitivity of visual receptors

84. Footpaths, bridleways, a National Cycle Route and minor roads occur along this section of the route. The small settlements of Kirton and Newbourne, which are situated on the western edge of the study area, will experience few visual impacts as a result of the proposed East Anglia THREE project, due to distance and intervening trees, hedgerows and other landscape features.
85. Public footpaths and bridleways within the study area are generally situated along field boundaries on the elevated ground to the north and south of the Kirton Creek valley and have views across the agricultural landscape. There is a mixture of fields bounded by fragmented hedgerows with gaps in places and fields with full hedgerows. Mature trees and tall hedgerows restrict or filter views in places. Generally, views are contained within the rolling farmed landscape, with mature trees and tall hedgerows restricting or filtering views in places. The footpaths link the settlements of Kirton, Newbourne and rural dwellings to other areas of settlement in the area, and to the River Deben.
86. Recreational users of footpaths and bridleways are assessed as having a medium susceptibility to change from the proposed East Anglia THREE project. The views, although in an AONB, are mainly over agricultural fields, and are incidental views and not views that are formally recognised for their scenic value. Therefore, the value of

the views is assessed as medium. The overall sensitivity of users of the footpaths and bridleways to the proposed East Anglia THREE project is considered to be **medium**.

87. The onshore cable route traverses two minor roads within this section; Park Lane and Hemley minor road. From both these roads, there are open views across the agricultural landscape with occasional trees situated at the road-side but no field boundaries at the points of the proposed crossing. Susceptibility to change from the proposed East Anglia THREE project is considered to be medium to low for road users along the minor road as there will be no disruption of hedgerows adjacent to the road. The views, although in an AONB, are mainly over agricultural fields and are incidental views and not views that are formally recognised for their scenic value. Therefore, the value of the views is assessed as medium. The overall sensitivity of road users to the proposed East Anglia THREE project is considered to be **medium**.

#### 29.2.4.11 Section 4 - Road Crossing RDX03 to RVX 03 (Martelsham Creek)

88. In this section the onshore cable route passes through the flat plateau of the agricultural landscape before crossing a small area of coastal flat adjacent to the River Deben. There are 2 LCTs within this section of the route:
- a. LCT 07 – Estate Sandlands; and
  - b. LCT 16 – Rolling Estate Sandlands.
89. The key characteristics of the Estate Sandlands and Rolling Estate Sandlands are described above in sections 29.3.8 and 29.3.10 respectively.
90. The onshore cable route in this section passes through intermittent areas of Rolling Estate Sandlands totalling approximately 2km. The route passes through approximately 5km of Estate Sandlands which constitutes the main landscape character type within this section of the route. This is illustrated in Figure 29.4b.
91. The landform within this section is flat with very gentle undulations. Large scale, rectilinear fields with mature, tall hedgerows and hedgerow trees, are a common feature and reduce the distinction with the Rolling Estate Sandlands and Estate Sandlands. A common feature to both is also the presence of tree belts, although the presence of coniferous woodlands is more a feature of the Estate Sandlands. Bare earth is a frequent seasonal feature of the ploughed fields. With the exception of the Martelsham Creek, the absence of watercourses within the study area concurs with the Estate Sandlands description.
92. Settlement in the area is focused on two main clusters of housing; one at Waldringfield and the other at Newbourne. Outside of these small settlements are a few scattered farm dwellings. Other man made features in the landscape are clustered in the north of this section of the route around Waldringfield and include Waldringfield

Heath Golf Course, a static caravan park and Brett aggregates quarry. Further south at Newbourne, a concentration of large commercial scale greenhouses occurs just outside the study area.

93. Access along minor roads, connects the settlements of Waldringfield and Newbourne to the larger settlements of Ipswich and Woodbridge to the west and north. A network of footpaths criss-cross the area, mostly following field boundaries and roads. The short section of Coastal Levels traversed by the route is undrained marshland forming a thin wedge adjacent to the River Deben edge. The area is difficult to access despite a footpath that runs behind mature trees and hedgerow along the southern edge.
94. Views within the study area are generally medium to long range in the more open parts to the south, with characteristic views out to the River Deben, and short range in the centre and northern parts of this section due to the strong pattern of mature hedgerows, hedgerow trees along field boundaries and roads, and nearby woodland blocks.

#### 29.2.4.11.1 Sensitivity of landscape receptors

95. This section of the onshore cable route is situated in the Suffolk Coast & Heaths AONB. The landscape is mainly agricultural with small settlements and dispersed farmsteads. The predominantly rural location, medium to long distance views to the south of the area, and the scenic quality of views over the River Deben to the east and north of the route contribute to the value of the landscape which is assessed as medium to high. Susceptibility to change from the proposed project is considered to be medium owing to the potentially localised impacts and the capacity to restore the landscape character. The overall sensitivity to the proposed East Anglia THREE project is considered to be **medium to high**.

#### 29.2.4.11.2 Sensitivity of visual receptors

96. Footpaths, bridleways, a National Cycle Route and minor roads occur along this section of the route. The small settlement of Waldringfield is situated to the east of the study area and will experience few visual impacts from the proposed East Anglia THREE project due to landform and intervening trees, hedgerows and other landscape features.
97. Public footpaths and bridleways within the study area are generally situated along field boundaries to the south of Waldringfield, where they have views across the agricultural landscape, and to the south of Martlesham Creek where they have rural views across agricultural fields and elevated views over Martlesham Creek. There is a mixture of fields bounded by fragmented hedgerows with gaps in places, field boundaries with no hedgerows and fields with full hedgerows. Mature trees and tall hedgerows restrict or filter views in places. To the south, footpaths and bridleways link the settlement of Waldringfield to the wooded valley and rural dwellings to the west and south-west of

the settlement. To the north of this section, the footpaths form a dense network around Martlesham Hall, on the north and east facing slopes of Martlesham Creek.

98. Recreational users of footpaths and bridleways are assessed as having a medium susceptibility to change from the proposed East Anglia THREE project. The views, although in an AONB, are mainly over agricultural fields in the south around Waldringfield and are incidental views and not views that are formally recognised for their scenic value. The value of the views is assessed as medium to high. To the north, the views over Martlesham Creek are extensive in places and are of importance owing to their more scenic nature. Susceptibility to change for users of the footpaths and bridleways is considered to be medium. Existing cables will be used and views of the creek will be largely undisturbed. The overall sensitivity of users of the footpaths and bridleways to the proposed East Anglia THREE project is considered to be medium to high.
99. The Fynn Valley Walk passes to the west of the onshore cable route, mainly following field boundaries and traversing open fields in places. The onshore cable route will not pass under the route and at its closest, the proposed East Anglia THREE project will pass through an adjacent field where it will not be visible. Elsewhere along the Fynn Valley Walk, distance, hedgerows, trees and woodland will obscure views towards the proposed East Anglia THREE project.
100. The onshore cable route traverses a minor road to the west of Waldringfield. To the north of Waldringfield the proposed onshore cable route switches from west to east of Waldringfield Road (National Cycle Route), passing through open agricultural fields beside the road. In this section of the onshore cable route there are open views across the agricultural landscape. Mature trees are situated at the side of the roads which appear as overgrown hedges and form informal arching avenues in places. There are occasional gaps between sections of trees and sections of lower lying hedge with more formal hedgerow trees. Road users in cars will generally be travelling in excess of 30mph and any discernible changes will be visible for only a short duration of time. Susceptibility to change from the proposed East Anglia THREE project is considered to be medium to low for road users in cars and medium for cyclists who will be travelling at a slower speed and will experience more of the landscape scenery as a result. The views, although in an AONB, are mainly over agricultural fields and are incidental views and not views that are formally recognised for their scenic value. Therefore, the value of the views is assessed as medium. The overall sensitivity to the proposed East Anglia THREE project is considered to be **medium** for road-users and **medium** for cyclists.
101. The settlements of Waldringfield and Newbourne will have filtered views of the onshore cable route in this area. The onshore cable route will pass through agricultural fields. The value of the views is assessed as **medium to high**. Residents in local houses have a **medium** susceptibility to change from the proposed East Anglia THREE

project. Although the changes would be minor and will create short term changes in views, they will be a feature in the views from their primary place of residence and will create short term changes in views. Overall sensitivity from residents in Waldringfield and Newbourne is assessed as **medium to high**.

#### 29.2.4.12 Section 5 – RVX03 (Martelsham Creek) to Road Crossing RDX12 (A12)

102. In this section the onshore cable route passes through the rising landscape to the north of the River Deben and entering the undulating urban fringes of Woodbridge. There are 2 LCTs within this section of the route:

- a. LCT 19 – Rolling Valley Farmlands and Furze; and
- b. LCT 26 – Valley Meadowlands.

103. The key characteristics of the Valley Meadowlands are described above in section 29.3.10. The Rolling Valley Farmlands and Furze within this section of the route has a semi-urban influence. It is described as:

*Valley landscapes with distinctive areas of grass and gorse heaths*

- *Valleys with prominent river terraces of sandy soil*
- *Small areas of gorse heathland in a clayland setting*
- *Straight boundaries associated with late enclosure*
- *Co- axial field systems*
- *Mixed hedgerows of hawthorn, dogwood and blackthorn with oak, ash and field maple*
- *Fragmentary cover of woodland*
- *Sand and gravel extraction*
- *Golf courses*
- *Focus for larger settlements*

104. The onshore cable route in this section passes through a short section of Valley Meadowlands before passing through approximately 1.5km of Rolling Valley Farmlands and Furze. This is illustrated in Figure 29.4b.

105. This is a small scale landscape with a rising topography from the river bed at approximately 1m AOD to approximately 20m AOD at its highest point adjacent to the A12. However, the landform has been modified due to the introduction of infrastructure and urban elements including road and rail engineering, construction works, earthworks, artificial mounds, uneven ground and areas of hard standing.

106. Land use in the area is composed of semi-urban and urban elements including housing, commercial premises, sewerage works, the A12 corridor and roundabout, and vacant land from highway alterations which are regenerating with gorse and scrub woodland. To the south of the Rolling Valley Farmlands and Furze, large fields are given to tree and plant production.
107. Within the study area, Valley Meadowland has not been divided into smaller fields and is maintained as an area of large meadow. There is a long distance footpath, the Fynn Valley Walk, along the southern edge of this LCT area, where the main focus is Martlesham Creek and the River Deben. This contrasts with the busy road and rail infrastructure to the north of this section and provides a sense of relative tranquillity.
108. The study area includes the southern edge of the settlement of Woodbridge and the northern outskirts of the settlement of Martlesham. There are farms and some semi-rural dwellings between the main settlements.

#### 29.2.4.12.1 Sensitivity of landscape receptors

109. There are no landscape designations in this section of the route. The presence of road and rail infrastructure and the built environment reduce the value of the landscape. The overall value of the landscape within the study area is medium. Susceptibility to change on landscape character from the pulling through of cables will be medium to low owing to the localised nature of the impacts and their relatively short duration. The overall sensitivity to the proposed East Anglia THREE project is considered to be **medium to low**.

#### 29.2.4.12.2 Sensitivity of visual receptors

110. Footpaths, bridleways, a rail line, minor roads and the A12 road corridor occur along this short section of the route. The settlement of Woodbridge is situated to the north of the study area and will experience few visual impacts from the proposed East Anglia THREE project due to landform and intervening trees, hedgerows and other landscape features.
111. Public footpaths and bridleways within the study area are generally situated along roadsides and access tracks to the north of the rail line, where they have views influenced by urban elements as well as road and rail infrastructure. Generally, the footpaths and bridleway to the north-east of the study area in this section will have no views due to intervening urban elements and woodland. Footpaths to the west of this section will be affected by the proposed East Anglia THREE project as it passes to the south of the A12. In this area there are two footpaths, one which crosses an open field, and the other which is the Fynn Valley Way, which follows the edge of a field which is open on one side and has partial hedgerow with gaps and mature trees to the other side. Both of these paths converge and pass under the A12 embankment via an underpass. Recreational users of the footpaths will have a medium susceptibility to

change from the proposed East Anglia THREE project. The value of the views is assessed as medium. The overall sensitivity of users of the footpaths to the proposed East Anglia THREE project is considered to be **medium**.

112. The onshore cable route traverses two minor roads in this section. Mature trees and hedgerows are situated at the side of the roads. Built and engineered elements are visible in most views from the roads. Road users will generally be travelling at 30mph, and closer to 40-60mph on the A12, such that any discernible changes will be transitory. Susceptibility to change from the proposed East Anglia THREE project is considered to be medium to low for road users along the minor roads. The views are mainly over small fields towards built or engineered elements and are incidental views and not views that are formally recognised for their scenic value. Therefore, the value of the views is assessed as medium to low. The overall sensitivity of road users to the proposed East Anglia THREE project is considered to be **medium to low**.
113. The settlements of Martlesham and Woodbridge will have filtered views of the onshore cable route. The onshore cable route will pass through agricultural fields in the context of semi-urban elements such as rail line embankment to the north of this section. The value of the views is assessed as medium. Residents in local houses have a medium susceptibility to change from the proposed East Anglia THREE project. Although the changes would be minor and will create short term changes in views, they will be a feature in the views from their primary place of residence and will create short term changes in views. Overall sensitivity from residents in Martlesham and Woodbridge is assessed as **medium**.

#### **29.2.4.13 Section 6 – Road Crossing RDX12 (A12) to Road Crossing RDX18 and Section 7 – Road Crossing RDX18 to Road Crossing RDX19**

114. These two sections of the route pass through the same landscape character types and have therefore been combined. In these sections the onshore cable route passes through the undulating valley landscape associated with the River Fynn and its tributaries, and the rolling farmland beyond. There are two LCTs within this section of the route:
- LCT 04 – Ancient Rolling Farmlands; and
  - LCT 19 – Rolling Valley Farmlands and Furze.
115. The key characteristics of the Rolling Valley Farmlands and Furze LCT is described above in section 29.3.12. The Ancient Rolling Farmlands LCT occur further to the west of the onshore cable route and are described as:

*A rolling landscape of medium clay soils studded with blocks of ancient woodland*

- *Rolling arable landscape of chalky clays and loams*



- *Dissected widely, and sometimes deeply, by river valleys*
  - *Field pattern of ancient random enclosure. Regular fields associated with areas of heathland enclosure*
  - *Hedges of hawthorn and elm with oak, ash and field maple as hedgerow trees*
  - *Substantial open areas created for airfields and by post WWII agricultural improvement*
  - *Scattered with ancient woodland parcels containing a mix of oak, lime, cherry, hazel, hornbeam, ash and holly*
  - *Network of winding lanes and paths, often associated with hedges, create visual intimacy*
  - *Dispersed settlement pattern of loosely clustered villages, hamlets and isolated farmsteads of mediaeval origin*
  - *Farmstead buildings are predominantly timber-framed, the houses colour-washed and the barns blackened with tar. Roofs are frequently tiled, though thatched houses can be locally significant*
  - *Villages often associated with village greens or the remains of greens*
116. The onshore cable route in this section passes through approximately 5km of Rolling Valley Farmlands and Furze and approximately 5km of Ancient Rolling Farmlands, much of which is passed through intermittently in places where the onshore cable route comes out of the River Fynn valley for a short stretch. Beyond the valley, the onshore cable route passes through a longer section of Ancient Rolling Farmlands before entering into the Rolling Estate Farmlands for approximately 0.7km at its western edge. This is illustrated in Figure 29.4c.
117. The valley landform and surrounding undulating landform, has an influence on both the experience and use of the agricultural landscape within the study area. From the top of the valleys and in the undulating landscape surrounding the valleys, the landscape is experienced as large scale and open. The valleys themselves are often low lying and in some places subtle, however the rising landform combined with frequent tree cover on steeper slopes creates a sense of enclosure.
118. The rolling and sinuous nature of the landscape has produced irregular field patterns in places. In general terms, the fields are large and open, particularly towards the top of the valleys and in the rolling farmlands where they are mainly used for arable crops. Within the valleys, fields are generally smaller and irregular in shape and contain a mixture of arable and pasture. As the valleys are susceptible to flooding, the field patterns tend not to extend into the base of the valley.

119. Mature hedgerows, and small parcels of native deciduous hedgerows give this area a well wooded feel and mature oak trees form prominent landscape features within the dispersed woodlands, many of which clad the valley sides. The tall and mature nature of these hedgerows has a strong visual impact on the landscape. The woodland cover is largely semi-natural.
120. To the east of the onshore cable route, the completeness and connectivity of the hedgerow network varies, with some field boundaries consisting of mature hedgerows supported by mature trees, and some without any field boundaries at all or with post and wire fencing. To the west of the route in this section, the hedgerows are mainly intact.
121. Access in the area is by minor, mainly single track roads, and through a network of footpaths which generally follow field boundaries. Roadside hedgerows are a strong feature, particularly in the west of the route corridor. To the east of the route corridor there are a mixture of open roadsides with no hedgerows and mature hedgerows with mature trees. There is a long distance walking route along the Fynn valley.
122. Settlement in the area consists of several tightly clustered small villages and farmsteads that appear relatively isolated. Villages are generally situated on elevated or sloping ground within the River Fynn valley. This is a feature of the Rolling Valley Farmlands and Furze LCT where there is evidence of settlements on valley sides from a very early date with several archaeological settlement remains in the wider LCT area.
123. Although it is essentially an agricultural landscape, views within the study area frequently feature properties giving the impression of a well-settled landscape. Roofscapes of small settlements and farmsteads together with overhead power lines are constant elements in views. Views within the valleys are more intimate although the tall hedgerows, woodland blocks and rolling topography also limit views outside the valley.

#### 29.2.4.13.1 Sensitivity of landscape receptors

124. The Fynn valley is a locally important landscape which is reflected by its designation as an SLA. The landscape is predominantly influenced by human activity as is evidenced in the intensively farmed landscape, as well as the presence of villages. Other elements, such as the presence of pylons, also detract from the overall value of the area which is considered to be medium to high within the study area. Susceptibility is considered to be medium owing to the potentially localised impacts and the capacity for restoration. The overall sensitivity to the proposed East Anglia THREE project is considered to be **medium to high**.

#### 29.2.4.13.2 Sensitivity of visual receptors

125. Footpaths, minor roads, a National Cycle Route and the Fynn Valley Walk occur in this section, with Little Bealings and Great Bealings the closest settlements to the onshore cable route. The edges of the settlements of Playford and Tuddenham St. Martin are also within the study area but will experience few visual impacts from the proposed East Anglia THREE project due to landform and intervening trees, hedgerows and other landscape features.
126. Public footpaths and bridleways within the study area are generally situated along field boundaries, follow the Fynn Valley and the undulating landscape beyond. They connect small settlements, rural dwellings and farmsteads. The Fynn Valley Walk forms part of a long distance route and travels along the southern edge of the study area and then north at Tuddenham St. Martin. Views vary from the footpaths with some experiencing intimate views within the valley and others experiencing relatively open views from elevated fields in the undulating agricultural landscape. Many of the field boundaries consist of hedgerows with trees which restrict or filter views in places. Recreational users of footpaths and the Fynn Valley Walk are assessed as having a **medium to high** susceptibility to change from the proposed East Anglia THREE project due to the attractiveness of the rural landscape. The views are mainly over agricultural fields and are incidental views and not views that are formally recognised for their scenic value. The value of the views is assessed as **medium**. The overall sensitivity of users of the footpaths to the proposed East Anglia THREE project is considered to be **medium to high**.
127. The onshore cable route generally follows a series of minor roads as they traverse the landscape following the Fynn Valley from east to west where they connect the settlements of south Woodbridge, Little Bealings and Tuddenham St. Martin, this section also forming part of a National Cycle Route. The onshore cable route passes under these roads and additional minor roads. Road users in cars will generally be travelling in excess of 30mph along these roads and will have a transitory view of the onshore cable route in a localised area. Susceptibility to change from the proposed East Anglia THREE project is considered to be medium to low for road users in cars along the minor road and medium for cyclists who will be travelling at a slower speed and will therefore experience the view for a longer duration. The views are mainly over agricultural fields and are incidental views and not views that are formally recognised for their scenic value. Therefore, the value of the views is assessed as medium. The overall sensitivity of road users to the proposed East Anglia THREE project is considered to be **medium** for road users in cars and **medium** for cyclists.
128. The settlements of Little Bealings and Great Bealings will experience little physical impact from the onshore cable route due to the pulling through of cables. The value of the views is assessed as medium. Residents in local houses will have a medium to high susceptibility to change from the proposed East Anglia THREE project, since it will

be a feature in the views from their primary place of residence and will pass close to the settlements. Overall sensitivity from residents in Little Bealings and Great Bealings is assessed as **medium to high**.

