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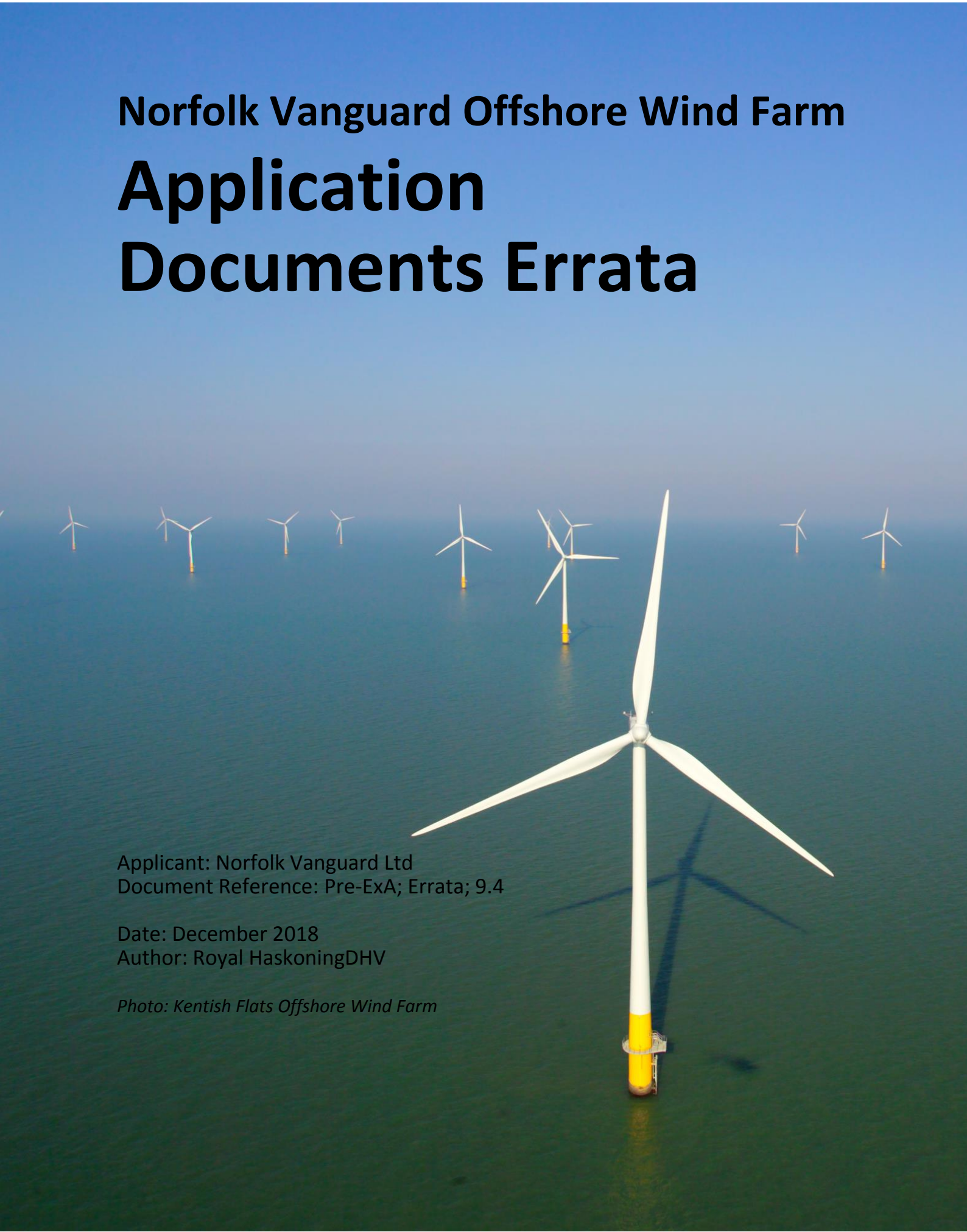
Norfolk Vanguard Offshore Wind Farm

Application Documents Errata



Applicant: Norfolk Vanguard Ltd
Document Reference: Pre-ExA; Errata; 9.4

Date: December 2018
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Photo: Kentish Flats Offshore Wind Farm

Date	Issue No.	Remarks / Reason for Issue	Author	Checked	Approved
16/07/18	01D	First draft for review	GK	JA	GK
20/11/18	02D	Second draft for review	GK	JA	GK
30/11/18	03D	Third draft	GK	JA	GK
12/12/18	04F	Final version	GK	GK	RS

EXECUTIVE SUMMARY

This document provides information on inconsistencies and errors identified in the Norfolk Vanguard Development Consent Order (DCO) application documents. These inconsistencies are all considered to be non-material. This Errata amends the documents referred to herein in the manner described, which documents should be read alongside the Errata.

