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East Anglia THREE

Appendix 29.1

Seascape, Landscape and Visual Assessment Methodology

Other Environmental ~~Statement~~ Information

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28.1 SEASCAPE, LANDSCAPE AND VISUAL ASSESSMENT METHODOLOGY

28.1.1 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 extents and/or 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 extents 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 the 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 EAOW East Anglia THREE Environmental Statement, as well as the East Anglia ONE Environmental Statement.

28.1.2 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.

28.1.3 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

	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.

28.1.4 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.

28.1.4.1 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.

28.1.4.2 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 **Substation 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.

28.1.4.3 Magnitude of Change on Landscape Elements

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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.

28.1.4.4 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.

28.1.4.5 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.

28.1.4.6 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 giving for their exclusion.

28.1.4.7 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.

28.1.4.7.1 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.

28.1.4.7.2 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.

28.1.4.8 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.

28.1.4.9 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 ~~29.8~~[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.

28.1.4.10 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 extents 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.

28.1.4.11 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.

28.1.4.12 Levels of Magnitude of Change

40. ~~38.~~ The basis for the assessment of the magnitude of change for each receptor is made clear using evidence and professional judgement.

41. ~~39.~~ 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. ~~40.~~ There may also be intermediate levels of magnitude of change where the change falls between two of the definitions; medium-high and medium-low.

28.1.4.13 The Significance of Impacts on Landscape Character

43. ~~41.~~ 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. ~~42.~~ 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.

28.1.5 Assessment of Visual Impacts

45. ~~43.~~ 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. ~~44.~~ 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 ~~of sensitivity, magnitude of change and an assessment of significance.~~

28.1.5.1 Baseline Study

47. ~~45.~~ 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 ~~Project~~ **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.** ~~46.~~ The location, type and number of visual receptors experiencing visibility of the ~~Project~~ **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 ~~development Project~~ **project** as well as the wider available view, making reference to the principal orientation, focal features, and visible extents 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. ~~47.~~ 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.

28.1.5.2 Sensitivity of Visual Receptors

50. ~~48.~~ 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.

28.1.5.2.1 Value of the View

51. ~~49.~~ 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. ~~50.~~ 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.** ~~51.~~ 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.** ~~52.~~ 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.

28.1.5.2.2 Susceptibility to Change

- 55.** ~~53.~~ 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.

28.1.5.2.3 ~~29.1.5.3~~ Sensitivity to Change

56. ~~54.~~ 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.

28.1.5.3 ~~29.1.5.4~~ Magnitude of Change on Views

57. ~~29.1.5.4.1~~ 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 ~~29.8~~29.1.8 of this Appendix. The basis for this assessment is made clear using evidence and professional judgement, based on the following criteria: ~~Size or Scale~~

28.1.5.3.1 Size or Scale

58. ~~55.~~ 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.

28.1.5.3.2 29.1.5.5-Geographical Extent

59. ~~56.~~ 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 extents which will experience a particular magnitude of change and therefore the extents 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. ~~57.~~ 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.

28.1.5.3.3 29.1.5.6-Duration and reversibility

61. ~~57.~~ 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.

28.1.5.3.4 ~~29.1.5.7~~ Levels of Magnitude of Change

62. ~~58.~~ 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. ~~59.~~ There may also be intermediate levels of magnitude of change where the change falls between two of the definitions; medium-high and medium-low.

28.1.5.4 ~~29.1.5.8~~ The Significance of Impacts on Views

64. ~~60.~~ 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~~ 29.1.1 helps to inform the threshold of significance when combining sensitivity and magnitude to assess the impacts.

65. ~~61.~~ 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. ~~62.~~ 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.

28.1.6 Assessment of Cumulative Landscape and Visual Impacts

28.1.6.1 Introduction

67. ~~63.~~ 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. ~~64.~~ 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. ~~65.~~ 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.

28.1.6.2 Types of Cumulative Impact

70. ~~66.~~ 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. ~~67.~~ 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. ~~68.~~ 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).

28.1.6.3 Assessing the Significance of Cumulative Landscape and Visual Impacts

73. ~~69.~~ 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.

28.1.6.3.1 Cumulative Magnitude of Change

74. ~~70.~~ 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. ~~71-~~ 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. ~~72-~~ There may also be intermediate levels of cumulative magnitude of change the change falls between two of the definitions; medium-high and medium-low.

28.1.6.4 Significance of Cumulative Impact

77. ~~73-~~ 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 ~~so prolific that it becomes~~ 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. ~~74.~~ 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.** ~~75.~~ 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.

28.1.7 Nature of Impacts

- 80.** ~~76.~~ 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.** ~~77.~~ 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.** ~~78.~~ 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. ~~79.~~ 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. ~~80.~~ 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. ~~–~~

28.1.8 Duration and reversibility

85. ~~81.~~ 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 ~~Substation~~ [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. ~~82.~~ 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.

83. ~~*In respect of the construction phase**, two alternative approaches are currently being considered by EATL; a Single Phase and 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.~~ 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. ~~84.~~ 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. ~~85.~~ 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. ~~86.~~ 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. ~~87.~~ 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. ~~88.~~ In order to avoid repetition, the duration and reversibility of impacts are not reiterated throughout the assessment.

28.1.9 Graphic Production

94. ~~89.~~ 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. ~~90.~~ 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. ~~91.~~ 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. ~~92.~~ The East Anglia THREE substation is shown to be added to a predicted baseline in which the East Anglia ONE ~~converter station~~[substation](#) is already present - the consent of East Anglia ONE affords certainty with regard to the presence of the ~~converter stations~~[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.** ~~93.~~ 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.** ~~94.~~ 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.** ~~95.~~ 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.** ~~96.~~ 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.** ~~97.~~ 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 10 m 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.** ~~98.~~ Wireline representations that illustrate the **Proposed Development 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. ~~99.~~ 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. ~~100.~~ 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

Document comparison by Workshare Compare on 22 September 2016
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<u>Insertion</u>	
Deletion	
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Style change	
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Inserted cell	
Deleted cell	
Moved cell	
Split/Merged cell	
Padding cell	

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