#### 29.2.4.14 Section 8 –Road Crossing RDX19 to Road Crossing RDX24 (A14)

129. In this section the onshore cable route passes through the rolling agricultural landscape to the north of Ipswich and the immediate east of the A14 road corridor. There are two LCTs within this section of the route:

- LCT 04 – Ancient Rolling Farmlands; and
- LCT15 – Rolling Estate Farmlands.

130. The key characteristics of the Ancient Rolling Farmlands LCT are described above in section 29.3.13. Rolling Estate Farmlands LCT are described as:

*A valley side landscape of deep loams, with parklands plantations and Ancient Woodlands*

- *Gently sloping valley sides and plateau fringes*
- *Generally deep loamy soils*
- *An organic pattern of fields modified by later realignment*
- *Important foci for early settlement*
- *Coverts and plantations with some ancient woodlands*
- *Landscape parks with a core of wood pasture*
- *Location for mineral workings and related activity, especially in the Gipping valley*

131. The onshore cable route in this section passes through approximately 3km of Ancient Rolling Farmlands LCT and approximately 2km of Rolling Estate Farmlands LCT. This is illustrated in Figure 29.4d.

132. The landscape in this section is gently rolling with large to medium sized fields. There is a sense of openness that relates to the large fields, limited enclosure and the relatively flat landscape.

133. Field patterns are irregular in formation with a mixture of angular boundaries formed from realigned older field patterns and more sinuous boundaries along roads, access tracks and watercourses, which often follow the natural contours. More medium sized fields are found around areas of settlement such as clusters of farm dwellings and loosely formed semi-rural settlements. This is most noticeable around Arkenham and

echoes a more ancient field pattern and land-use, which included closes and meadows.

134. Hedgerows are intermittent along this section of the route with a mixture of intact boundaries and neglected boundaries with notable gaps. In some locations field boundaries are formed either from a grass verge or post and wire fencing. Bare earth is a frequent seasonal feature in ploughed fields.
135. A network of footpaths and minor roads provide access into the area which is predominantly experienced as a semi-rural landscape. Around Akenham, access is limited and only tracks access more remote farmsteads and properties. The A14 introduces a source of activity and noise to the western edge of this area, with its influence carrying across the surrounding landscape.
136. Settlement within the study area consists of large farmsteads and semi-rural dwellings. The settlement of Ipswich is visible in places and the settlement of Claydon is situated within the study area adjacent to the A14 to the west of the route. Overhead power lines form a prominent feature across this landscape and are visible from most locations within the study area. Views are generally of agricultural fields with scattered semi-rural dwellings and farmsteads frequently featuring as visible elements.

#### 29.2.4.14.1 Sensitivity of landscape receptors

137. There are no landscape designations within this section and the character of the landscape is defined by the intensively farmed agricultural landscape. While a pattern of enclosure exists, in parts it is sparse and this adds to the perceived openness of the landscape. Developments such as pylons and settlements further detract from the rural quality. The value of the landscape is assessed as medium. Susceptibility to change from the construction of the onshore cable route is assessed as medium to low reflecting the short term nature of these works, their localised extent and the small scale change they will incur. The overall sensitivity to the onshore cable route is assessed as **medium**.

#### 29.2.4.14.2 Sensitivity of visual receptors

138. Footpaths, minor roads, Bridleways and the A14 road corridor occur in this section of the route.
139. Public footpaths and bridleways within the study area are generally situated along field boundaries and access tracks to dispersed farms and historic halls. Views are relatively open from elevated areas in the undulating agricultural landscape. Many of the field boundaries are open with post and wire fencing or have mature or semi-mature trees with large gaps in places. Woodland is limited in this section and occurs mainly as riparian woodland along a minor water course and as shelterbelt planting adjacent to farm buildings. Recreational users of footpaths and bridleways are

assessed as having a **medium** susceptibility to change from the proposed East Anglia THREE project due to the open nature of views. The views are mainly over agricultural fields and are incidental views and not views that are formally recognised for their scenic value. The value of the views is assessed as **medium**. The overall sensitivity of users of the footpaths and bridleways to the proposed East Anglia THREE project is considered to be **medium**.

140. The onshore cable route crosses two minor roads which connect Ipswich to the south to the village of Henley and connect Westerfield to the south to Cockfield Hall to the north of the study area. The road sections traversed by the onshore cable route occur where there are views across large agricultural fields facilitated by open field boundaries. The exception is a low hedge to the west of the road to Cockfield Hall. Susceptibility to change from the proposed East Anglia THREE project is considered to be medium to low for road users along the minor road. The views are mainly over agricultural fields and are incidental views and not views that are formally recognised for their scenic value. Therefore, the value of the views is assessed as medium. The overall sensitivity of road users to the proposed East Anglia THREE project is considered to be **medium**.
141. Road users on the A14 road corridor will be travelling at approximately 60 mph and will be primarily focused on the road in front of them. Subtle changes during construction works, seen at an oblique angle on the periphery of the road for a very short duration ensures the sensitivity of A14 road-users is also **medium to low**.

#### 29.2.4.15 Section 9 –Road Crossing RDX24 (A14) to End (Substation)

142. In this section, the onshore cable route passes through the rolling agricultural landscape to the north-west of Ipswich and the immediate west of the A14 road corridor. There are four LCTs within this section of the route:
- LCT 03 – Ancient Plateau Claylands;
  - LCT 15 – Rolling Estate Farmlands;
  - LCT 18 – Rolling Valley Farmlands; and
  - LCT 26 –Valley Meadowlands.
143. The key characteristics of the Valley Meadowlands LCT and Rolling Estate Farmlands LCT are described above in sections 29.3.9.10 and 29.3.14 respectively. Rolling Valley Farmlands LCT occurs as the landscape rises to the west from the River Gipping Valley Meadowlands. It is described as:
- *Gentle valley sides with some complex and steep slopes*
  - *Deep well drained loamy soils*

- *Organic pattern of fields smaller than on the plateaux*
- *Distinct areas of regular field patterns*
- *A scattering of landscape parks*
- *Small ancient woodlands on the valley fringes*
- *Sunken lanes*
- *Towns and villages with distinctive mediaeval cores and late mediaeval churches*
- *Industrial activity and manufacture, continuing in the Gipping valley*
- *Large, often moated, houses*

144. Further west, the undulating valley sides level out and form the Ancient Plateau Claylands LCT. This is described as:

*Gently rolling heavy clay plateaux with ancient woodlands*

- *Flat or gently rolling arable landscape of clay soils dissected by small river valleys*
- *Field pattern of ancient enclosure – random patterns in the south but often co-axial in the north. Small patches of straight-edged fields associated with the late enclosure of woods and greens*
- *Dispersed settlement pattern of loosely clustered villages, hamlets and isolated farmsteads of medieval origin*
- *Villages often associated with medieval greens or tyes*
- *Farmstead buildings are predominantly timber-framed, the houses colour-washed and the barns blackened with tar. Roofs are frequently tiled, though thatched houses can be locally significant*
- *Scattered ancient woodland parcels containing a mix of oak, lime, cherry, hazel, hornbeam, ash and holly*
- *Hedges of hawthorn and elm with oak, ash and field maple as hedgerow trees.*
- *Substantial open areas created for WWII airfields and by 20th century agricultural changes*
- *Network of winding lanes and paths often associated with hedges create visual intimacy*

145. The onshore cable route in this section passes through a short section of Rolling Estate Farmlands LCT (approximately 0.5km) before crossing through the Valley Meadowlands LCT (approximately 0.75km) and entering the Rolling Valley Farmlands LCT. The route continues through the Rolling Valley Farmlands LCT for approximately 1.5km and then alternates between Rolling Valley Farmlands LCT and Ancient Plateau Claylands LCT for a further 1km before reaching the substation which is located in the Ancient Plateau Claylands LCT. This is illustrated in Figure 29.4d.
146. The landscape topography is more complex to the east as it passes from the transitional edge of the Rolling Valley Farmland into the more intimate River Gipping valley and then into the undulating valley sides, before reaching the relatively simple plateau in the west.
147. The land use pattern, although predominantly agricultural, also reflects the complexity of the topography. Large fields to the immediate west of the A14 give way to smaller scale fields interspersed with woodland as the landscape falls towards the base of the valley. At the base of the valley around the location of the onshore cable route crossing, there are a mixture of land uses. A rail line bisects the valley bottom and to the east of the rail line, the River Gipping meanders forming an informal edge to the meadowlands and small fields at either side of the river. To the west of the rail line, a series of ponds and formal / informal woodland planting create the designed landscape of Suffolk Water Park. The rising landscape to the west features irregular shaped medium to large scale fields, which continue into the plateau landscape, becoming smaller in scale at the edges of settlements.
148. Although hedgerows are still a characteristic feature of the landscape in this section of the route, there are few hedges that remain intact. Many of the field boundaries are a mixture of intact areas of hedgerow with mature trees, areas with some gaps or occasional trees, and large sections with no hedgerow. Other vegetation in the area includes scattered parcels of ancient woodland parcels, particularly in the Gipping valley area. Arable crops fill the fields apart, from seasonally when bare earth is ploughed.
149. There is a network of winding lanes and footpaths in the west of the area. To the east, additional communications include the busy A14 and the rail line through the valley. Pylon lines also form linear man-made features in the landscape and cross through the surrounding countryside as they converge on the existing substation at Bramford. Other man made features in the landscape include quarries, industrial development and landfill.
150. Views are extensive, particularly on higher ground. Small woodland blocks and sections of hedgerow are seen in many views and can limit views in lower lying areas. Overhead transmission lines and pylons are seen on the skyline in most views within the study area.



#### 29.2.4.15.1 Sensitivity of landscape receptors

151. The Gipping valley has a local SLA designation, indicating its local value in terms of landscape character. Elsewhere arable fields are the predominant feature with hedgerows that are not always intact. Man-made built elements within the landscape such as pylons and industrial units reduce the overall value of the landscape which is considered to be medium. Susceptibility to change from the introduction of the onshore cable route construction is assessed as medium due to open fields and incomplete hedgerows. The overall sensitivity of the landscape to the proposed onshore cable route in this area is assessed as **medium**.

#### 29.2.4.15.2 Sensitivity of visual receptors

152. Footpaths, the Gipping Valley River Path long distance footpath, Bridleways, minor roads and a National Cycle Route occur in this section of the route within the study area.
153. Public footpaths within the study area are generally situated along field boundaries although there are some which cross through open fields. The Gipping Valley River Path hugs the edge of the watercourse as the River Gipping winds through the landscape. In general, footpaths and bridleways connect areas of settlement to minor roads, dispersed farms and historic halls. Views vary from the footpaths with some experiencing intimate views in the Gipping valley and others experiencing relatively open views from elevated fields in the undulating agricultural landscape. Views include overhead transmission lines and pylons which converge at a substation at Bramford. Recreational users of footpaths and bridleways are assessed as having a medium susceptibility to change from the proposed East Anglia THREE project. Footpaths near to the substation will be susceptible to a higher level of change from the proposed East Anglia THREE project, albeit in a context which is already influenced by the presence of electricity transmission line. The views are mainly over agricultural fields and are incidental views and not views that are formally recognised for their scenic value. The value of the views is assessed as medium. The overall sensitivity of users of the footpaths to the proposed East Anglia THREE project is considered to be **medium** for the majority of the footpaths.
154. The cable route crosses under four minor roads radiating from Bramford to the north, north-west and west. The National Cycle Route follows a road west from Bramford to the village of Flowton and Elmsett beyond. The road / NCR sections traversed by the onshore cable route occur where there are views across large agricultural fields. Many of the points of crossing have an open field boundary at one side of the road. Hedgerows or mature / semi-mature trees occur along the roadside where there are no open boundaries. Frequently there are gaps in the hedgerows and trees, often with tall ruderals in-filling the gap. Susceptibility to change from the proposed East Anglia THREE project is considered to be medium for road users along the minor road. The

views are mainly over agricultural fields and are incidental views and not views that are formally recognised for their scenic value. Therefore, the value of the views is assessed as medium. The overall sensitivity of road users to the proposed East Anglia THREE project is considered to be **medium**.

#### 29.2.4.16 Substation study area

155. The substation and the surrounding 4km radius study area, are situated within predominantly agricultural land. There are six LCTs within this study area:

- LCT 01 – Ancient Estate Claylands;
- LCT 03 – Ancient Plateau Claylands;
- LCT 03 –Plateau Estate Farmlands;
- LCT 15 – Rolling Estate Farmlands;
- LCT 18 – Rolling Valley Farmlands; and
- LCT 26 –Valley Meadowlands.

156. The substation and its study area lie within Ancient Plateau Claylands LCT (described above in section 29.3.15) which forms the predominant LCT within the study area. Running through the plateau is the Rolling Valley Farmlands LCT (described in section 29.3.15) which have been formed around natural streams as they have carved through the landscape towards the River Gipping to the east of the study area and the River Orwell beyond the study area to the south-east. The River Gipping lies within the Valley Meadowlands LCT (described in section 29.3.9.10) to the east of the study area and narrow areas of Rolling Estate Farmlands LCT (described in section 29.3.14) and Plateau Estate Farmlands LCT are located to the east of the valley immediately adjacent to the urban settlement of Ipswich. To the south-east and south, the study area also includes areas of Plateau Farmlands LCT and Ancient Estate Claylands LCT. This is illustrated in Figure 29.3.

157. Plateau Estate Farmlands LCT are described as:

*A landscape of large regular fields with small woodlands on light loamy soils*

- *Flat landscape of light loams and sandy soils*
- *Large scale rectilinear field pattern*
- *Network of tree belts and coverts*
- *Large areas of enclosed former heathland*
- *18th- 19th & 20th century landscape parks*

- *Clustered villages with a scattering of farmsteads around them*
- *Former airfields*
- *Vernacular architecture is often 19th century estate type of brick and tile*

158. Plateau Farmlands LCT are described as:

*Plateaux of medium soils with a mix of 'ancient' and 'planned' countryside*

- *Plateaux of land between river valleys*
- *Loamy soils amenable to arable farming*
- *Irrigated crops*
- *Sinuuous lanes and hedge lines*
- *Substantial elements of planned landscape*
- *Plantation woodland*
- *Parkland and planting of exotic trees*
- *Feeling of isolation and tranquillity*
- *Dissected by major roads*

159. Ancient Estate Claylands LCT are described as:

*Gently rolling heavy clay plateaux with ancient woodlands and parklands*

- *Dissected Boulder Clay plateau*
- *Organic pattern of field enclosures*
- *Straight boundaries where influence of privately owned estates is strongest*
- *Enclosed former greens and commons*
- *Parklands*
- *WWII airfields*
- *Villages with dispersed hamlets and farmsteads*
- *Timber framed buildings*
- *Distinctive estate cottages*

- *Ancient semi-natural woodland*

160. The landscape within the study area is predominantly agricultural in nature with the land use pattern relating to the topography. The valley landscape and meadowlands around the River Gipping to the east of the study area are generally more enclosed and intimate in nature and comprise smaller scale fields interspersed with parcels of ancient woodland. The rising landscape to the west of the River Gipping valley features irregular shaped medium to large scale fields which continue into the plateau landscape, becoming smaller in scale along the narrow valley farmlands that follow the streams such as The Channel and Flowton Brook, in an easterly and south-easterly direction. Smaller field patterns also occur at the edges of settlements.
161. Many of the field boundaries are a mixture of intact areas of hedgerow with mature trees, areas with some gaps or occasional trees, and large sections with no hedgerow. Other vegetation in the area includes scattered parcels of ancient woodland, particularly in the Gipping valley area, and transitional arable crops in fields.
162. Communications include the busy A14 to the far east of the study area, the rail line through the Gipping valley and a network of minor roads, tracks and footpaths in the west of the area.
163. Pylon lines form linear man-made features in the landscape and cross through the surrounding countryside, converging on the existing substation at Bramford, which is itself a prominent feature in the landscape. Other man made features in the landscape include quarries, industrial development and landfill.
164. The main settlement pattern in the study area is of isolated farmsteads and small villages which are scattered throughout the landscape and often situated within the valleys (Rolling Valley Farmlands LCT). To the far east of the study area, lies the western edge of Ipswich which is visible in long views from elevated positions in the LCT. The settlements of Sproughton and Bramford extend the urban influence into the study area.
165. Views are extensive, particularly on higher ground and frequently open. Small woodland blocks and sections of hedgerow are seen in many views and can limit views in lower lying areas. Overhead transmission lines and pylons are seen on the skyline in most views within the study area.
166. The Gipping valley area has a local SLA designation, indicating its local value as a landscape feature, and there is a further SLA to the west and south of the study area relating to the village of Burstall and Burstall Hall. The overall value of the area is reduced by the presence of prominent, large-scale man-made infrastructure and industrial elements with vertical emphasis and engineered patterns. Although the landscape character is well defined in most areas, it mainly consists of arable fields which are a common resource in the wider area. In addition, there are some key

landscape elements such as hedges and hedgerow trees that have degraded over time. The overall value of the study area is therefore considered to be medium.

#### 29.2.4.16.1 Sensitivity of landscape receptors

167. Susceptibility to change from the introduction of the substation is assessed as medium reflecting the scale of the proposed East Anglia THREE project, albeit in a localised area which is characterised by the presence of a convergence of electricity transmission lines. The stanchions form prominent vertical features which are visible above the height of the surrounding woodland and which detract from the otherwise predominantly rural character. The existing Bramford Substation and consented East Anglia ONE substation are largely concealed by existing woodland such that their influence is limited to localised close range parts of the LCT. The value of the landscape is assessed as medium reflecting the agricultural character of the landscape, which is a fairly common resource in the wider area. The overall sensitivity of the landscape to the proposed East Anglia THREE substation in this area is assessed as **medium**.

#### 29.2.4.16.2 Sensitivity of visual receptors

168. Footpaths, the Gipping Valley River Path long distance footpath, Bridleways, minor roads and a National Cycle Route are situated within the 4km study area.
169. Public footpaths within the study area are generally situated along field boundaries although there are some which cross through open fields. There are two footpaths in close proximity to the proposed East Anglia THREE project, to the east and west, and a bridleway which passes in close proximity to the south. Views vary from the footpaths and bridleways, with some experiencing intimate views in lower lying areas and others experiencing relatively open views from elevated fields in the undulating agricultural landscape. Many of the field boundaries consist of hedgerows with trees which restrict or filter views in places. Shelterbelt planting and areas of woodland are a common feature and further restrict views in places. There are blocks of woodland immediately surrounding the proposed site which will provide some screening in views. Overhead transmission lines and pylons converge at the substation at Bramford and populate the landscape and skyline in the study area.
170. Representative viewpoints have been selected to represent the visual amenity of walkers, residents, road-users, horse riders and cyclists in the study area (VP 5, 6, 10, 11, 12, 15 and 16). The value of these views, along with the susceptibility of the viewers and their overall sensitivity to change is described in relation to each of these viewpoints, presented in Appendix 29.4 –Landscape and Visual Impact Assessment of Substation.

**Appendix 29.2 Ends Here**

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# East Anglia THREE Offshore Windfarm

East Anglia THREE

## **Appendix 29.3**

### Landscape and Visual Assessment of Landfall Location and Onshore Cable Route

Environmental Statement  
Volume 3

Document Reference – OEI / Volume 4 / LVIA  
assessment / Appendix 3

Author – Optimised Environment Limited  
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## **29.3 LANDSCAPE AND VISUAL ASSESSMENT OF LANDFALL LOCATION AND ONSHORE CABLE ROUTE**

### **29.3.1 Introduction**

1. This Appendix sets out the detailed assessment of the construction, operation and decommissioning phases of the landfall location and onshore cable route and their impact on the physical elements of the site and on the landscape receptors and visual receptors across the study area. It identifies those impacts that would be significant and defines their geographic extent, duration and their permanence or reversibility.
2. The findings of this assessment are reported in Scheme Wide Issues – Chapter 29 Seascape, Landscape and Visual Assessment. The Chapter sets out the potential impacts of the landfall location and onshore cable route at each stage of the project and outlines the embedded mitigation to reduce these impacts. The assessment is based on the worst case scenario as presented in Table 29.2 in Chapter 29.
3. The assessment has been carried out in accordance with the Methodology in Appendix 29.1 and makes reference to the Baseline Assessment contained in Appendix 29.2. Accompanying graphics are referenced within the text and are contained in Volume 2: Figures of the ES.
4. Further to the production of the East Anglia THREE Environmental Statement, the proposed project is considering constructing the East Anglia THREE substation in either a Single Phase or a Two Phased approach, however the export cable will be constructed in a Single Phase.
5. The LVIA assumes that the proposed East Anglia THREE project is being added to a situation in which East Anglia ONE has been constructed and is operational. The main assessment, therefore, covers the cumulative assessment of the proposed East Anglia THREE project in conjunction with East Anglia ONE. In the cumulative assessment, a further scenario is considered, in which the East Anglia THREE project is added to a situation which comprises East Anglia ONE and a future EAOW project, with the assumption, for the purposes of the assessment that a future EAOW project is considered as a relevant project within the cumulative assessment.

### **29.3.2 Potential Impacts of Landfall Location Construction**

6. For the purposes of the assessment it is assumed that the East Anglia ONE project would be installed. HDD construction works would, therefore, already have taken place at the landfall location, and as a result the impact of the East Anglia THREE construction works would be greatly reduced, requiring smaller scale of works than that required for East Anglia ONE project. As the cable ducts would already be installed, the main feature of the construction process would be construction of the transition bays and pulling through of the onshore cables.

### 29.3.2.1 Potential Impacts of Landfall Location Construction on Physical Elements

7. The sensitivity of the beach is medium to low as it mainly comprises shingle which is easy to remove and replace during the construction works. The sensitivity of the farmland is also low as the land is already modified through agricultural practices, whereby the vegetation cover is temporary in nature. The sensitivity of the cliff, and the cliff top where the Suffolk Coast Path is routed, is medium to high, as this landscape element is more sensitive and difficult to restore, although signs of erosion are already evident and development has previously taken place in this location.
8. The magnitude of change that the landfall location would have on the physical elements of the cliffs and cliff tops would be medium to low and the impact would be not significant, as the existing ducts would already be in place and no further disturbance to the cliffs or cliff tops would occur. Access onto the beach by plant would potentially be required, and the disturbance which the construction of a ramp would incur, would give rise to a medium to high magnitude of change and a significant impact, albeit short-term and localised. The impact of the construction works on the other physical elements would be not significant.
9. The impacts on the remaining elements, including the beach and the farmland, would be not significant, largely owing to the relatively low sensitivity of these physical elements and the relative ease with which they can be restored to their original state.

### 29.3.2.2 Potential Impacts of Landfall Location Construction on Landscape Character

10. The potential impacts on the landscape character of the Rolling Estate Sandlands LCT and the Suffolk Coast and Heaths AONB would be limited by the presence of the existing ducts through the cliffs and adjacent farmland. This would enable the simpler and smaller scale process of pulling through cables without HDD drilling or open-cut trenching being required. These construction operations would be relatively small in scale and sufficiently screened by intervening vegetation, especially with increase in distance, to ensure that their impacts on the LCT and the AONB would be not significant. These impacts would be localised and short term in duration.
11. The baseline assessment of the Rolling Estate Sandlands LCT, in which the landfall location is located, identified an overall medium to high sensitivity as a result of a medium to high value and a medium susceptibility.
12. The main impacts would result from the presence of machinery on and around the beach, the potential presence of a temporary ramp across the cliffs, the construction of the transition bays at the cliff top, and the establishment of the Construction Consolidation Site on the adjacent farmland.
13. While development is evident along many sections of the coastline, the potential access over the cliffs would introduce a new feature, which would appear at variance

with the coastal character, although the alterations would not be permanent and restoration would occur within the short-term. The magnitude of change on the landscape character would be medium to low. As a surface feature, albeit on the cliff side, its influence on landscape character would extend out to no more than approximately 100m to the north and south and be limited in extent beyond the cliff top to the west. While it may take a further 3 years beyond the restoration of the cliff, until the scrub and grass vegetation has re-established, the absence of the machinery and associated activity post construction would mean the magnitude of change would be reduced to low.

14. The extent of the Construction Consolidation Site combined with the presence and activity of the machinery, would form a readily apparent feature, at variance with the character of the agricultural and coastal landscapes, albeit across a localised area. The magnitude of change on the landscape character would be medium. The woodland belt to the south of the field would contain the extent of the impact in this direction, while the mature hedgerows to the north and west would screen lower level impacts, and in so doing lower the magnitude of change to medium to low beyond these boundaries.
15. The impact of the landfall location construction on landscape character would be not significant owing to the relatively small scale of the construction works, the screening effect of intervening vegetation and the reversible nature of the impact. Impacts would be short-term and localised, and the wider extent of the Rolling Estate Sandlands LCT would remain unaffected.
16. The baseline assessment of the Suffolk Coasts and Heaths AONB in which the landfall location is located, established an overall medium to high sensitivity as a result of a medium to high value and a medium susceptibility.
17. The potential impact of the landfall location on the AONB would be the same as described above in respect of the Estate Sandlands LCT which makes up this part of the AONB. This means that there would be not significant impacts as a result of the landfall location construction.

### **29.3.2.3 Potential Impacts of Landfall Location Construction on Visual Amenity**

18. The visual receptors with potential to be affected by the landfall location are walkers on the Suffolk Coast Path. The baseline assessment attributed an overall medium to high sensitivity to walkers on the path as a result of a medium to high value and a medium to high susceptibility.
19. The potential impacts on the visual amenity of walkers on the Suffolk Coast Path would be limited as the construction works would require a pull-through of the cables without HDD drilling or open-cut trenching. The construction works would be localised in a concentrated area and appear relatively small in scale. The scrubby vegetation and

other structures which lie between the Suffolk Coast Path and the beach may afford partial screening to walkers along the Suffolk Coast Path, although a section of this would potentially have been removed to allow machinery to access the beach.

20. Construction would comprise the transition bays which would occur below ground level, such that the most apparent feature would be the presence and activity of machinery. This would be perceived as having a temporary and reversible impact on visual amenity. The visible components of the construction works would be sufficiently small in scale and relatively well contained for the impacts to be not significant. The impacts would be localised and short term.

### **29.3.3 Potential Impacts of Onshore Cable Route Construction**

21. Cable pulling operations would be undertaken at up to 62 locations along the onshore cable route. At each of these locations, there would be a requirement to construct up to two jointing bays and up to four kiosks, and in addition access would be required to these locations. This would be either via haul road for isolated jointing bay locations, upgraded track access or directly from the public highway wherever possible. In some locations, removal of hedgerows and other types of vegetation would be required for the construction of the jointing bays.
22. Construction activity would be concentrated at the points where jointing bays would be constructed, as well as at the Construction Consolidation Sites and access roads and haul road. The main impacts on receptors would come from the presence and activity of the machinery. These impacts would appear largely as a temporary and impermanent feature in the landscape.

#### **29.3.3.1 Potential Impacts of Onshore Cable Route Construction on Physical Elements**

23. The use of the existing ducts to pull through the onshore cable route would notably reduce the potential impacts on the physical elements. Instead of disturbance to the vegetation and water courses occurring along most of the 37km length of the cable route, it would be concentrated in localised areas where either jointing bays would be constructed and cables pulled through, at Construction Consolidation Sites where machinery and materials would be stored and ancillary buildings located, or along the haul road where machinery and materials would be moving in and out of the sites. This would mean that the sensitive physical elements, such as the water courses, would remain largely unaffected.
24. The magnitude of change on the physical elements would be low or medium to low. The impact would be notably reduced by the existing presence of the ducts, as disturbance to, or loss of vegetation would be limited to around the jointing bays, the Construction Consolidation Sites and along the haul road. The majority of the works would take place in the less sensitive agricultural land with relatively little disturbance to the more sensitive hedgerows or woodland. Where sections of hedgerow would be

removed in relation to the haul road, CCSs and jointing bays, these would be the specimens replanted following the completion of the East Anglia ONE project and therefore would be relatively immature. Their removal would, therefore, have a lesser impact than if they were more mature and well established specimens.

25. The impact on the physical elements would be not significant owing to the relatively small proportion of the wider physical elements that would be disturbed or removed, the localised extent of the impacts and the reversibility of impacts through the reinstatement of vegetation on completion of the construction works.

### **29.3.3.2 Potential Impacts of Onshore Cable Route Construction on Landscape Character**

26. The potential impacts on landscape character would be limited by the existing presence of the ducts, whereby the pull-through process would reduce the extent to which the character of the landscape would be altered. The haul road and Construction Consolidation Sites would be a requirement and a concentration of construction activity would occur in relation to the construction of the jointing bays. The removal of hedgerows in relation to the haul road and CCSs would coincide with sections where previous removals had occurred in relation to East Anglia ONE project and, therefore, their removal would have a lesser impact than if they were more mature and well established specimens.
27. The impact on the landscape character receptors would be not significant owing to the relatively small scale of the construction works, the limited extent to which the characterising features of the landscape would be altered, the impermanent nature of the construction works, and the reversibility of any residual impacts.

### **29.3.3.3 Potential Impacts of Onshore Cable Route Construction on Visual Amenity**

28. The potential impacts of the onshore cable route on the visual amenity of the residents, road-users, walkers, horse riders, sailors and other visual receptors would arise principally from the construction of the jointing bays and the presence and activity of the haul road and CCSs and associated machinery, equipment and storage associated with the construction works.
29. While the construction works and haul road would come close to a number of PRowS, roads, settlements and rivers, the impacts would be not significant owing to the relatively small scale of the construction works, the limited visibility of the construction works across a wider area, the impermanent nature of the construction works, and the reversibility of any residual impacts.

**Table 29.1 Summary of Potential Impacts of Landfall Construction and Onshore Cable Route Construction**

Project Stage / Receptor Type	Landscape / Visual Receptors	Sensitivity	Magnitude of Change	Significance of Impact	Duration
<b>Construction of Landfall</b>					
Physical elements	Beach	Medium to low	Medium to low	Not significant	Short-term
	Cliffs / cliff top	Medium to high	Medium to high in area of access road medium to low in remaining areas	Significant in area of access route Not significant in remaining areas	Short-term
	Agricultural land	Low	Medium	Not significant	Short-term
Landscape character receptors	Rolling Estate Sandlands	Medium to high	Medium to low	Not significant	Short-term
	Suffolk Coast and Heaths AONB	Medium to high	Medium to low	Not significant	Short-term
Visual receptors	Suffolk Coast Path	Medium to high	Medium to low	Not significant	Short-term
<b>Construction of Onshore Cable Route</b>					
<b>Receptor type</b>	<b>Receptors</b>	<b>Sensitivity</b>	<b>Magnitude of change</b>	Significance	Duration
Physical elements	Agricultural land	Low	Low	Not significant	Short-term
	Marshy grassland and swamp / Calciferous grassland	Medium	Medium to low	Not significant	Short-term
	Hedgerow / Hedgerow trees	Medium to high	Medium to low	Not significant	Short-term
	Trees and woodlands	Medium to high	Medium to low	Not significant	Short-term
	Watercourses	High	Medium to low	Not significant	Short-term

Landscape character receptors		Sensitivity	Magnitude of change	Significance	Duration
Section 1	Rolling Estate Sandlands	Medium to high	Medium to low	Not significant	Short-term
Section 2	Rolling Estate Sandlands / Coastal Levels / Plateau Estate Farmlands	Medium to high	Medium to low	Not significant	Short-term
	Saltmarshes and Intertidal Flats	Medium to high	Medium to low	Not significant	Short-term
Section 3	Rolling Estate Sandlands / Estate Sandlands/ Plateau Estate Farmlands	Medium to high	Medium to low	Not significant	Short-term
	Valley Meadowlands	Medium to high	Medium to low	Not significant	Short-term
Section 4	Rolling Estate Sandlands / Estate Sandlands	Medium to high	Medium to low	Not significant	Short-term
Section 5	Valley Meadowlands / Rolling Valley Farmlands and Furze	Medium to low	Medium to low	Not significant	Short-term
Section 6	Ancient Rolling Farmlands / Rolling Valley Farmlands and Furze	Medium to high	Medium to low	Not significant	Short-term
Section 7	Ancient Rolling Farmlands / Rolling Valley Farmlands and Furze	Medium to high	Medium to low	Not significant	Short-term
Section 8	Ancient Rolling Farmlands / Rolling Estate Farmlands	Medium	Medium to low	Not significant	Short-term
Section 9	Ancient Plateau Claylands / Rolling Valley Farmlands / Valley Meadowlands	Medium	Medium to low	Not significant	Short-term
Suffolk	Saltmarsh and	Medium to high	Medium to low	Not significant	Short -



Coast and Heaths AONB	Intertidal Flats / Valley Meadowlands / Coastal Levels / Estate Sandlands / Rolling Estate Sandlands / Estate Farmlands				term
<b>Visual receptors</b>		<b>Sensitivity</b>	<b>Magnitude of change</b>	Significance	Duration
Section 1	Walkers	Medium to high	Medium to low	Not significant	Short-term
	Road-users	Medium	Medium to low	Not significant	Short-term
Section 2	Walkers	Medium	Medium to low	Not significant	Short-term
	River-users	Medium	Medium to low	Not significant	Short-term
Section 3	Walkers / horse riders	Medium	Medium to low	Not significant	Short-term
	Road-users	Medium	Medium to low	Not significant	Short-term
Section 4	Walkers / horse riders	Medium to high	Medium to low	Not significant	Short-term
	Residents	Medium to high	Medium to low	Not significant	Short-term
	Road-users	Medium	Medium to low	Not significant	Short-term
	Cyclists	Medium	Medium to low	Not significant	Short-term
Section 5	Walkers	Medium	Medium to low	Not significant	Short-term
	Residents	Medium	Medium to low	Not significant	Short-term
	Road-users	Medium	Medium to low	Not significant	Short-term
Section 6	Walkers	Medium to high	Medium to low	Not significant	Short-term
	Residents	Medium to high	Low	Not significant	Short-term
	Road-users	Medium	Medium to low	Not significant	Short-term
	Cyclists	Medium	Medium to low	Not significant	Short-term
Section 7	Walkers	Medium to high	Medium to low	Not significant	Short-term
	Road-users	Medium	Medium to low	Not significant	Short-term
Section 8	Walkers / horse riders	Medium	Medium to low	Not significant	Short-term

	Road-users	Medium	Medium to low	Not significant	Short-term
Section 9	Walkers	Medium	Medium to low	Not significant	Short-term
	Road-users	Medium	Medium to low	Not significant	Short-term

### 29.3.4 Potential Impacts of Landfall Location and Cable Route Operation

30. The operational impacts of the project would comprise limited maintenance along the landfall and onshore cable route. As a worst case scenario, it is assumed one visit per year per jointing bay would be made for maintenance purposes. Routine maintenance works during operation would either be via excavation at jointing bays or inspection of above-ground kiosks.
31. Once the construction phase is complete and the East Anglia THREE project is operational, there would be limited visible evidence of the landfall location and the onshore cable route as they would be concealed below ground surface. Kiosks, if used, would be located at each of the jointing bays and would be the only above ground feature of the onshore cable route. It is assumed that the East Anglia ONE project would also be operational and this would also be concealed below ground surface.

#### 29.3.4.1 Potential Impacts of Landfall Location and Onshore Cable Route Operation on Physical Elements

32. The potential impacts during operation on the physical elements would be **not significant**, as no further removals or alterations would occur and where gaps in hedgerows had been formed during the construction phase, during the operational phase re-planting would gradually grow to infill these gaps.

#### 29.3.4.2 Potential Impacts of Landfall Location and Onshore Cable Route Operation on Landscape Character

33. The potential impacts during operation on landscape character would be not significant as there would be no visible evidence of the constructed components, other than the intermittent, small scale and relatively discreet kiosks, and no further presence of construction works or machinery. While there would be some residual impact on landscape character and visual amenity, relating to the time required for hedgerow vegetation to re-establish, the impact would be not significant owing to the limited amount of removal which would have occurred and the gradual reduction in these impacts as the vegetation grows. These impacts would occur within localised parts of the much wider extent of the LCTs and AONB.

### 29.3.4.3 Potential Impacts of Landfall Location and Onshore Cable Route Operation on Visual Amenity

34. The potential impacts during operation on visual amenity would be **not significant**, as there would be no visible evidence of the constructed components, other than the intermittent, small scale and relatively discreet kiosks, and no further presence of construction works or machinery. While there would be some residual impacts on visual amenity relating to the time required for hedgerow vegetation to re-establish, the impact would be not significant owing to the limited amount of removal which would have occurred, the limited impacts on the visual receptors, and the gradual reduction in these impacts as the vegetation grows.

**Table 29.2 Summary of Potential Impacts of landfall Location and Onshore Cable Route Operation**

Project Stage / Receptor Type	Receptor / Project stage	Sensitivity	Magnitude of change	Significance of impact	Duration
<b>Operation of Landfall Location</b>					
Receptor type	Receptors	Sensitivity	Magnitude of change	Significance	Duration
Physical elements	Beach / Cliff / Agricultural land	Medium to low / medium to high / low	Low / negligible	Not significant	Long-term
Landscape character receptors	Rolling Estate Sandlands Suffolk Coast and Heaths AONB	Medium to high	Low / negligible	Not significant	Long-term
Visual receptors	Suffolk Coast Path	Medium to high	Low / negligible	Not significant	Long-term
<b>Operation of Onshore Cable Route</b>					
Physical elements	Agricultural land / marshy grassland / hedgerows / hedgetrees / trees / woodland / water courses	Variable between low and high	Low / negligible	Not significant	Long-term
Landscape character receptors	All LCTs Suffolk Coast and Heaths AONB	Variable between medium and medium to high	Low / negligible	Not significant	Long-term
Visual receptors	All PRoWs / Bridleways / NCRs /	Variable between medium to low and	Low / negligible	Not significant	Long-term

	minor roads / roads and railways / residential areas / rivers	medium to high			
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### 29.3.5 Potential Impacts of Landfall Location and Onshore Cable Route Decommissioning

35. It is anticipated that the landfall location and onshore cable route would be decommissioned and the cables left in-situ, while the kiosks at the jointing bays would be removed. This means that there would be no further impact on the landscape and visual receptors. Where cables would have been inserted into pre-installed ducts, it may prove possible to extract the cables relatively easily during the decommissioning phase with very limited impact on landscape and visual receptors.
36. There would be no impact on the physical elements. The magnitude of change on the landscape character areas, designated AONB and visual receptors would be low, negligible or equate to no impact. Even with variable sensitivities attributed to these receptors at the landfall location and along the length of the onshore cable route, the impacts would be not significant, owing to the relatively small scale of the decommissioning works and the anticipated low magnitudes of change.

**Table 29.3 Summary of Potential Impacts of Landfall Location and Onshore Cable Route Decommissioning**

Project Stage / Receptor Type	Receptor / Project stage	Sensitivity	Magnitude of change	Significance of the impact	Duration
Decommissioning of Landfall Location					
Receptor type	Receptors	Sensitivity	Magnitude of change	Significance	Duration
Physical elements	Beach / Cliff / Agricultural land	Medium to low / medium to high / low	Low / negligible	Not significant	Short-term
Landscape character receptors	Rolling Estate Sandlands Suffolk Coast and Heaths AONB	Medium to high	Low / negligible	Not significant	Short-term
Visual receptors	Suffolk Coast Path Ferry Road	Medium to high / medium	Low / negligible	Not significant	Short-term

Decommissioning of Onshore Cable Route					
Receptor type	Receptors	Sensitivity	Magnitude of change	Significance	Duration
Physical elements	Agricultural land / marshy grassland / hedgerows / hedgetrees / trees / woodland / water courses	Variable between low and high	Low / negligible	Not significant	Short-term
Landscape character receptors	All LCTs Suffolk Coast and Heaths AONB	Variable between medium and medium to high	Low / negligible	Not significant	Short-term
Visual receptors	All PRoWs / Bridleways / NCRs / minor roads / roads and railways / residential areas / rivers	Variable between medium to low and medium to high	Low / negligible	Not significant	Short-term

### 29.3.6 Cumulative Impacts of Landfall Location and Onshore Cable Route

37. East Anglia THREE project would not give rise to significant cumulative impacts in respect of the landfall location or onshore cable route. The onshore construction phases for East Anglia ONE project, East Anglia THREE project and a future EAOW project would not coincide. The construction phase of East Anglia THREE, in respect of all cumulative scenarios, would take place either when the other projects did not exist or were operational. If they were operational, there would be little visible evidence of the landfall location or the onshore cable route, as the components of both would be largely concealed below ground. The addition of East Anglia THREE to either of these situations would therefore be not significant. As the significant impacts all relate to the construction phase and the construction phases would not coincide, all impacts during the construction phase would be solely attributable to East Anglia THREE, with no cumulative impacts arising.

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### **Appendix 29.3 Ends Here**

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# East Anglia THREE Offshore Windfarm

East Anglia THREE

## **Appendix 29.4**

### **Substation Landscape and Visual Assessment**

**Other Environmental Information  
Volume 3**

**Document Reference – OEI / Volume 4 / LVIA  
assessment / Appendix 4**

Author – Optimised Environment Limited  
East Anglia THREE Limited  
Date – July 2016  
Revision History – Revision B

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## 29.4 LANDSCAPE AND VISUAL ASSESSMENT OF THE SUBSTATION

### 29.4.1 Introduction

1. This Appendix sets out the detailed assessment of the construction, operation and decommissioning phases of the substation and its impact on the physical elements of the site and impacts on landscape and visual receptors across the study area. It identifies those impacts which would be significant, and defines their geographical extent, their duration and their permanence or reversibility.
2. The findings of this assessment are reported in Scheme Wide Issues – Chapter 29 Seascape, Landscape and Visual Assessment. Chapter 29 sets out the potential impacts of the substation at each stage of the project and outlines the embedded mitigation to reduce these impacts. The assessment is based on the worst case scenario as presented in Table 29.2 of Chapter 29.
3. The assessment has been carried out in accordance with the Methodology set out in Appendix 29.1 and makes reference to the Baseline Assessment contained in Appendix 29.2. Accompanying graphics are referenced in the text and are contained in Volume 2: Figures of the ES. The graphics show the baseline photographs of the representative viewpoints, accompanied by computer generated models of the substation and photomontages for five of the closest range viewpoints.
4. This Appendix contains an assessment of the impacts of the substation on the physical elements, landscape character and visual amenity, during the stages of construction, operation and decommissioning.
5. The assessment assumes that the proposed East Anglia THREE project is being added to a situation in which East Anglia ONE has been constructed and is operational. Note that for the purposes of this assessment, the dimensions of the East Anglia ONE substation are taken from the East Anglia ONE Offshore Wind Farm (Corrections and Amendments) Order 2016. Within this context the LVIA considers two approaches to construction;
  - Single Phase approach in which the East Anglia THREE substation is constructed in one phase; and
  - Two Phased approach in which the East Anglia THREE substation is constructed in two phases, comprising two buildings of equal dimensions.
6. Chapter 5 Description of the development sets out two alternatives to the electrical solution to be used. The implications of these alternatives are described in Section 29.1.2 below, although essentially for the purposes of the assessment, the substations will be the same dimensions.

7. In the cumulative assessment a further scenario is considered in which the East Anglia THREE substation is added to a situation which comprises East Anglia ONE and a future East Anglia project's substation, with the assumption, for the purposes of the assessment that a future East Anglia project is considered as a relevant project within the cumulative assessment.

#### **29.4.1.1 Study Area**

8. The Study Area for the substation has been set at a 4km radius from the edge of the substation location. This was applied in the assessment of the East Anglia ONE substation and has been agreed with the local authorities in respect of East Anglia THREE (Table 29.1 of Chapter 29). Impacts would occur during the construction, operation and decommissioning stages.
9. Initial studies conducted as part of the East Anglia ONE LVIA (EAOL 2012), tested visibility within a 6km radius from the centre of the substation, but found that - owing to the extent of intervening mature woodland, tree belts, hedgerows, and, in fewer instances, buildings - it would be unlikely for significant impacts to arise beyond the 4km radius.

#### **29.4.1.2 Substation Description**

10. The LVIA considers two sets of alternatives, the first in respect of the proposed electrical solution to be applied, and the second in respect of the proposed process of phasing.
11. East Anglia THREE are currently considering both a High Voltage Direct Current (HVDC) and a Low Frequency Alternating Current (LFAC) electrical solution for the proposed East Anglia THREE project. The key difference of relevance to this assessment is that the LFAC solution would require a compound area for the onshore substation of 160m x 190m while for the HVDC solution it would be 150m x 190m. For both solutions the building dimensions would be 85m x 116m x 25m height. As the LFAC solution presents the worst case scenario in respect of the potential impacts, the larger compound dimensions will be used as the basis of the assessment and this is what is shown in the accompanying graphics. A detailed description of the electrical solutions is presented in Chapter 5 Description of the Development.
12. East Anglia THREE are currently considering constructing the project in either a Single Phase or a Two Phased approach. In the Single Phase approach, the project would be constructed in one single build period lasting approximately 41 months. Under a Two Phased approach the project would be constructed in two phases, with the construction of Phase 2 starting a maximum of 18 months after the start of the onshore construction of Phase 1 giving an overall construction period lasting approximately 45 months.

13. The differences between the Single Phase and Two Phased approach only affects the assessment of the impacts relating to the construction of the proposed project. The impacts during operation and during decommissioning would be the same regardless of whether the proposed project was constructed in one or two phases. The assessment, therefore, only considers the difference between the Single Phase and Two Phased approach during construction.
14. It is assumed in the assessment that East Anglia ONE is constructed and is operational and that the proposed East Anglia THREE project would be added to this baseline situation. In the cumulative assessment a further scenario is considered in which East Anglia THREE is added to a situation which comprises East Anglia ONE and a future East Anglia project, with the assumption, for the purposes of the assessment that a future East Anglia project is also to be considered as a relevant project within the cumulative assessment. It should be noted that, whilst this is in accordance with GLVIA 3 guidance, the scenario does not represent a realistic one and does not reflect cumulative construction assessment undertaken in other chapters of the East Anglia THREE Environmental Statement.

#### **29.4.1.3 Embedded Mitigation**

15. Embedded mitigation forms an integral part of the proposal and moderates the worst case scenario. Mitigation measures are referenced in Table 29.3 of Chapter 29, highlighting where landscape elements are to be retained or restored.
16. Landscape works agreed to be undertaken as part of East Anglia ONE also form embedded mitigation. These works comprise planting and bunding and are summarised below. The detail of the works is covered in the East Anglia ONE Landscape Masterplan (July 2016) and East Anglia ONE Landscape Management Plan DCO Requirement 12 Work No 38 to 41 (2016) produced by ScottishPower Renewables.
17. Embedded mitigation for the proposed East Anglia THREE project has assumed the pulling through of cables into ducts already installed as part of East Anglia ONE. This would minimise the impacts on both landscape character and visual amenity. Overhead electricity transmission lines would have a much greater effect on both landscape character and visual amenity owing to the prominence of the supporting pylons as structures in the landscape, either appearing at variance with the rural character where other pylons are not present or adding to the cumulative impact where they are, especially around the existing Bramford Substation and East Anglia ONE substation location where there is already a concentration of pylons.
18. The pulling through of the onshore cables is the most important mitigation measure undertaken, as it also notably reduces the potential for impacts when compared with the alternative processes of open-trenching and HDD. The potential for significant



impacts during the short term of the construction and decommissioning stages and the long term of the operational stage are greatly reduced by the pull through process along the onshore cable route.

19. Mitigation planting proposed for East Anglia ONE includes substantial woodland planting to screen the East Anglia THREE substation. The planting to be implemented as part of East Anglia ONE is to the south-west, immediate north and east of the East Anglia THREE substation. Further planting to be implemented as part of East Anglia THREE is to the north and north-east. While existing woodland currently screens those aspects to the west, north-west and north-east, the mitigation planting would largely infill the gaps to ensure East Anglia THREE substation location would eventually be enclosed from almost all visual aspects. The planting to the north would include the planting of a 10m wide woodland strip within the 15m adjacent to the western edge of the existing Gobert's Grove woodland to the north east of the East Anglia THREE substation to mitigate potential ash dieback. This would be located within the site boundary and its purpose would be to ensure the long term screening effect in respect of views from the north and north-east, regardless of the condition of the existing woodland at Gobert's Grove. Details of this planting proposal is contained in the East Anglia THREE OLEMS.
20. The mitigation planting to the south-west would be set on a 4m high earth-bund and to the north on a 5m high earth-bund, which would add to the height of the trees, relative to the height of the substations.
21. The mitigation planting would be designed to comprise a mix of faster growing 'nurse' species and slower growing core 'species'. The core species would comprise a mix of preferred native species that would outlive the nurse species and characterise the woodland structure over the longer term. It is anticipated that the growth rate of these species would be 200-300mm per annum taking into account the clay soils and the 'made' nature of the land. The nurse species would be faster growing and shorter-lived, providing shelter to bring on the core species. The mix may contain species such as alder, birch, poplar and rowan, with average growth rates of 400mm per annum. It is anticipated that 6m growth would take 15 years and that at the end of the 25-year consent period the trees would have reached approximately 11m (assuming planting height of 1m). The nurse species would be sufficiently fast growing to provide substantial screening of the East Anglia THREE substation towards the last 5 to 10 years of the consent period.
22. It is anticipated that the construction of East Anglia ONE, including mitigation planting, would commence in 2017. As the construction of the proposed East Anglia THREE project is due to commence at the earliest between 2020 and 2025, the mitigation planting would already have had a minimum of three years of growth which equates to approximately 1.2m in height on top of a base height of approximately 1m (for the faster growing nurse species). The mitigation planting to the south-west would be set on a 4m high bund, which would add to the relative height of the trees. This would

mean by the time the proposed East Anglia THREE project would be constructed, the nurse species in the mitigation planting would be at a relative height of approximately 6.2m in the area to the south-west, and 2.2m in the area to the east and immediate north. It is anticipated that by the end of the 25 year consent period, the planting to the south-west, immediate north and east would be at a height of approximately 12.2m, although with the bunding to the west the relative height would be 16.2m.

23. Mitigation planting proposed for East Anglia THREE includes substantial woodland planting on a bund of up to 5m to the north and further woodland planting to the north-east of the East Anglia THREE substation. This would add to the screening effect already provided by existing woodland and the narrow band of new woodland planting that would be implemented to the north as part of East Anglia ONE. The additional planting in the wider area to the north would reach a maximum height of approximately 11m after 25 years, which in association with the bunding would give a maximum height of 16m, relative to the baseline ground level. Detailed information on embedded mitigation in relation to the East Anglia THREE substation is contained within an Outline Landscape and Ecological Management Strategy (OLEMS).
24. While a proportion of the woodland, cited in the LVIA as being of importance to the screening of the proposed East Anglia THREE project, is outwith the control of East Anglia THREE limited (EATL), it is subject to the protection afforded by the Forestry Act (1967).
25. Part II of the Forestry Act 1967 is entitled 'Commissioner's Power to Control Felling of Trees' which requires those with the intention of felling trees to apply to the commissioner for a licence. There are restrictions which would be applied in the consideration of issuing such a licence and ultimately the act seeks to protect forest areas.
26. Furthermore, Millers Wood, Bullen Wood, Bushey Grove and Fore Grove are all identified as Ancient Semi-Natural Woodland in the local plan and, therefore, also as Country Wildlife Sites (CWS). While CWS are not protected under statute, their importance is recognised by local planning authorities in their consideration of related planning applications.
27. In light of the statutory protection afforded by the Forestry Act (1967) and the designation of the woodlands as CWS, it would be unlikely for these woodland areas to be intentionally removed and therefore such a scenario is not considered in the assessment.
28. It has been agreed with the Local Authorities that this LVIA should consider the baseline as at the date of production of the LVIA (i.e. without potential future effects of ash die back). Notwithstanding this, EATL has agreed to continue discussions with the Local Authorities in relation to the potential future effects of ash die back, including

considering whether it is appropriate to mitigate such effects (if any). It is recognised that the disease is having a significant impact on ash trees within the Suffolk area. Initial indications are that the existing woodlands around the East Anglia THREE substation, but outwith the site boundary, contain ash species. Further information regarding the presence, location and health of the ash trees would be required as the basis for an accurate assessment.

#### 29.4.2 Potential Impacts of Substation Construction

29. For the purpose of the assessment, it is assumed that East Anglia ONE would be operational and that it would occupy the land to the immediate west of where the East Anglia THREE substation would be constructed. In respect of some receptors, this would reduce the potential impact, as the presence of East Anglia ONE substation would have an existing influence on these receptors, prior to the introduction of the East Anglia THREE substation, and the construction of East Anglia THREE would be seen in conjunction with East Anglia ONE substation, or one or both of the substations would be screened by existing woodland.

##### 29.4.2.1 Potential Impacts of Substation Construction on Physical Elements

30. The impacts as a result of the construction of the substation include the loss of agricultural land currently used for arable farming and the potential removal of a small amount of hedgerows and trees. The majority of the area would be occupied by the East Anglia THREE substation under construction, while the remainder of the East Anglia THREE substation location would be used for construction compounds, storage of materials and spoil, ancillary buildings and site access.
31. The sensitivity of the agricultural land to the impacts of the proposed East Anglia THREE project is low. Agricultural land-uses occur extensively across the surrounding area, such that the site of the substation is typical of the wider landscape and therefore of little scarcity value. The use of the site for arable farming means that the land is constantly being cultivated and the crops are not a permanent feature, and therefore easy to reinstate. The magnitude of change would be low, as the removal would be of a small proportion of a very extensive land cover, and the impact would be **not significant**, as there is no great sensitivity attached to the physical elements of this area of agricultural land.
32. There is the possibility that a small number of trees and some short sections of hedgerow would need to be removed to allow space for the construction of the substation. The sensitivity of the trees and hedgerows is medium to high. They are a common feature within the wider landscape setting and add value in terms of the enclosure they provide to the farmland and the visual interest they provide to the rural landscape. These features are relatively easy to replace although it would take 3-5

years for the hedgerows to fill the gaps, and more than 20 years for the trees to reach a height of approximately 10m. The amount which would potentially be removed constitutes only a very small proportion of the wider provision of trees and hedgerows in the surrounding landscape. Furthermore, extensive tree planting forms part of the mitigation measures set out the East Anglia ONE Landscape Masterplan (July 2016) and East Anglia ONE Landscape Management Plan (July 2016) and the Outline Landscape and Ecological Mitigation Strategy (OLEMS) for East Anglia THREE. Taking these factors into account, the magnitude of change would be low and the impact would be **not significant**, although long term and reversible.

33. This assessment applies to both the Single Phase and Two Phased approaches to construction of the substation. The same area of landcover would be removed at the outset of both the Single Phase and Two Phased approaches and therefore the magnitude of change would be the same. The impact would be **not significant** in relation to both approaches, although in respect of the Two Phased approach the impact would last for a longer period of time.

#### 29.4.2.2 Potential Impacts of Substation Construction on Landscape Character

34. The baseline assessment of the Ancient Plateau Claylands LCT in which the substation is located, identified a medium sensitivity as a result of a medium value and a medium susceptibility.
35. Existing woodland blocks around the site would screen much of the construction works from parts of the surrounding landscape, especially to the north-west, west and north-east. To the south, the presence of Bramford Substation already has an influence on landscape character and surrounding woodland would screen the construction works of East Anglia THREE substation from this direction. From the remaining areas, those aspects of the construction works, which are most likely to give rise to impacts on landscape character would include the movement of machinery in and out of the site, the presence of cranes on the site, the presence of the emerging substation and the use of temporary lighting outwith daylight hours.
36. The construction would be seen in the context of a site where energy infrastructure is an existing component and where the tall structures of the electricity pylons are a readily apparent feature. The emerging substation and associated construction activities would, nonetheless, form a notable addition that would influence the character of the immediate surrounding landscape. The scale and mass of the emerging substation, combined with the activity of the construction works, means that from those parts of the LCT within close proximity, the substation construction would appear as a large scale feature which would be at variance with the scale of the rural landscape.

37. The magnitude of change would be medium to high, approximately 800m to the north, as far as Tye Lane and 800m to the east, as far as Miller's Wood. Despite some enclosure occurring in these directions, the relative openness of the landscape means that the influence of the construction works would have a notable impact. To the south-west, the presence of East Anglia ONE substation and Bramford Substation would already have an influence on landscape character, and although larger in scale and more solid in form, its location behind East Anglia ONE substation would moderate the additional influence East Anglia THREE substation would have on landscape character. To the south-west the magnitude of change would be medium. The magnitude of change would be low in the other directions owing to the screening effect of the existing woodland and Bramford Substation and the partial screening from the East Anglia ONE substation.
38. The impact of the substation construction on the landscape character of the Ancient Plateau Claylands LCT would be **significant** out to a range of 800m to the north and east, although reversible and lasting only the short-term duration of the construction phase. Impacts on the remaining parts of the Ancient Plateau Claylands LCT would be **not significant**.
39. This assessment applies to both the Single Phase and Two Phased approaches, with the predicted significant impacts occurring for a shorter period of time in respect of the Single Phase approach and a longer period of time during the two separate construction periods of the Two Phased approach.

#### 29.4.2.3 Potential Impacts of Substation Construction on Visual Amenity

40. An initial assessment to consider the potential impacts of the substation on the viewpoints is presented in *Table 29.4/1* below. Many of the viewpoints are discounted from the assessment owing to the limited extent to which East Anglia THREE substation is visible, either as a result of distance, the screening effect of intervening woodland or the partial screening effect of Bramford Substation. In these instances, the impacts are assessed as not significant. The shaded cells in the table indicate which viewpoints are to be assessed in detail.

**Table 29.4/1. Potential Impacts on Visual Amenity**

Visual Receptor	Potential Impacts
VP 1- Offton Road, near Elmsett Village	East Anglia THREE substation and East Anglia ONE substation would be distant and partially screened by intervening woodland.
VP2 – Flowton Village	East Anglia THREE substation and East Anglia ONE substation would be partially screened by intervening woodland.
VP3 –Flowton to Burstallhill Minor Road	East Anglia THREE substation and East Anglia ONE substation would be partially screened by intervening woodland.
VP4 – Minor Road to Hintlesham Priory	East Anglia THREE substation and East Anglia ONE substation would be screened by intervening woodland.
VP5 – Orchard Lands, near Canes Farm	East Anglia THREE substation would be visible to the rear of East Anglia ONE substation with screening from close range hedgerows and partial screening from more distant tree cover. There would be the potential for a significant impact.
VP 6 – PROW 147/006/0, near Hill Farm	East Anglia THREE substation would be visible to the rear of East Anglia ONE substation with screening from close range hedgerows and partial screening from more distant tree cover. There would be the potential for a significant impact.
VP7 - Burstall	East Anglia THREE substation and East Anglia ONE substation would be partially screened by intervening woodland and seen set partially below the skyline.
VP8 – A1071, near Valley Farm	East Anglia THREE substation and East Anglia ONE substation would be distant and screened by intervening woodland.
VP9 – Thornbush Hall	East Anglia THREE substation and East Anglia ONE substation would be screened by intervening woodland.
VP 10 – PRoW 155/047/0, near Fidgeon’s Farm	East Anglia THREE substation and East Anglia ONE substation would be visible from this viewpoint with the potential to give rise to a significant impact.
VP 11 – PRoW 155/002/0, near Bullenhall Farm	East Anglia THREE substation and East Anglia ONE substation would be visible from this viewpoint with the potential to give rise to a significant impact.
VP12 – PRoW 155/003/0, near Tye House	East Anglia THREE substation and East Anglia ONE substation would be visible from this viewpoint with the potential to give rise to a significant impact.
VP13 – Tye Lane	No visibility of East Anglia THREE substation.
VP14 – Valley Road, near Nettlestead	East Anglia THREE substation and East Anglia ONE substation would be distant and partially screened by intervening woodland.
VP15 – Church Hill, near Canes Farm	East Anglia THREE substation and East Anglia ONE substation would be screened by intervening woodland.
VP16 – PRoW 155/003/0, north-east of site	East Anglia THREE substation would be screened by intervening woodland.

#### **29.4.2.4 Potential Impacts of Substation Construction: Viewpoint 5 – Orchard Lands, near Cane Farm**

##### **29.4.2.4.1 Viewpoint description**

41. This viewpoint is located offset from the minor road that connects Burstall and Burstalhill, marked on OS mapping as Church Hill. It is located on the eastern side of the road at a gated entrance to the adjacent fields, opposite the small group of properties including Orchard Lands, to the south of Canes Farm. Views from the minor road are screened by the hedgerow which is almost continuous along the eastern edge of the road. The existing Bramford Substation is not readily visible to road-users, although the electricity transmission pylons are readily apparent above the enclosure of the hedgerow. Views of residents from their ground floor and garden grounds are similarly limited by the intervening hedgerow, although fuller views will be available from the upper floors. The orientation of the majority of residents' views is east or north-east towards Bramford Substation.
42. The view looks out over the adjacent arable fields, its extent contained by the enclosure of mature tree cover and woodland through the middleground, with Bushey Grove visible left of centre and Bullen Wood, right of centre. The landform is relatively flat and the view lacks any distinct landscape features. The focal feature of the view is the Bramford Substation and associated electricity transmission lines. In the predicted baseline it is also assumed that East Anglia ONE substation would be operational, and although largely screened by intervening tree cover, components would be visible above the tree tops. The presence of the substations and pylons establish electrical developments as an integral part of the baseline view, largely owing to the scale of the pylons relative to the scale of the surrounding landscape and their industrial character relative to the underlying rural character.

##### **29.4.2.4.2 Value**

43. The value of this view is limited by the fact that it is not taken from a recognised viewpoint, nor is it representative of a location people would visit with the intention to enjoy views. It is a view that would be experienced by residents from the upper floors of their homes, albeit at an oblique angle to the principal orientation. The landscape in the view is not subject to any national or local landscape designations, which would otherwise denote a special sensitivity and the view is typical of the wider agricultural landscape, lacking any special features or attributes. The value of the view is medium.

##### **29.4.2.4.3 Susceptibility**

44. The susceptibility of residents would be typically medium to high owing to their awareness of their surroundings combined with the length of time they would be exposed to views. In respect of this particular context, the experience of residents is already influenced by the existing presence of the pylons, Bramford Substation and

East Anglia ONE substation. With these structures forming an established part of the baseline view, the susceptibility of residents to the construction of the East Anglia THREE substation would be reduced to medium, as their expectations of experiencing an undeveloped landscape would already be reduced. Furthermore, their views would be largely confined to the upper floors of their properties and seen at an oblique angle to the principal orientation of the views.

#### 29.4.2.4.4 Sensitivity

45. The combination of the ratings for the value of the view and the susceptibility of viewers to the potential change, leads to an overall medium sensitivity.

#### 29.4.2.4.5 Magnitude of change for the Single Phase approach

46. For the purpose of the assessment, it is assumed East Anglia ONE substation would be operational and, although mostly screened by the intervening tree cover, some components would be visible above the tree tops. The construction of the East Anglia THREE substation would occur to the rear of the East Anglia ONE substation. The intervening tree cover would screen most of the lower level construction works, while the middle and higher level works would be readily apparent, including the emergence of the converter hall or substation hall structure and the tall cranes needed for its construction.
47. While the construction of East Anglia THREE substation would increase the influence that energy developments would have in this view, it would not redefine the character of this view for the following principal reasons. Firstly, the construction of East Anglia THREE substation would be seen in the context of East Anglia ONE substation, Bramford Substation and associated electricity transmission lines. This means that it would not be seen as a new or unfamiliar feature in this view, but instead, as an extension to an existing land use. Secondly, the construction of East Anglia THREE substation would be approximately 1.04km from the viewpoint and at this distance, the influence of the construction works would be moderated by the separation space. Thirdly, the scale of the construction works compared with the closer range trees, wooden pole and adjacent pylons, would act to reduce the perceived scale of the substation. Even the tall cranes used would be seen comparable to the scale of the pylons. Fourthly, the construction of the East Anglia THREE substation would occupy a small portion of the 72-degree view and an even smaller proportion of the wider 360 degree view. While, it would increase the extent of energy developments to the left of Bramford Substation, it would be seen as relatively compact in comparison, especially as there would be no additional pylons being constructed.
48. In considering the wider extent this viewpoint represents, views from the minor road, lower ground floors and garden grounds would be likely to be screened by intervening hedgerows and, therefore, much more limited than is shown in the photomontages. While views from the upper floors would potentially show a view similar to that photo-



montaged, the orientation for most properties would be more towards Bramford Substation, such that East Anglia THREE substation would not form the main feature.

49. Taking all these factors into account, the magnitude of change would be medium.

#### 29.4.2.4.6 Significance of the effect for the Single Phase approach

50. The impact of the construction stage of the substation on this view would be **not significant**. The medium sensitivity of the viewpoint, combined with the medium magnitude of change, ensures that the impacts of the construction works would not redefine the character of the view. The impact would be short term and reversible.

#### 29.4.2.4.7 Magnitude of change for the Two Phased approach

51. In the Two Phased approach to construction it would be the converter hall or substation hall closest to East Anglia ONE that would be constructed during phase one and then the converter hall or substation hall adjacent to the east that would be constructed during phase two. The impact of the construction of phase one would have the same impact as the Single Phase assessed above, as the construction would be seen at the same minimum range from the viewpoint. As phase two construction would occur directly behind the first half of the converter hall or substation hall, this would have a lesser impact as much of the construction works would be screened.

#### 29.4.2.4.8 Significance of the effect for the Two Phased approach

52. The impact of phase one would equate to the same impact assessed in the Single Phased approach, while the impact of phase two would be less, although in both instances still amounting to a **not significant** effect. Overall, the duration of the impact of the Two Phased approach would be increased over a longer period of time, albeit still short term and reversible.

### 29.4.2.5 Potential Impacts of Substation Construction: Viewpoint 6 – PRoW 147/006/0, near Hill Farm

#### 29.4.2.5.1 Viewpoint description

53. This viewpoint is located on the PRoW to the north of Hill Farm. The farm is accessed from the minor road that connects Burstall to Hadleigh, along a track forking from the sharp corner at Church Hill. The enclosure of hedgerows and tree cover limits visibility from the minor road, while the screening of the built form limits visibility from around Hill Farm. From the PRoW an open aspect occurs to the east and this allows uninterrupted views across the adjacent farm field. Trees and hedgerows, which define the far side of the farm fields, create some sense of enclosure.
54. The view is contained within the relative close range by the tiers of field boundaries which enclose the farm land. While Bushey Grove forms a substantial woodland block to the left of centre, there are few other notable landscape features. The view is

characterised by the large number of electricity transmission pylons, which converge at Bramford Substation, their tall vertical form setting them high above the cover of the trees. Parts of the Bramford Substation are visible to the right of the view, above and between the enclosure of the field boundary.

#### 29.4.2.5.2 Value

55. The value of this view is limited by the fact that it is not taken from a recognised viewpoint, nor is it representative of a location people would visit with the intention to enjoy views. It is an incidental view that would be experienced by walkers passing along the PRoW. The landscape in the view is not subject to any national or local landscape designations which would otherwise denote a special sensitivity and the view is typical of the wider agricultural landscape, lacking any special features or attributes. The value of the view is medium.

#### 29.4.2.5.3 Susceptibility

56. The susceptibility of walkers would be typically medium to high owing to their awareness of their surroundings combined with the length of time they would be exposed to views. In respect of this particular context, the experience of walkers is already influenced by the existing presence of the electricity transmission lines and pylons. With these structures forming an established part of the baseline view, the susceptibility of walkers to the construction of the East Anglia THREE substation would be reduced to medium, as their expectations of experiencing an undeveloped landscape would already be reduced.

#### 29.4.2.5.4 Sensitivity

57. The combination of the ratings for the value of the view and the susceptibility of viewers to the potential change, leads to an overall medium sensitivity.

#### 29.4.2.5.5 Magnitude of change for the Single Phase approach

58. For the purpose of the assessment it is assumed East Anglia ONE substation would be operational. Although mostly screened by the intervening tree cover, components of the electrical infrastructure would be partly visible above the tree tops. The construction of East Anglia THREE substation would occur largely to the rear of the East Anglia ONE substation, although in the photomontage the visible components of East Anglia ONE are seen to the right, as well as the fore. The intervening tree cover would screen the majority of the ground level construction works, with the middle and higher level works being visible between and above the intervening trees. The most apparent features would be the emergence of the substation hall roof structure and the tall cranes needed for its construction.
59. The construction works would be seen to be located in an area where there is already a concentration of pylons, as well as two existing substations. It would, therefore, not

appear as a new or unfamiliar feature in this view, but would add to the concentration of energy infrastructure in this location. While the emerging structure of the East Anglia THREE substation would be in close alignment with the East Anglia ONE substation, it would be more apparent owing to the larger scale and more solid form of the emerging structure. It would be partially screened by the intervening trees, which, owing to their closer range, would present a scale comparison in which the emerging converter hall, or substation hall, would appear smaller than it actually is. This perception would be further reinforced through a comparison between the substation and the surrounding pylon towers. From the distance of 0.67km, the construction works would not appear close in range, although the presence of cranes and the emerging structure would be apparent.

60. Taking these factors into account, the magnitude of change would be medium.

#### 29.4.2.5.6 Significance of the effect for the Single Phase approach

61. The impact of the construction stage of the substation on this view would be **not significant**. The medium sensitivity of the viewpoint, combined with the existing presence of pylons, Bramford substation and East Anglia ONE substation, as well as the partial screening by the tree cover, ensures that the impacts of the construction works would not redefine the character of the view. The impact would be short term and reversible.

#### 29.4.2.5.7 Magnitude of change for the Two Phased approach

62. In the Two Phased approach to construction it would be the converter hall or substation hall closest to East Anglia ONE that would be constructed during phase one and then the converter hall or substation hall adjacent to the east that would be constructed during phase two. The impact of the construction of phase one would have the same impact as the Single Phase assessed above, as the construction would be seen at the same minimum range from the viewpoint. As phase two construction would occur directly behind the first half of the converter hall or substation hall, this would have a lesser impact as much of the construction works would be screened.

#### 29.4.2.5.8 Significance of the effect for the Two Phased approach

63. The impact of Phase One would equate to the same impact assessed in the Single Phased approach, while the impact of Phase Two would be less, although still amounting to a **not significant** effect. Overall, the duration of the impact would be increased over a longer period of time, albeit still short term and reversible.

### **29.4.2.6 Potential Impacts of Substation Construction: Viewpoint 10 – PRoW 155/047/0, near Fidgeons Farm**

#### **29.4.2.6.1 Viewpoint description**

64. This viewpoint is located on the PRoW to the west of Fidgeon's Farm. The farm is accessed from the minor road that connects Bramford Village with Bramford Substation. The minor road passes through the valley where the containment of the landform, coupled with the intermittent enclosure by tree cover, limits visibility of the substation from this route.
65. Fidgeon's Farm and the PRoW which passes through it, sit at a higher elevation above the valley, thus, affording clearer views towards the west where the substation would be situated. The farm has a commercial function as a hire centre for farm and construction vehicles. The farm buildings are orientated northwards and views westwards are largely blocked by the buildings themselves.
66. The extent of the view is restricted by the landform which is relatively level before falling away to the west beyond the main concentration of pylons. The block of deciduous woodland to the east of the Bramford Substation screens views and, in combination with the woodland at Bullen Farm on the right, contains the view to within a relatively close range. The woodland in the central section is lower owing to its more distant location and this ensures the pylons are readily apparent. Despite the pylons appearing as a key feature of the view, it is the communications mast which forms the principal focus owing to its much larger scale.
67. The woodland forms an important feature in this view in terms of the sense of enclosure and visual interest it provides in contrast to the open and featureless expanse of the fields. Development is also an integral feature of this view, with the tall structures of the mast and pylons readily evident in the middleground, and the vehicle hire complex visible to the rear of the viewpoint. While it is assumed in the predicted baseline that East Anglia ONE substation would be operational, the relatively small scale of the components combined with the enclosure of the intervening tree cover means that the components would be mostly screened with a very limited chance of visibility occurring over tree tops and between gaps.

#### **29.4.2.6.2 Value**

68. The value of this view is limited by the fact that it is not taken from a recognised viewpoint, nor is it representative of a location people would visit with the intention to enjoy views. It is an incidental view that would be experienced by walkers passing along the PRoW. The landscape in the view is not subject to any national or local landscape designations which would otherwise denote a special sensitivity and the view is typical of the wider agricultural landscape, lacking any special features or attributes. The value of the view is medium.

#### 29.4.2.6.3 Susceptibility

69. The susceptibility of walkers would be typically medium to high owing to their awareness of their surroundings combined with the length of time they would be exposed to views. In respect of this particular context, the experience of walkers is already influenced by the existing presence of the electricity transmission lines, pylons and mast. With these structures forming an established part of the baseline view, the susceptibility of walkers to the construction of the East Anglia THREE substation would be reduced to medium, as their expectations of experiencing an undeveloped landscape would already be reduced.

#### 29.4.2.6.4 Sensitivity

70. The combination of the ratings for the value of the view and the susceptibility of viewers to the potential change, leads to an overall medium sensitivity.

#### 29.4.2.6.5 Magnitude of change for the Single Phase approach

71. For the purpose of the assessment it is assumed East Anglia ONE substation would be operational, although unlikely to be visible. The construction of the East Anglia THREE substation would occur to the fore of the East Anglia ONE substation, with the intervening tree cover screening the majority of the ground level construction works. The higher level works would be seen above the tree tops, including the emergence of the converter hall, or substation hall, roof structure and the tall cranes needed for its construction.
72. The construction works would be seen to be located in an area where there are already pylons and a mast, as well as an existing substation. It would, therefore, not appear as a new or unfamiliar feature in this view, but would add to the concentration of energy developments in this location. The intervening tree cover would screen the majority of the construction works, such that the most visible components would be the emerging roof structure and tall cranes. Seen at a distance of 1.1km and set well below the height of the mast and pylons, the converter hall or substation hall would form a relatively minor addition to the view. Taking these factors into account, the magnitude of change would be medium to low.

#### 29.4.2.6.6 Significance of the impact for the Single Phase Approach

73. The impact of the construction stage of the substation on this view would be **not significant**. The medium sensitivity of the viewpoint, combined with the existing presence of pylons and communications mast, as well as the partial screening by the tree cover, ensures that the impact of the construction works would not redefine the character of the view. The impact would be short term and reversible.

#### 29.4.2.6.7 Magnitude of change for the Two Phased approach

74. In the Two Phased approach to construction it would be the converter hall or substation hall closest to East Anglia ONE that would be constructed during phase one and then the converter hall or substation hall adjacent to the east that would be constructed during phase two. The impact of the construction of phase one would have a slightly lesser impact than the Single Phase assessed above, as the construction would be seen at a slightly longer range from the viewpoint and seen to occupy a slightly more contained horizontal extent.

#### 29.4.2.6.8 Significance of the impact for the Two Phased Approach

75. The impact of Phase Two would be the same as assessed in respect of the Single Phase approach, giving rise to a **not significant** impact. The impact of Phase One would be marginally less, although also still amounting to a **not significant** effect. Overall, the duration of the impact would be increased over a longer period of time, albeit still short term and reversible.

#### 29.4.2.7 Potential Impacts of Substation Construction: Viewpoint 11 – PRow 155/002/0, near Bullen Farm

##### 29.4.2.7.1 Viewpoint description

76. This viewpoint is located on the PRow which connects Bullen Lane to Tye House, via Bullenhall Farm. It is representative of the views of walkers using the PRow. There are few residential properties in the vicinity, with the exception of the farmhouse. It is unlikely to gain views of the East Anglia THREE substation owing to the enclosure by other farm buildings and tree cover, and its orientation to the south-east, rather than south-west where the substation would be located.
77. From the viewpoint, views to the east are screened by the adjacent woodland block. Views to the west are limited in extent, owing to a combination of existing woodland enclosing the low skyline and the landform falling away from this elevated plateau. The open field occupies most of the view, with woodland, tree cover and hedgerows marking the more distant edges. A collection of large sheds clusters around Bullenhall's farmyard and this adds to the impression of an intensively farmed landscape.
78. The characterising features of the view are the pylons, which are seen to approach from the north and west to converge at the Bramford Substation, which is visible to the left of the view. In the predicted baseline, the East Anglia ONE substation would be operational, and although largely screened by intervening tree cover, components would be visible rising above the tree tops to the left of centre. The pylons appear as large scale structures relative to the surrounding trees and farm buildings, while their scale is diminished relative to the mast which extends high above the pylons to the left

of the view. Although these structures are located within a rural setting, their scale and visual prominence means that they define the character of the view.

#### 29.4.2.7.2 Value

79. The value of this view is limited by the fact that it is not taken from a recognised viewpoint, nor is it representative of a location people would visit with the intention to enjoy the views. It is an incidental view that would be experienced by walkers passing along the PRow. The landscape in the view is not subject to any national or local landscape designations which would otherwise denote a special sensitivity and the view is typical of the wider agricultural landscape, in which hedgerows and ancient woodland add to the rural character. The value of the view is medium.

#### 29.4.2.7.3 Susceptibility

80. The susceptibility of walkers would typically be medium to high, owing to their awareness of their surroundings combined with the length of time they would be exposed to views. In respect of this particular context, the experience of walkers is already influenced by the existing presence of the Bramford Substation, East Anglia ONE substation, and the communications mast and pylons. With these structures forming an established part of the baseline view, the susceptibility of walkers to the construction of the East Anglia THREE substation is reduced to medium, as their expectations of experiencing an undeveloped landscape would already be reduced.

#### 29.4.2.7.4 Sensitivity

81. The combination of the ratings for the value of the view and the susceptibility of viewers to the potential change, leads to an overall medium sensitivity.

#### 29.4.2.7.5 Magnitude of change for the Single Phase approach

82. The viewpoint is a distance of approximately 0.77km from East Anglia THREE substation. This range means that there is the potential for walkers to gain clear visibility of the construction works. While the intervening trees would screen some of the ground level works, the use of cranes and the emergence of the converter hall or substation hall structure would form a notable feature.
83. For the purposes of this assessment, it is assumed East Anglia ONE substation would be operational, although not readily visible owing to the relatively small scale of the components and the screening effect of the intervening tree cover. The construction of East Anglia THREE substation would occur largely to the fore of East Anglia ONE substation, and in the absence of any substantial tree cover, would be readily visible from this viewpoint and sections of the PRow in either direction. The majority of the construction works would be apparent, including the use of tall cranes and the emergence of the converter hall or substation hall. The addition of the construction

works would give rise to a medium to high magnitude of change. Despite the pylons and mast forming notable features, visibility of the existing substations is limited, and this reduces their influence on the character of the view.

#### 29.4.2.7.6 Significance of the impact for the Single Phase approach

84. The impact of the construction stage of the substation on this view would be **significant** during the short-term duration of the construction period. This impact relates principally to the close proximity of the viewpoint to the construction works, which means that the construction works and emerging presence of the substation would add a notable feature.

#### 29.4.2.7.7 Magnitude of change for the Two Phased approach

85. In the Two Phased approach to construction it would be the converter hall or substation hall closest to East Anglia ONE that would be constructed during Phase One and then the converter hall or substation hall adjacent to the east that would be constructed during Phase Two. The magnitude of change as a result of the construction of Phase One would be slightly less than the magnitude of change assessed in respect of the Single Phase approach, as the construction would be seen at a slightly longer range from the viewpoint and seen to occupy a slightly more contained horizontal extent. These differences would not be of a sufficient scale to alter the magnitude of change rating from medium to high.

#### 29.4.2.7.8 Significance of the impact for the Two Phased Approach

86. The impact of Phase One would be **significant** as the construction works would be readily visible and seen at relatively close proximity. The impact of Phase Two would be the same as assessed in respect of the Single Phase approach, giving rise to a **significant** impact. Overall, the duration of the significant impact would be increased over a longer period of time, albeit still short term and reversible.

### 29.4.2.8 Potential Impacts of Substation Construction: Viewpoint 12 – PRow 155/003/0, near Tye House

#### 29.4.2.8.1 Viewpoint description

87. This viewpoint is located on the south edge of the hamlet around Tye House and is representative of the views of road-users on the minor road, which coincides with National Cycle Route (NCR) 1, residents in adjacent properties and walkers on the nearby PRow. The viewpoint is located at one of the few points along the village edge where an opening in the enclosing tree cover occurs. To the east and west, the tree lined edge along the adjoining field either screens or filters views. The opening allows access into the fields and marks the start of PRow 155/003/0.



88. The wider range of view is limited by the intermittent tree cover following the PRow in the left of the photograph and the edge of Tye village to the rear of the viewpoint. The remainder of the available view extends across the open farm field, which lies to the immediate south of the village. Hedgerows appear to have been removed to consolidate smaller fields into larger fields with the resultant loss of some of the enclosure and visual interest, otherwise integral to the character of the rural landscape.
89. While the landscape appears relatively flat, subtle undulations towards the Bramford Substation occur and this adds to the perceived depth of the view. Woodland blocks at differing distances almost completely enclose the skyline, the closer range trees and wooden pole helping to provide a favourable scale comparison to reduce the perceived scale of the pylons. Components of the East Anglia ONE substation would be apparent in the gap between the woodlands, which along with the Bramford Substation, visible to the left of the woodland block, adds to the concentration of energy developments visible in the view. Of those components visible, it is the electricity transmission pylons which form the main focus of the view on account of their tall vertical scale and their character appearing at variance with the rural landscape.

#### 29.4.2.8.2 Value

90. The value of this view is limited by the fact that it is not taken from a recognised viewpoint, nor is it representative of a location where people would come with the specific intention to enjoy views. The location of the view, at the start of the PRow, means that it is principally representative of walkers, although some residents and road-users may experience similar views. There are no national or local landscape designations which would denote a special sensitivity in terms of scenic value and the view is typical of the wider agricultural landscape. The value of the view is medium.

#### 29.4.2.8.3 Susceptibility

91. The susceptibility of walkers to the potential changes in their views is limited by the fact that the existing Bramford Substation, East Anglia ONE substation and electricity transmission lines form the main features of the baseline view. The pylons are large in scale and establish this type of development as an integral part of the existing view. This would lower the expectation of walkers in terms of their potential to enjoy views of undeveloped countryside. The susceptibility of walkers would be medium.
92. While owing to the orientation of the properties and the extent of intervening vegetation it is unlikely that residents would gain direct and clear views of the East Anglia THREE substation from their properties, there is the possibility they would gain filtered views from their garden grounds or the adjacent road during the winter months when the deciduous trees are bare. Residents, therefore also have a medium susceptibility.

93. There is limited potential for road-users to experience this view, with the gap being short and at a perpendicular angle to the direction of travel. While views from behind the tree belt would be either screened or filtered, especially during the winter months, they would not gain clear or sustained views and their susceptibility would therefore be low.

#### 29.4.2.8.4 Sensitivity

94. The combination of the ratings for the value of the view and the susceptibility of viewers to the potential change, leads to a medium sensitivity in respect of walkers and residents and a low sensitivity in respect of road-users.

#### 29.4.2.8.5 Magnitude of change for the Single Phase approach

95. For the purposes of the assessment it is assumed the East Anglia ONE substation would be operational and components would be visible to the right of centre in the view where the gap between the woodland blocks occurs. The construction of the East Anglia THREE substation would occur partly to the fore of the East Anglia ONE substation, making it a closer range feature in the view. While some screening would occur from the intervening woodland, the construction works would be readily visible in the gap between Bushey Grove to the right and Gobert's Grove to the left, at a distance of approximately 0.77km from the viewpoint.
96. Many of the smaller scale construction activities would not be readily apparent from this distance and with the majority of the site traffic occurring on the opposite southern side of the site, it would mainly be the larger scale operations involving the cranes and the emergence of the substation hall or converter hall that would be apparent from this viewpoint. While the substation construction would not have the same impact as if it were located in a previously undeveloped area, it would, nonetheless, add to the influence of development in this view. The magnitude of change would be medium to high.

#### 29.4.2.8.6 Significance of the impact for the Single Phase approach

97. The impact of the construction stage of the substation on this view would be **significant** to walkers and residents during the short term of the construction stage but not significant to road-users. While it would be seen as an associated extension to the existing developments, the scale and mass of the emerging building combined with the activity of the machinery would make it a readily apparent feature from this viewpoint. These impacts would extend along the PRow for approximately 100m to the north before the woodland at Gobert's Grove would screen further visibility. This impact would be short term and reversible.

**29.4.2.8.7 Magnitude of change for the Two Phased approach**

98. In the Two Phased approach to construction it would be the converter hall or substation hall closest to East Anglia ONE that would be constructed during phase one and then the converter hall or substation hall adjacent to the east that would be constructed during Phase Two. The impact of the construction of Phase One would have a slightly lesser impact than the Single Phase assessed above, as the construction would be seen at a slightly longer range from the viewpoint and seen to occupy a slightly more contained horizontal extent. These differences would not be of a sufficient scale to alter the magnitude of change rating from medium to high.

**29.4.2.8.8 Significance of the impact for the Two Phased approach**

99. The impact of Phase One would be **significant** as the construction works would be readily visible and seen at relatively close proximity. The impact of Phase Two would be the same as assessed in respect of the Single Phase approach, giving rise to a **significant** impact. Overall, the duration of the impact would be increased over a longer period of time, albeit still short term and reversible.

**Table 29.4/2 Summary of Impacts of Substation Construction**

Project Stage / Receptor Type	Landscape / Visual Receptors	Sensitivity	Magnitude of Change	Significance of Impact during Single and Two Phased approach	Duration
<b>Substation Construction</b>					
Physical Elements	Agricultural land	Low	Low	Not significant	Long-term
	Trees and hedgerows	Medium to high	Low	Not significant	Long-term
Landscape Character	Ancient Plateau Claylands: 800m to north and east,	Medium	Medium to high	Significant	Short-term
	Ancient Plateau Claylands: remaining area	Medium	Low	Not significant	Short-term
Visual Amenity	VP 5 – Orchard Lands, near Canes Farm	Medium - residents	Medium	<b>Not significant</b>	Short-term
	VP 6 – PRow 147/006/0, near Hill Farm	Medium - walkers	Medium	<b>Not significant</b>	Short-term

	VP 10 – PRow 155/047/0, near Fidgeon’s Farm	Medium - walkers	Medium to low	Not significant	Short- term
	VP 11 – PRow 155/002/0, near Bullenhall Farm	Medium - walkers	Medium	Significant	Short- term
	VP12 – PRow 155/003/0, near Tye House	Medium – walkers / residents  Low – road- users	Medium to high	Significant – walkers / residents  Not significant – road-users	Short- term

### 29.4.3 Impacts of Substation Operation

100. For the purposes of the assessment, it is assumed that the East Anglia ONE substation would be operational and that the East Anglia THREE substation would also be operational and located to the immediate west. This has an influence on the assessment of the East Anglia THREE substation because from some directions the East Anglia ONE substation would be located behind the East Anglia THREE substation, and therefore either partially or fully screened, while, from other directions, the East Anglia ONE substation would be located to the fore, and therefore both would be seen in conjunction with one another and would have potential to give rise to a cumulative impact.
101. The East Anglia THREE substation would form a readily apparent feature owing to its size and scale, with a maximum building footprint of 116 x 170m and height of 25m. The building would be solid and rendered with a dark facade. In order to represent the worst case scenario, it is assumed that the roof would comprise a double ridge structure.

#### 29.4.3.1 Potential Impacts of Substation Operation on Physical Elements

102. Once operational, there would be no further impacts, as there would be no further loss or alteration to the physical elements of the landscape. Mitigation planting, which would have been established as part of the Landscape Masterplan for East Anglia ONE and OLEMS for East Anglia THREE, would occur to the south-west, east and north of the East Anglia THREE substation. To the south-west, the trees would be planted on a 4m high earth bund which would add to the height of the screening effect and to the north on a 5m high bund. It is anticipated that the fast growing nurse species to the south-west would be approximately 2.2m high on a 4m high bund at the start of the 25 year consent period and 12.2m at the end. The nurse species at ground level to the immediate north and east, would also be 2.2m high at the start and 12.2m at the end of the 25 year consent period. To the north, the planting would be established at the start of the 25 year consent period and would therefore be 1m at the

start, growing to 11m by the end with planting to the north of East Anglia THREE substation set on a 5m high bund.

#### **29.4.3.2 Potential Impacts of Substation Operation on Landscape Character**

103. The East Anglia THREE substation would be located in the Ancient Plateau Claylands LCT and the significant impacts would occur 800m to the north and east. The reasons for these findings correlate with the assessment of the impacts on landscape character as a result of the substation construction as set out in section 29.4.2.2. These relate principally to the relative openness of the landscape to the north and east and the screening effect of existing woodland or development which occurs in the other directions to the south and west. In the area of landscape to the south-west, East Anglia THREE would be seen as an additional development, set to the rear of East Anglia ONE substation and, while its lower height would mean that the larger scale East Anglia THREE would be visible, the baseline landscape character would already be influenced by the closer range East Anglia ONE substation and adjacent Bramford Substation.
104. The establishment of mitigation planting to the north and east, as part of the Landscape Masterplan and Management Plan for East Anglia ONE project and the OLEMS for East Anglia THREE project, would limit the duration of the significant impacts to the first 15-20 years. By this time the planting would have established to a sufficient height in order to reduce the influence of the substation on the character of the immediate landscape. For the remaining 5-10 years of the consent period, the impacts on all parts of the Ancient Plateau Claylands LCT would be not significant.

#### **29.4.3.3 Potential Impacts of Substation Operation on Visual Amenity**

105. An initial assessment to consider the potential impacts of the substation construction on the viewpoints is presented in Table 29.1 above. These findings also apply to the substation operation. Many of the viewpoints are discounted from the assessment owing to the limited extent to which the East Anglia THREE substation is visible, either as a result of distance or the screening effect of intervening woodland. Other viewpoints are discounted where the influence of the existing electricity infrastructure and components associated with Bramford Substation and East Anglia ONE substation, forms a context in which the additional visibility of East Anglia THREE substation is unlikely to give rise to a significant effect. In these instances, the impacts are assessed as not significant. Viewpoints 5, 6, 10, 11 and 12 have been identified as having the potential to undergo significant impacts during operation as well as construction.

#### **29.4.3.4 Potential Impact of Substation Operation: Viewpoint 5 – Orchard Lands, near Cane Farm**

106. The viewpoint description, value, susceptibility and sensitivity of this viewpoint are described in relation to the impacts during construction in section 29.4.2.4. The sensitivity of the view in respect of residents was found to be medium.

##### **29.4.3.4.1 Magnitude of change**

107. For the purposes of the assessment it is assumed East Anglia ONE substation would be operational, although from this viewpoint the components would be largely screened by intervening tree cover. While East Anglia THREE substation would occur to the rear of East Anglia ONE substation, owing to its larger size and solid form it would be more readily apparent and would add to the overall extent of energy developments visible in the view. While existing tree cover would screen the lower parts of East Anglia THREE substation, the middle and upper part of the substation hall or converter hall would be visible.
108. While the presence of East Anglia THREE substation would increase the influence of energy developments in this view, it would not redefine the character of the view. This is principally due to the influence that Bramford Substation and the associated pylons have on this view, and in relation to which, East Anglia THREE substation would appear as an extension. The location of the emerging East Anglia THREE substation would be approximately 1.04km from the viewpoint and, therefore, would not be seen as a close range feature. The intervening trees would provide some screening as well as a scale comparison in which the trees would reduce the perceived scale of the converter hall or substation hall. Furthermore, the East Anglia THREE substation would occupy a small portion of the 72-degree view and an even smaller proportion of the wider 360 degree view.
109. In considering the wider extent this viewpoint represents, views from the minor road, lower ground floors and garden grounds would be likely to be screened by intervening hedgerows and, therefore, much more limited than is shown in the photomontages. While views from the upper floors would potentially show a view similar to that photomontaged, the orientation for most properties would typically be aligned towards Bramford Substation, such that East Anglia THREE substation would not form the main feature.
110. While nurse species in the mitigation planting would take 25 years to reach approximately 12 metres, in the interim it would bolster the existing tree planting, giving the screening effect more depth and substance. Taking all these factors into account, the magnitude of change on this view would be medium to low.

#### 29.4.3.4.2 Significance of the Impact

111. The impact of the East Anglia THREE substation on the view would be **not significant**, owing principally to the partial screening effect of the intervening tree cover and the existing influence of Bramford Substation and associated pylons. The impact would be long term and reversible.

#### 29.4.3.5 Potential Impact of Substation Operation: Viewpoint 6 – PRow 147/006/0, near Hill Farm

112. The viewpoint description, value, susceptibility and sensitivity of this viewpoint are described in relation to the impacts during construction in section 29.4.2.5. The sensitivity of the view in respect of walkers was found to be medium.

#### 29.4.3.5.1 Magnitude of change

113. For the purposes of the assessment it is assumed the East Anglia ONE substation would be operational, although from this viewpoint the components would be largely screened by intervening tree cover. East Anglia THREE substation would occur to the rear of East Anglia ONE substation, although components of the closer range East Anglia ONE would also be seen to the right of the converter hall or substation hall. East Anglia THREE substation would form an increase in the overall extent of energy developments in the view, appearing as a relatively large scale building. Existing tree cover would screen the lower parts of East Anglia THREE substation, such that only the middle and upper parts would be visible between and above the trees.
114. East Anglia THREE substation would be seen in a context in which Bramford Substation, East Anglia ONE substation and the electricity transmission pylons already have an influence on views from along this PRow. It would appear as an associated part of these existing developments and this would reduce the magnitude of change. The closer range trees and pylons, present a reference to scale which acts to reduce the perceived scale of the converter hall or substation hall. In respect of the wider view, the substation would occupy only a small proportion of the 72 degree view and smaller proportion of the wider 360 degree view.
115. While nurse species in the mitigation planting would take 25 years to reach approximately 12 metres, in the interim it would bolster the existing tree planting, giving the screening effect more depth and substance. Taking all these factors into account, the magnitude of change on this view would be medium.

#### 29.4.3.5.2 Significance of the Impact

116. The impact of the East Anglia THREE substation on the view would be **not significant**, owing principally to the screening effect of the intervening tree cover and the existing influence of development in this view, most notably the pylons, and the comparatively

lesser influence which would arise as a result of the addition of the East Anglia THREE substation. The impacts would be long term and reversible.

#### **29.4.3.6 Potential Impact of Substation Operation: Viewpoint 10 – PRoW 155/047/0, near Fidgeons Farm**

117. The viewpoint description, value, susceptibility and sensitivity of this viewpoint are described in relation to the impacts during construction in section 29.4.2.6. The sensitivity of the view in respect of walkers was found to be medium.

##### **29.4.3.6.1 Magnitude of change**

118. For the purposes of the assessment it is assumed the East Anglia ONE substation would be operational, with a very limited possibility of visibility occurring where components might be seen to extend above the intervening tree cover. East Anglia THREE substation would occur to the right of East Anglia ONE substation. Existing tree cover would screen the lower parts of East Anglia THREE substation, such that only the roof structure would be visible above the tree tops. The substation would be difficult to scale from this distance of 1.1km, especially in comparison to the much taller masts and pylons visible in this sector of the view, as well as the closer range trees, all of which would reduce the perceived scale. While East Anglia THREE substation would form an increase in the overall extent of development visible in the view, it would not form a notable feature.

119. While nurse species in the mitigation planting would take 25 years to reach approximately 12 metres, in the interim it would bolster the existing tree planting, giving the screening effect more depth and substance. East Anglia THREE substation would be seen in the context of a landscape where the interventions of pylons and a large scale communications mast, would already have an influence. Taking all these factors into account, the magnitude of change on this view would be medium to low.

##### **29.4.3.6.2 Significance of the Impact**

120. The impact of the East Anglia THREE substation on the view would be not significant owing principally to the screening effect of the intervening tree cover, the existing influence of development in this view and the comparatively small addition which the additional substation would make in respect of the existing development.

#### **29.4.3.7 Potential Impact of Substation Operation: Viewpoint 11 - PRoW 155/002/0, near Bullen Farm**

121. The viewpoint description, value, susceptibility and sensitivity of this viewpoint are described in relation to the impacts during construction in section 29.4.2.7. The sensitivity of the view in respect of walkers was found to be medium.



#### 29.4.3.7.1 Magnitude of change

122. For the purpose of this assessment, it is assumed that East Anglia ONE substation would be operational, although only partly visible from this viewpoint owing to the relatively small scale of the components and the screening effect of the intervening tree cover. East Anglia THREE substation would occur largely to the fore of East Anglia ONE substation, although components of East Anglia One would still be visible above the vegetation to the left. East Anglia THREE would be readily visible from this viewpoint and sections of the PRow in either direction. East Anglia THREE substation would appear as a large scale feature, especially in comparison to the closer range farm sheds although not in comparison to the closer range pylons. There is an absence of intervening tree cover such that the substation would be seen at almost its full extent. It would form a notable addition to the presence of energy developments in this view.
123. The magnitude of change from this viewpoint would be medium to high. Mitigation planting along the eastern side of East Anglia THREE substation would gradually reduce the magnitude of change from medium to high to medium to low as it would grow to screen the substation up towards the roof structure but this would only be after 15 years and therefore for the last 10 years of the consent period.

#### 29.4.3.7.2 Significance of the Impact

124. The impact of the East Anglia THREE substation operation on the view would be **significant** for the first 15 years and then **not significant** for the last 10 years of the 25 year consent period as mitigation planting becomes more fully established and partially screens visibility of the substation.

#### 29.4.3.8 Operation: Viewpoint 12 – PRow 155/003/0, near Tye House

125. The viewpoint description, value, susceptibility and sensitivity of this viewpoint are described in relation to the impacts during construction in section 29.4.2.8. The sensitivity of the view in respect of walkers and residents was found to be medium and in respect of road-users, low.

#### 29.4.3.8.1 Magnitude of change

126. For the purposes of this assessment it is assumed that East Anglia ONE substation would be operational and components would be visible in the centre of the view where the gap between the Bushey Grove to the left and Gobert's Grove to the right occur. East Anglia THREE substation would occur to the fore and left of East Anglia ONE substation, making it a closer range feature in the view. While some screening would occur from the intervening woodland, East Anglia THREE substation would be readily visible in the gap between Bushey Grove and Gobert's Grove. East Anglia THREE substation would, partly screen East Anglia ONE substation, such that only a group of

components to the right would be visible. In the absence of any other large scale buildings being visible in this view, East Anglia THREE substation would form a notable feature in this view.

127. The magnitude of change would be medium to high for the first 15 years of the consent as the East Anglia THREE substation would form a prominent feature in this view. For the remaining 10 years, the mitigation planting established along the northern side of the substation, would reach a sufficient height to partially screen the building and reduce the magnitude of change to medium.

**29.4.3.8.2 Significance of the Impact**

128. The impact of the East Anglia THREE substation operation would be **significant** for the first 15 years and then **not significant** for the last 10 years of the 25 year consent period as mitigation planting becomes more fully established and partially screens visibility of the substation.

**Table 29.4/3 Summary of Potential Impacts of Substation Operation**

Project Stage / Receptor Type	Receptor / Project stage	Sensitivity	Magnitude of change	Significance of impact	Duration
<b>Impacts of Substation Operation</b>					
Receptor type	Receptors	Sensitivity	Magnitude of change	Significance	Duration
Physical elements	Agricultural land Trees and hedgerows	Low Medium to high	No change		Long-term
Landscape character	Ancient Plateau Claylands: 800m to north and east	Medium	medium to high	Significant year 0-15	Long term
	Ancient Plateau Claylands: 800m to north and east	Medium	medium	Not significant year 15-25	Short term
	Ancient Plateau Claylands: Remaining areas	Medium	low	Not significant	Long-term
Visual amenity	VP 5 – Orchard Lands, near Canes Farm	Medium - residents	Medium	Not significant	Short-term

	VP 6 – PRoW 147/006/0, near Hill Farm	Medium - walkers	Medium	Not significant	Short-term
	VP 10 – PRoW 155/047/0, near Fidgeon’s Farm	Medium -walkers	medium	Not significant	Long-term
	VP 11 – PRoW Bramford 2, near Bullenhall Farm	Medium	medium year 0-15 medium to low year 15-25	Significant year 0-15 Not significant year 15-25	Long term Short term
	VP12 – PRoW 155/003/03, near Tye House	Medium – walkers / residents Low – road-users	medium to high – year 0-20 medium year 20-25	Significant year 0-20 Not significant year 20-25	Long term Short term

#### 29.4.4 Impacts of Substation Decommissioning

##### 29.4.4.1 Potential Impacts of Substation Decommissioning on Physical Elements

129. If the decommissioning of the substation does not involve the re-use of the site for future developments, the buildings would be removed. This would reduce the extent of built development and allow for the restoration of the physical elements of the agricultural landscape to take place. The magnitude of change would be low and the impacts of decommissioning on the physical elements would be not significant.

##### 29.4.4.2 Potential Impacts of Substation Decommissioning on Landscape Character

130. The East Anglia THREE substation is located in an area of Ancient Plateau Claylands LCT. The sensitivity of this LCT is considered to be medium owing to the presence of the adjacent Bramford Substation and associated pylons, as well as the predicted presence of East Anglia ONE substation, within an otherwise rural and largely undeveloped landscape of cultivated farmland.
131. The decommissioning of the East Anglia THREE substation would introduce temporary structures, temporary lighting and traffic movements of heavy plant, which although associated with the existing development, would appear at variance with the rural character of the surrounding landscape. Mitigation planting around the substation would, by this stage, have reached approximately 12m, and would screen the majority of the ground level operations. The deconstruction of the substation, especially at the higher levels and where temporary lighting would be required, would form an apparent influence on landscape character, although the short-term duration and the impermanent nature of these decommissioning works would mean the impacts on the Ancient Plateau Claylands LCT would be **not significant**, short term and reversible.

### 29.4.4.3 Potential Impacts of Substation Decommissioning on Visual Amenity

132. The visual impacts on the surrounding visual receptors would vary throughout the period of decommissioning, particularly during the specific demolition operations of the larger structures on the compound. As demolition progresses on these structures, there would be a gradual change in the visual environment as the working height would gradually lower.
133. The intermittent, but temporary introduction of prominent tall structures such as cranes used during the demolition, would have short term visual impacts on the visual receptors in both the close range and, to a lesser degree, medium range and more sensitive visual receptors. Additional temporary visual impacts would arise as a result of demolition vehicle movements to and from the site and for general demolition operations.
134. During the decommissioning process, some temporary lighting would be required. It is anticipated that there would be limited activities requiring work on a 24 hour basis, however the greater use of lighting to ensure safe working would be required particularly during the winter months. For the highest parts of the structure, lighting at higher elevations would be required, consequently the greatest potential for visual impact from demolition lighting would occur during this stage, although it is anticipated this would be relatively short term.
135. The decommissioning process would take place at the end of the 25 year consent when mitigation screen planting around the site would have grown to approximately 12m in height. This would screen much of the decommissioning works from the majority of the visual receptors, with the exception of the more elevated processes and associated lighting. The magnitude of change would mostly be medium to low owing to the screening effect of the mitigation planting and the short-term duration of more visible works at higher levels.
136. The impacts of the decommissioning of the substation on visual amenity would be **not significant**, short term and reversible.

### 29.4.5 Cumulative Impacts of Substation

#### 29.4.5.1 Introduction

137. The cumulative assessment of landscape and visual impacts considers the potential for cumulative impacts to arise in relation to other developments. Table 29.4/4 lists other wind farm and major infrastructure projects which are potentially relevant to the proposed East Anglia THREE project along with an initial assessment as to whether the potential cumulative impacts require to be assessed in detail in this Cumulative Landscape and Visual Impact Assessment (CLVIA).

138. The East Anglia ONE offshore windfarm is included as a project within the CLVIA, however it is considered within the East Anglia THREE assessment as part of the baseline for the assessment. It should be noted that the East Anglia THREE project will not be built without the East Anglia ONE project having already been constructed.

**Table 29.4/4 Summary of Projects considered for the CLVIA**

Project	Status	Construction / Operation period	<sup>1</sup> Approx. Distance from East Anglia THREE (km)	Project definition	Project data status	Included in CIA	Rationale
East Anglia ONE	Application	2018 –2019 / 25 years	0	Offshore Windfarm Project Project description available	Complete / high	Yes	Location of East Anglia ONE largely coincides with East Anglia THREE project. Impacts considered as part of predicted baseline.
A future East Anglia project	Pre-application	No information	0	Offshore Windfarm Project Outline project data only	Incomplete / low	Yes	Construction would not overlap but consecutive disturbance possible. Operational and decommissioning impacts considered.
Sizewell C	Pre-application	Unknown	24.7	Nuclear Power Station No project detail available	Low	No	No overlap with landfall, onshore cable route or substation(s) location, too distant to impact same receptors.
Bramford-Twinstead	Pre-application	Unknown	0	Outline only	Complete / high	No	Detail unknown, may affect land around the substation(s) location.

<sup>1</sup> Shortest distance between the considered project and East Anglia THREE– unless specified otherwise.

Other Environmental Information

Project	Status	Construction / Operation period	<sup>1</sup> Approx. Distance from East Anglia THREE (km)	Project definition	Project data status	Included in CIA	Rationale
SITA (Efw plant)	In construction	Present – late 2014	0.5	Energy From Waste Plant Project description available	Complete / high	No	Would be operational before construction commences. No overlap with landfall, onshore cable route or substation(s) location
SnOasis	Planning permission granted	Unknown	0.7	Winter sport centre. Master plans available	Incomplete / low	No	Brownfield site, landfall, onshore cable route or substation(s) location
Old Fisons site (land west of Paper Mill Lane)	Planning application TBD	Unknown	0.7	Business park and housing scheme. Master plans available	Complete / high	No	Brownfield site, landfall, onshore cable route or substation(s) location
Adastral park	Planning application TBD	Unknown	0.8	Business park and housing scheme. Master plans available	Complete / high	No	Mostly Brownfield site, landfall, onshore cable route or substation(s) location
Ipswich Garden Suburb	Identified in adopted Core Strategy	Primarily after 2020	3	Urban development north of Ipswich. Master Plan at consultation phase.	Incomplete/medium	No	Greenfield site. No overlap with landfall, onshore cable route or substation(s) location. Due to distance recreational pressure would focus on Orwell Estuary and not Deben Estuary.
Progress Power, Eye, Suffolk	Consented	Construction 2017-18,	28	Gas fired power station	Complete / high	No	No overlap with landfall, onshore cable route or

Other Environmental Information

Project	Status	Construction / Operation period	<sup>1</sup> Approx. Distance from East Anglia THREE (km)	Project definition	Project data status	Included in CIA	Rationale
		Operation by 2019.		development			substation(s) location.  Likely to be constructed prior to East Anglia THREE commencement
Land North Of Woods Lane, Melton, Suffolk	Conditionally Allowed	Unknown	2.7	Outline planning for a residential development for 180 dwellings (8.27ha in size) to include open space and provision of ecological habitat areas.	High	No	No overlap with landfall, onshore cable route or substation(s) location, too distant to impact same receptors.



139. Table 29.4/4 shows that the potential for significant cumulative impacts arises in relation to East Anglia ONE and a future East Anglia project but none of the other projects.
140. The cumulative scenario of proposed East Anglia THREE project being added to a cumulative baseline comprising East Anglia ONE project constitutes the predicted baseline situation, which has been assessed in detail in sections 29.4.2, 29.4.3 and 29.4.4. The remaining cumulative scenario which requires detailed assessment is the cumulative scenario in which the East Anglia THREE substation is seen in conjunction with East Anglia ONE substation and future East Anglia substation. This cumulative scenario is assessed in respect of the potential cumulative impacts on the landscape character of the surrounding area and visual amenity of local people.
141. This assessment would apply in respect of both the Single Phase and Two Phased approach. In the Two Phased approach, the impacts would remain the same, only spread across two phases and therefore longer in duration.
142. There is the potential that the addition of the East Anglia THREE substation to the cumulative scenario would give rise to significant cumulative impacts. Table 29.4/5 below provides an initial assessment of the potential for cumulative impacts to arise in relation to the representative viewpoints. Many of the viewpoints are discounted from the detailed cumulative assessment owing to the limited extent to which the East Anglia THREE substation, the East Anglia ONE substation or a future East Anglia substation are visible, either as a result of distance, the screening effect of intervening woodland or the screening effect of the substations of one another. In these instances, the cumulative impacts are assessed as not significant. The shaded cells in the table indicate which viewpoints are to be assessed in detail.

**Table 29.4/5 Potential Cumulative Impacts on Visual Amenity**

Visual Receptor	Cumulative Impacts
VP 1- Offton Road, near Elmsett Village	East Anglia THREE substation and a future East Anglia substation would be distant and partially screened by intervening woodland.
VP2 – Flowton Village	East Anglia THREE substation would be partially screened and a future East Anglia substation would be fully screened by intervening woodland.
VP3 –Flowton to Burstallhill Minor Road	A future East Anglia substation would be largely screened by intervening woodland.
VP4 – Minor Road to Hintlesham Priory	East Anglia THREE substation and a future East Anglia substation would be screened by intervening woodland.
VP5 – Orchard Lands, near Canes	A future East Anglia substation would not be visible from this viewpoint owing to screening by the East Anglia THREE substation.

Farm	
VP 6 – PROW Burstall 147/006/0, near Hill Farm	A future East Anglia substation would be screened by intervening woodland.
VP7 - Burstall	A future East Anglia substation would be partially set below horizon and screened by intervening woodland.
VP8 – A1071, near Valley Farm	East Anglia THREE substation and a future East Anglia substation would be distant and screened by intervening woodland.
VP9 – Thornbush Hall	East Anglia THREE substation and a future East Anglia substation would be screened by intervening woodland.
VP 10 – PROW 155/047/0, near Fidgeon’s Farm	East Anglia THREE substation and a future East Anglia substation would be visible from this viewpoint with the potential to give rise to a significant cumulative impact.
VP 11 – PROW 155/002/0, near Bullenhall Farm	A future East Anglia substation would be partially screened by intervening woodland and located in a portion of the view where pylons are concentrated.
VP12 – PROW 155/003/0, near Tye House	East Anglia THREE substation would be screened by a future East Anglia substation.
VP13 – Tye Lane	No visibility of East Anglia THREE substation.
VP14 – Valley Road, near Nettlestead	East Anglia THREE substation and a future East Anglia substation would be distant and partially screened by intervening woodland.
VP15 – Church Hill, near Canes Farm	East Anglia THREE substation and a future East Anglia substation would be partially screened by intervening woodland.
VP16 – PROW 155/003/0, north- east of site	East Anglia THREE substation would be screened by intervening woodland.

143. The initial assessment shows that potential for significant cumulative impacts to arise, would occur at Viewpoint 10: PROW 155/047/0, near Fidgeon’s Farm. The cumulative assessment for this viewpoint is presented below in relation to the construction, operation and decommissioning phases of the proposed East Anglia THREE project.

### 29.4.5.2 Cumulative Impacts of Substation Construction

#### 29.4.5.2.1 Cumulative Impacts of Substation Construction on Physical Elements

144. For the purposes of the cumulative assessment it is assumed that the East Anglia ONE and a future East Anglia project would be operational. It should be noted that, whilst this is in accordance with GLVIA 3 guidance, the scenario does not represent a realistic one and does not reflect cumulative construction assessment undertaken in other chapters of the East Anglia THREE Environmental Statement.

- 145.
146. Each of the substations would have similar impacts on the physical elements of the site where they are constructed, relating to the loss of agricultural land and the potential removal of select hedgerow and trees. There would be a cumulative impact on physical elements, as the addition of East Anglia THREE substation to East Anglia ONE substation and a future East Anglia substation, would increase the loss of agricultural land and the potential removal of select hedgerows and trees.
147. The cumulative impact of East Anglia THREE substation on the physical elements would be not significant. The main loss would be of agricultural land, however owing to the low sensitivity of the intensive arable agricultural land and its extent across the wider landscape, the impact of the loss would be not significant. This assessment would apply in respect of both the Single Phased and Two Phased approach. In the Two Phased approach, the impacts would remain the same, only spread across two phases and therefore the impact would be longer in duration.
148. The extent of hedgerow and tree loss would be very small in proportion to the wider provision, even taking into account the cumulative loss in relation to East Anglia ONE substation and a future East Anglia substation. Furthermore, extensive replanting would occur as part of mitigation planting around the site.

#### 29.4.5.2.2 Cumulative Impacts of Substation Construction on Landscape Character

149. The East Anglia ONE substation and a future East Anglia project substation would be located in the same Ancient Plateau Claylands LCT in which the proposed East Anglia THREE substation would be located. The substations would be located in close proximity and there would be the potential for a cumulative impact to arise on the landscape character of the Ancient Plateau Claylands LCT. The landscape surrounding the substations is not subject to any national or local landscape designations and, as the potential impacts on other LCTs rapidly dissipates with distance, the Ancient Plateau Claylands LCT is the only landscape receptor to be assessed.
150. The addition of the East Anglia THREE substation to the East Anglia ONE substation and a future East Anglia project substation would generally give rise to **not significant** impacts. This is as a result of the screening of the construction works by a future East Anglia project in combination with the existing screening provided by the intervening woodland. Where there is the potential for a significant cumulative impact to arise in the landscape to the north, the location of a future East Anglia project substation to the fore of East Anglia THREE substation would greatly reduce the cumulative magnitude of change.

151. To the south-west, while the construction of East Anglia THREE would be seen to the fore of a future East Anglia substation, it would also be seen set behind the East Anglia ONE substation. While the components of East Anglia ONE substation would screen the ground level construction works, the use of tall cranes and the emerging structure of the converter hall or substation hall would be apparent at a higher level. The cumulative magnitude of change that the addition which East Anglia THREE substation would make, would be moderated by the scale and extent of the influence of existing energy developments, such that the overall impact to the south-west would be **not significant**. The impacts during the construction phase would be short term and reversible.
152. The exception, where screening would not reduce the magnitude of change, occurs to the east where the construction of the East Anglia THREE substation would be seen to the fore of the existing East Anglia ONE substation and a **significant** impact would arise out to 800m in this direction. The establishment of mitigation planting to the east would limit the duration of the significant impacts to the first 15 years by which time the planting would have established sufficiently enough to reduce the influence of the substation on the character of the landscape. For the remaining 10 years of the consent period, the impacts would be **not significant**. This assessment would apply in respect of both the Single Phase and Two Phased approach. In the Two Phased approach, the impacts would remain the same, only spread across two phases and therefore longer in duration.

#### 29.4.5.2.3 Cumulative Impacts of Substation Construction on Visual Amenity

153. An initial assessment regarding the potential for cumulative impacts to arise in relation to visual amenity is set out in *Table 29.4/5*. In respect of the cumulative scenario, only Viewpoint 10 is considered to have potential to give rise to significant cumulative impacts.
154. It is assumed East Anglia ONE substation and a future East Anglia substation would be operational. In Viewpoint 10, a future East Anglia substation would be visible as a large scale structure, although set a distance of 1.04km from the viewpoint and screened at the lower level by tree cover. The smaller scale of the East Anglia ONE substation components and their location behind the intervening tree cover means that they would be largely screened in this view. The construction of East Anglia THREE substation would occur to the fore and right of East Anglia ONE substation, and to the left of a future East Anglia substation.

##### 29.4.5.2.3.1 Cumulative impact of substation construction– Viewpoint 10

155. For the purposes of the assessment it is assumed a future East Anglia project substation would be operational and in Viewpoint 10, visible as a large scale double shed, seen set behind the intervening tree cover to the right of the mast, such that only the top part of the building and the roof structure would be visible. The construction of

East Anglia THREE substation would occur to the left of a future East Anglia substation, although the intervening tree cover would screen the majority of the construction works, with the exception of the higher level works which would be seen above the tree tops, including the emergence of the converter hall or substation hall roof structure and cranes needed for their construction.

156. The separation from a future East Anglia substation means that the addition of the East Anglia THREE substation would increase the extent to which development would be visible. The construction of East Anglia THREE substation would be seen to be located in an area where there is already pylons and a mast. East Anglia THREE substation would not appear as a new or unfamiliar feature in this view, but would increase the extent of development in this location. The distance of 1.1km between the viewpoint and East Anglia THREE substation, combined with the extent of intervening tree cover and the influence of the existing large scale masts and pylon all moderate the potential impact. Taking all these factors into account, the cumulative magnitude of change would be medium to low and the cumulative impact would be **not significant**. The impacts during the construction phase would be short term and reversible.

### 29.4.5.3 Cumulative Impacts of Substation Operation

#### 29.4.5.3.1 Cumulative Impacts of Substation Operation on Physical Elements

157. Once at operational stage, there would be no further loss of or alteration to the physical elements of the substation locations and therefore there would be no cumulative impact.

#### 29.4.5.3.2 Cumulative Impacts of Substation Operation on Landscape Character

158. The addition of the East Anglia THREE substation to the East Anglia ONE substation and a future East Anglia substation would generally give rise to not significant impacts. This is principally as a result of the location of East Anglia THREE substation in the middle of East Anglia ONE substation and a future East Anglia substation, which, in combination with the intervening woodland, means that East Anglia THREE is often fully or partially screened. The one exception occurs to the east where East Anglia THREE substation would be seen in conjunction with a future East Anglia project substation and a significant cumulative impact would arise out to 800m in this direction. The impact would be significant, long term and reversible.

#### 29.4.5.3.3 Cumulative Impacts of Substation Operation on Visual Amenity

##### 29.4.5.3.3.1 Viewpoint 10 – PRow Bramford 155/047/0 near Fidgeon's Farm

159. It is assumed the East Anglia ONE substation and a future East Anglia substation would be operational and in Viewpoint 10, with East Anglia ONE substation almost completely screened by intervening tree cover and a future East Anglia substation

partially screened at the lower level by tree cover. East Anglia THREE substation would occur to the left of a future East Anglia substation, such that it would increase the extent of development to a small amount, albeit at a distance of 1.1km the converter hall or substation hall would not be seen as a close range feature. The distance of the developments from the viewpoint combined with the partial screening from the intervening tree cover would moderate the cumulative magnitude of change such that it would be medium to low and the cumulative impact would be **not significant**, long term and reversible.

#### 29.4.5.4 Cumulative Impacts of Substation Decommissioning

##### 29.4.5.4.1 Cumulative Impacts of Substation Decommissioning on Landscape Character

160. The screening effect of the existing woodland, plus the mitigation planting which would have grown to approximately 12m over the 25 year consent period, would largely screen the ground level decommissioning works from the surrounding landscape in all directions. While higher level decommissioning works would be visible above the tree tops, the limited extent and duration of this visibility would lead to a not significant impact on landscape character.

##### 29.4.5.4.2 Cumulative Impacts of Substation Decommissioning on Visual Amenity

161. It is assumed East Anglia ONE substation and a future East Anglia substation would be operational and in Viewpoint 10, the upper parts of a future East Anglia substation would be seen above the intervening tree cover. At the end of the 25 year consent period, when decommissioning would take place, the mitigation planting proposed for the eastern side of the East Anglia THREE substation, in combination with the existing tree cover would screen the majority of the decommissioning works, with the exception of the higher level operations involving cranes and the deconstruction of the building. Taking these factors into account, the cumulative magnitude of change would be medium to low and the cumulative impact would be not significant.

#### 29.4.5.5 Summary of Cumulative Impacts

**Table 29.4/6. Summary of Cumulative Impacts of Substation**

Project stage / Receptor type	Landscape / Visual receptors	Sensitivity	Cumulative magnitude of change	Cumulative Impact
<b>Cumulative Impacts of Substation Construction</b>				
Physical elements	Agricultural land	low	low	Not significant
	Trees and hedgerows	medium to high	low	Not significant
Landscape character	Ancient Plateau Claylands	medium	medium 800m to east	Significant 800m to east
			medium to low in	Not significant in all

			all remaining areas	remaining areas
	VP 10 – PROW 155/047/0, near Fidgeon’s Farm	medium to low	medium	Not significant
<b>Cumulative Impacts of Substation Operation</b>				
Landscape character	Ancient Plateau Claylands:	medium	medium 800m to east year 0-15 low 800m to east, year 15-25 low in all remaining areas	Significant 800m to east year 0-15 Not significant 800m to east, year 15-25 Not significant in all remaining areas
	VP 10 – PROW 155/047/0, near Fidgeon’s Farm	medium	medium to low	Not significant
<b>Cumulative Impacts of Substation Decommissioning</b>				
Landscape character	Ancient Plateau Claylands	medium	low	Not significant
Visual amenity	VP 10 – PROW 155/047/0, near Fidgeon’s Farm	medium	low	Not significant

162. The assessment shows the limited occurrence of significant cumulative impacts in relation to East Anglia THREE. This comprises localised impacts on landscape character during the construction and operational stages in relation to the cumulative scenario with East Anglia ONE and a future East Anglia project. The limited occurrence of impacts relates to a combination of three factors; the screening effect of existing woodland cover around the substations, the screening effect of the substations of each other; and the additional screening effect of the proposed mitigation planting.
163. The location and maturity of the existing woodland cover and tree belts around the substations, means that in certain directions one or more of either the substations are partially or fully screened. In these instances, the cumulative magnitude of change is reduced as the buildings are not seen to their full extent and often a scale comparison with the closer range trees arises which helps to reduce the perceived scale of the buildings.
164. The close proximity of the buildings to one another, especially the East Anglia THREE substation and the East Anglia ONE substation, means that in certain East Anglia THREE substation and a future East Anglia substation screen each other or East Anglia ONE substation. In these instances, the cumulative magnitude of change is reduced as the extent to which the substations are visible is limited.

165. Mitigation planting is proposed to the north, east and south-west, with additional earth bunding proposed to the north and south-west. The mitigation planting would not take effect during the construction stage of the proposed project, and then would gradually reduce the impacts during the operational stage, and form a relatively effective screen from these directions during the decommissioning phase. The longevity of these woodland areas and therefore the effectiveness of the screening they provide is dependent on the health of the trees. This issue is addressed in the OLEMS for East Anglia THREE.

**29.4.6 Inter-relationships**

166. Inter-relationships exist between the Landscape, Seascape and Visual Amenity and that for Onshore Archaeology and Cultural Heritage. Information from this chapter has been used to help establish any potential landscape character and visual amenity receptors and inform the impact assessment presented here. The Onshore Archaeology and Cultural Heritage chapter makes reference to this chapter. This chapter, however, does not rely on the findings of any other chapters in the ES.

**Table 29.4/7 Chapter Topic Inter-Relationships**

Topic and description	Related Chapter	Where addressed in this Chapter
Landscape and Visual Impact Assessment	Onshore Archaeology and Cultural Heritage	29.6.3

**29.4.6.1 Summary Substation Impacts**

167. For the purpose of the assessment it is assumed that the East Anglia ONE substation is constructed and operational, occupying the land to the immediate west of the East Anglia THREE substation location. The East Anglia THREE substation occupies a relatively flat plateau landscape, which benefits from the screening effect of mature blocks of woodland to the west, north-west and north-east. The presence of the adjacent Bramford Substation and associated planting partially screens visibility of the East Anglia THREE substation to the south and, in association with the pylons, establishes energy developments as part of the baseline character in this localised part of the LCT.

168. Embedded mitigation, proposed as part of the East Anglia ONE project, would already be in place to the south-west, immediate north and east. Further planting as part of the East Anglia THREE embedded mitigation would take place to the north. This would complement the existing mature planting which provides screening to the north-west, west and north-east. It is predicted that the planting would take 25 years to reach approximately 11m, although woodland planting carried out as part of the East Anglia ONE project would have an additional 3 years growth. It would not be sufficiently tall to



screen the initial construction phase, but then would increasingly screen the substation hall or converter hall during the operational phase.

169. During the construction phase, significant impacts would occur on the landscape character of the Ancient Plateau Claylands LCT within a localised area where the screening effect of the existing mature woodland does not occur, approximately 800m to the east and 800m to the north. The presence of the East Anglia ONE substation prevents the influence extending to the south-west. Significant impacts would also arise in respect of Viewpoint 11, which lies to the east, and Viewpoint 12, which lies to the north, which are representative of the wider PRowS and the views of walkers, as well as residents in respect of Viewpoint 12.
170. The impacts on all remaining parts of the LCT and on all other landscape and visual receptors during the construction phase would be not significant.
171. During the operational phase, the significant impacts reported above would gradually diminish as the mitigation planting matures and the substation would become largely enclosed by a combination of existing and mitigation planting. By year 15 of the 25 year consent, the screening by the mitigation planting would be sufficient to reduce the impacts on the LCT and Viewpoints 11 to not significant. The significant impact on Viewpoint 12 would be reduced to not significant after 20 years.
172. While the decommissioning phase would involve potential impacts similar to what would occur during the construction phase, the maturity of the mitigation planting at the 25 year point, in combination with the existing woodland, would largely screen the majority of the decommissioning works, thus ensuring that no significant impacts would arise.
173. In relation to the cumulative scenario in which East Anglia THREE substation would be added to East Anglia ONE substation and a future East Anglia substation there would be significant cumulative impacts out to 800m to the east occurring during the construction phase and for the first 15 years of the operational phase prior to mitigation planting providing sufficient screening to reduce the impacts. The limited occurrence of cumulative impacts relates principally to the extent to which the East Anglia THREE substation would be screened by a future East Anglia substation, as well as existing woodland.

### 29.4.1 References

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#### **Appendix 29.4 Ends Here**

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# East Anglia THREE Offshore Windfarm

East Anglia THREE

## **Appendix 29.5**

### Assessment of Haul Road Remaining in situ between Projects

Environmental Statement  
Volume 3

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## 29.5 ASSESSMENT OF HAUL ROAD REMAINING IN SITU BETWEEN PROJECTS

### 29.5.1 Introduction

1. The Development Consent Order (DCO) for the East Anglia ONE project states that within 12 months of completion, land occupied by temporary uses must be reinstated. This would mean that the haul roads and Construction Consolidation Site (CCS) associated with East Anglia ONE would be removed and the disturbed land would be returned to pre-construction state.
2. As part of the worst case assumptions within the Environmental Statement (ES) for the proposed East Anglia THREE project, it is assumed that haul roads would be required to access jointing bay locations in remote areas in order to pull cables through, and therefore the impacts of the reconstruction of the haul road and CCSs are assessed.
3. East Anglia THREE Limited (EATL) are progressing an option that the haul road and CCS footprints may remain in situ between the completion of construction of the East Anglia ONE project and commencement of construction of the proposed East Anglia THREE project, and therefore would be used by the proposed East Anglia THREE project during construction.
4. This additional assessment has therefore been undertaken to consider a potential amendment to the East Anglia ONE DCO, which would allow for the haul road to remain in situ for use by the proposed East Anglia THREE project. This assessment specifically considers effects upon landscape and visual receptors, as per Chapter 29 Seascape, Landscape and Visual Impact Assessment (SLVIA) of the ES for the proposed East Anglia THREE project. This assessment is based on a scenario in which the haul roads and CCSs are removed following construction of East Anglia ONE and then reconstructed for the construction of the proposed East Anglia THREE project.
5. The key advantages of leaving the haul road in place between East Anglia ONE and the proposed East Anglia THREE project are as follows:
  - Avoidance of additional construction works to remove haul roads and CCSs and then reinstate;
  - Reduction in the overall volumes of materials being brought on and off site and therefore reduction in presence and activity of vehicles (delivery of materials associated with the haul roads and CCSs would account for the majority of HGV movements);
  - Reduction in the impacts on landscape character and visual amenity owing to the reduced scale of the construction works; and

- Reduction in the duration of landscape and visual impacts as a longer programme of construction works would be undertaken.
6. This report considers the following approach to haul road and CCS construction for East Anglia ONE and the proposed East Anglia THREE project:
- The haul road and CCSs are installed during construction of the East Anglia ONE project.
  - The haul road and CCS are left in situ, and remain in place for construction of the proposed East Anglia THREE project.
  - The haul road is removed at the end of the construction period and land is reinstated.
7. This report looks at each impact which has been originally identified as part of the East Anglia THREE SLVIA assessment within Chapter 29, and considers the effects of leaving the haul road and CCSs in place between projects, compared with removing the haul road and re-instating vegetation during this time.

### 29.5.2 Assumptions

8. For the purposes of this report, the following assumptions have been made in reviewing the impacts assessed in Chapter 29 Seascape, Landscape and Visual Assessment of the East Anglia THREE ES:
- As a worst case scenario, the haul road would be left in situ from construction of East Anglia ONE project to the end of construction of the proposed East Anglia THREE project.<sup>1</sup>
  - Water crossings would be left in situ from construction of East Anglia ONE project to the end of construction of the proposed East Anglia THREE project.
  - Jointing bay hard standing would be removed between construction of East Anglia ONE project and the proposed East Anglia THREE project as the location of these may be different for each project.
  - At CCS hard standing would be left in place but fencing, portacabins or other infrastructure would be removed, leaving flat ground.
  - In the time between the East Anglia ONE project and the proposed East Anglia THREE project, hedgerows would be reinstated up to the agreed gap left for haul roads (approximately 5.5m).

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<sup>1</sup> Leaving haul road in situ would need to be agreed with landowners and the local authorities on a case by case basis, therefore in practice some sections may be left and others removed. However, as it is not possible to know exact locations, the assumption is therefore that the haul road is left.



- At the earliest, construction of the East Anglia ONE would be finished in 2019, and therefore the worst case scenario would be the haul road and CCS hard standing remaining unused in situ from then until the start of construction of the proposed East Anglia THREE project (due to start between 2020 and 2022); i.e. four years.
- Use of haul road left in situ between projects would be restricted to the landowner, or for the general public where PRowS cross the haul road.
- This report looks only at impacts along the onshore cable route. Impacts at landfall and the substation(s) locations are not re-considered.
- Construction, use and removal of the haul road and CCS and reinstatement of land are considered to be construction activities and therefore this report does not re assess operation and maintenance or decommissioning impacts from Chapter 29 Seascape, Landscape and Visual Assessment of the East Anglia THREE ES.
- This assessment takes account of embedded mitigation detailed in the Outline Landscape and Ecological Management Strategy.

### **29.5.3 Summary of potential construction impacts identified for landscape and visual receptors**

9. In Chapter 29 Seascape, Landscape and Visual Impact Assessment (SLVIA) of the East Anglia THREE ES, the worst case scenario considers that the haul road and CCSs, relating to the onshore cable route, are constructed as part of the proposed East Anglia THREE project and removed at the end of the construction period. For the purposes of the Appendix, this scenario is referred to as Scenario 1.
10. The assessment considers the potential impact of the construction of the haul road and CCSs, along with the potential impact of the presence and activity of machinery, and presence of materials and other equipment, relating to the onshore cable route construction. This takes into account the loss of vegetation necessary for the construction of the haul road and CCSs, with the assumption being that the vegetation being removed would largely be replacement planting used to infill gaps made during the construction of East Anglia ONE, and therefore less mature and well-established than the original surrounding vegetation.
11. The finding of the assessment is that the construction of the onshore cable route would not give rise to a significant impact on the physical elements, landscape character receptors or visual receptors.
12. The impact on the physical elements would be not significant owing to the relatively small proportion of the wider physical elements that would be disturbed or removed, the localised extent of the impacts, and the reversibility of impacts through the reinstatement of vegetation on completion of the construction works. Where sections of

hedgerow would be removed in relation to the construction of the haul road and CCSs, these would be the specimens replanted following the completion of East Anglia ONE and therefore would be relatively immature. Their removal would, therefore, have a lesser impact than if they were more mature and well established specimens. The land where the haul road and CCSs would be constructed, would coincide with the areas where the haul road and CCSs would have been originally constructed for East Anglia ONE and therefore, would also be relatively recently reinstated. These areas would predominantly be agricultural land, which by its very nature, would already be disturbed.

13. In terms of landscape character, this finding relates principally to the scale of the construction works relative to the scale of the Landscape Character Types and landscape designations, in respect of which the potential impacts are being assessed. The construction works would occupy localised extent of much wider landscape areas. The haul road would occur across areas where minor roads and tracks form part of the baseline character and with it being a surface feature in a relatively flat landform, it would not have a wide scale influence on the character of the landscape. The CCSs would occur intermittently, with seven occurring along the 37km length of the onshore cable route, such that inter-visibility would be unlikely to occur and, therefore, their influence would be singular rather than cumulative. Through the selection of locations, which are mostly afforded enclosure from existing hedgerows and woodland where possible, the prominence of these areas would be moderated. More visible features such as portacabins and temporary fencing would be more apparent, as well as the presence of vehicles and construction machinery, although still small scale features in a much wider landscape.
14. In terms of visual receptors, such as residents, road-users, cyclists and walkers, the impact of the construction, presence, and removal of the haul road and CCSs would be not significant. Again, the siting of these elements has considered the potential impact on principal visual receptors, such as roads and settlements, and has maintained an appropriate separation distance where ever possible. With the exception of portacabins, storage piles of materials and temporary fencing, as ground-surface features, the haul road and the CCSs would not be prominent in views and the roads especially would relate to the existing presence of roads and tracks which are typical in views within this area.
15. The impacts on landscape and visual receptors would be not significant owing to the localised influence of the haul roads and CCSs, the limited extent to which the characterising features of the views would be altered by the addition of these components, the impermanent nature of the associated construction works and the reversibility of residual impacts. The impacts would be short term, lasting only the period of the construction process, albeit with some residual effects extending into the start of the medium term phase, as vegetation grows to infill gaps.

## 29.5.4 Comparison of impacts

### 29.5.4.1 Introduction

16. The following section presents an assessment of the alternative scenario in which the haul road and CCSs are retained during the interim period between the East Anglia ONE construction and East Anglia THREE construction. This considers the potential impacts on physical elements, landscape character and visual receptors. For the purposes of the Appendix, this scenario is referred to as Scenario 2.

### 29.5.4.2 Impacts on physical elements

17. The impacts on the physical elements of the landscape, such as the arable farmland, hedgerows, and grasslands, as a result of retaining the haul road and CCSs would be not significant. The loss of arable farmland, mature trees, hedgerows and grassland, necessary to accommodate the haul road and CCSs, would occur during the construction phase of East Anglia ONE. With the retention of the haul road and CCSs into the construction phase of the proposed East Anglia THREE project, no further removal of physical elements would be required, with the exception of possible small scale removals in localised parts. There would therefore be no, or negligible impacts on physical elements as a result of Scenario 2.
18. The impact of Scenario 2 on the physical elements is less than the impact of Scenario 1 in which the haul road and CCSs would be removed at the end of the construction phase of East Anglia ONE and then reinstated at the start of the construction phase of East Anglia THREE. In Scenario 1, reinstated vegetation would be removed resulting in a greater overall loss of vegetation, although the species removed would be those that were replanted as part of the reinstatement works and therefore smaller and less well established than the indigenous vegetation. This vegetation would, none-the-less, help to mitigate landscape and visual effects within the interim period, which could be for up to four years.

### 29.5.4.3 Impacts on landscape character

19. The potential impact on the landscape character types and landscape designations, as a result of the retention of the haul road and CCSs, would be not significant. These components would have an influence on the character of the landscape, as they would be apparent as additional areas of hard-standing, which would contrast with the predominantly agrarian character, albeit in a landscape where rural roads and tracks form part of the baseline character. While their prominence would be moderated by their ground surface location, their presence would be accentuated by the gaps in the hedgerows that would occur along the length of the roads and across the CCSs. Overall, their presence would give rise to a low magnitude of change and their impact would be not significant.

20. Scenario 2, compared with Scenario 1 assessed in the East Anglia THREE ES, would have less of an impact in respect of the scale of change to the landscape, but more of an impact in respect of the presence of the haul road and absence of mitigation planting during the interim period.
21. In Scenario 1, the additional construction works and traffic volumes which would be required to remove the haul road and CCSs would, during the very short term (0-1 years) or short term (1-2 years), marginally increase the magnitude of the change. The growth of mitigation planting over a period of up to seven years would, however, mean that gaps in hedgerows would gradually be filled and the magnitude of change on landscape character would be reduced. Overall, the slight increase in impact as a result of the additional construction works to remove and reinstate the haul road and CCSs, would be greater than the slight decrease in impact that would arise as a result of the temporarily reinstated planting.

#### **29.5.4.4 Impacts on landscape designations**

22. The potential impact on the landscape designations, as a result of the retention of the haul roads and CCSs, would be not significant. The Suffolk Coast and Heaths AONB, as well as the local designation of the SLAs, denote landscapes with a special sensitivity. While the construction of the haul roads, CCSs and other associated components during East Anglia ONE would have an impact that is assessed in the East Anglia ONE ES, the impact of their retention would be notably less as no further construction works would be required and it would only be their presence that would have an influence on the character of the designated areas. As roads and tracks are an existing feature within the AONB and SLAs, the presence of the haul road would not appear as an untypical feature. It would none-the-less add to the existing presence of roads and tracks, and would possibly, in more rural parts, detract from the character of the landscape.
23. Overall, the scale of the haul roads and CCSs are relatively small, especially in relation to the much wider extent of the designated areas. Their often enclosed location, temporary nature and the ease with which reinstatement can take place means that their impact would be limited.
24. In comparison to Scenario 1, in which the haul road and CCSs would be removed and reinstated, the impact of Scenario 2 would be less, even taking into account the absence of reinstated planting in the interim. This relates principally to the additional construction works and vehicular movements that would be required for the removal and reinstatement, as well as the longer duration over which the impacts would be experienced.

#### 29.5.4.5 Impacts on visual receptors

25. The potential impact on the visual receptors, as a result of the retention of the haul roads and CCSs, would be not significant. The haul roads, CCSs and other associated components would have an influence on the views of local residents, road-users, cyclists, walkers, and other viewers, as they would be apparent as additional areas of hard-standing. These would contrast with the predominantly agrarian character, albeit seen in views where rural roads and tracks are a typical feature of the baseline character. While their prominence would be moderated by their ground surface location, their presence would be accentuated by the gaps in the hedgerows that would occur along the length of the roads and across the CCSs. Overall, their presence would give rise to an impact that would be not significant.
26. Scenario 2, compared with Scenario 1, as assessed in the East Anglia THREE ES, would have less of an impact on viewers in the area. This would be as a result of there being no additional construction works, compared with removal and reinstatement of haul road and CCSs, and therefore less movement of materials and fewer vehicular movements visible to viewers. The additional impact in respect of Scenario 2 would relate to the absence of mitigation planting during the interim period.

#### 29.5.5 Summary

27. Chapter 29 Seascape, Landscape and Visual Assessment of the ES assesses a scenario in which the haul road and CCSs are removed following the construction of East Anglia ONE and reinstated at the start of the proposed East Anglia THREE project. Following removal of the haul road and CCSs planting would be reinstated, mostly comprising hedgerow planting, which would be removed again prior to reconstruction of the haul roads and CCSs. The impact of these components on the physical elements, landscape character and visual receptors would be not significant owing to a combination of the following factors;
  - The localised extent of the haul road and CCSs;
  - The considered siting of the haul road and CCSs to ensure separation space from sensitive receptors and benefit from local screening where possible;
  - The relatively small scale of the works required for the removal and reinstatement of the haul road and CCSs;
  - The reduction in landscape and visual impacts as a result of the reinstatement of hedgerows between projects;
  - The temporary nature of the haul roads and CCSs and the reversibility of the potential impacts; and
  - The relatively short duration of the construction works.

28. This Appendix considers an alternative scenario to that assessed in Chapter 29 Seascape, Landscape and Visual Assessment of the ES, in which the haul road and CCSs are not removed, but instead retained in-situ between the construction phase of East Anglia ONE and the construction phase of the proposed East Anglia THREE project. None of the impacts assessed would change in significance from those stated in Chapter 29 SLVIA of the East Anglia THREE ES, where the scenario assessed involves the removal of the haul road and CCSs. The factors leading to not significant effects include the following:
- The localised extent of the haul road and CCSs;
  - The considered siting of the haul road and CCSs to ensure separation space from sensitive receptors and benefit from local screening where possible;
  - The absence of any further construction works or movement of materials; and
  - The temporary nature of the haul roads and CCSs and the reversibility of the potential impacts.
29. A comparison between these two scenarios has been presented and is summarised in table 29.5.1 below, which reveals that in terms of potential impacts on landscape and visual receptors, while both scenarios would not give rise to significant effects, Scenario 2, as assessed in this Appendix would have a lesser impact than Scenario 1, as assessed in Chapter 29 Seascape, Landscape and Visual Assessment of the ES. The principal reason for this is that there would be no further construction works required, as removal and reinstatement of the haul road and CCSs would not occur.

**Table 29.5.1 Comparison of impacts between Scenario 1 and Scenario 2**

Receptors	Significance in respect of Scenario 1 (haul road reinstatement)	Significance in respect of Scenario 2 (haul road retention)	Change to impact assessment
<b>Physical Elements</b>	Not significant	Not significant	No change
<b>Landscape Character</b>	Not significant	Not significant	No change
<b>Landscape Designations</b>	Not significant	Not significant	No change
<b>Visual Receptors</b>	Not significant	Not significant	No change

**Appendix 29.5 Ends Here**

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