This document has been submitted to The Examining Authority (ExA) for consideration by Norfolk Vanguard Limited following the request of the ExA at the Preliminary Meeting on 10 December 2018.

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1 INTRODUCTION

1.1 Project Background

1. Norfolk Vanguard Limited ('the Applicant', an affiliate company of Vattenfall Wind Power Limited (VWPL)) is seeking a Development Consent Order (DCO) for Norfolk Vanguard, an offshore wind farm (OWF) in the southern North Sea.

2. The OWF comprises two distinct areas, Norfolk Vanguard East (NV East) and Norfolk Vanguard West (NV West) ('the OWF sites'), within which wind turbine generators (WTG), associated platforms and array cables will be located. The offshore wind farm will be connected to the shore by offshore export cables installed within the offshore cable corridor from the wind farm to a landfall point at Happisburgh South, Norfolk. From there onshore cables would transport power over approximately 60km to the onshore project substation near Necton, Norfolk. A full project description is given in the Environmental Statement (ES) (document 6.1), Chapter 5 Project Description.

3. Norfolk Vanguard is located approximately 47km from the closest point of the Norfolk Coast. NV East covers an area of approximately 297km^2 and NV West covers an area of around 295km^2.

4. Once built, Norfolk Vanguard would have an export capacity of up to 1800MW, with the offshore components comprising:

   - Up to 200 WTGs;
   - Up to two offshore electrical platforms;
   - Up to two accommodation platforms;
   - Up to two met masts;
   - Up to two LiDAR;
   - Up to 600km array cables;
   - Up to 150km inter-connector cables; and
   - Up to 400km export cables (in two trenches of approximately 100km length each).

5. The key onshore components of the project are as follows:

   - Landfall;
   - Onshore cable route, including trenchless crossing zones (e.g. Horizontal Directional Drilling (HDD)) and mobilisation areas;
   - Onshore project substation;
   - Existing National Grid substation extension; and
   - National Grid new / replacement overhead line tower and temporary works.

6. The DCO application includes all offshore and onshore infrastructure associated with the project, including an extension to the existing Necton National Grid substation and laying of cable ducts as enabling development for Norfolk Boreas Offshore Wind Farm (the sister project to Norfolk Vanguard) within the onshore cable route.

7. Construction of the project would be anticipated to commence between 2020 and 2021 for the onshore works, and around 2024 for the offshore works.

8. The DCO application was submitted by Norfolk Vanguard Limited on 26th June 2018 and was accepted for examination by the Planning Inspectorate on the 24th July 2018.

1.2 Purpose of this Document

9. This document provides information on inconsistencies and errors identified in the Norfolk Vanguard application documents. These inconsistencies are all considered to be non-material. Note that very minor typographic (or similar) errors which do not hinder the understanding of the information presented are not included in this document.

2 APPLICATION DOCUMENTS ERRATA LIST

10. A full list of errata identified in the ES and other application documents is provided in Table 2.1

Table 2.1 Errata List

Ref no.	Document	Chapter	Impact / Section	Sub-section	Original Information	Correction
8.1	ES (document 6.1)	8 Marine Physical Processes and 11 Fish and Shellfish Ecology	Various	Various	Refers to the CWind (2017 unpublished)	This reference is from PEIR and should have been updated to Appendix 5.1 of the ES where the CWind report is provided
21.1	ES (document 6.1)	21 Land Use	21.6 Existing Environment	21.6.3 Agricultural Land Classification (ALC)	67. The majority of the onshore cable route and mobilisation zones cross ALC Grades 2 and 3. North east of Dereham, the onshore cable route crosses some ALC Grade 4 land.	The eastern end of the cable route and landfall also falls within ALC Grade 1. In addition, the Natural England ALC dataset no longer differentiates between grade 3a and 3b agricultural land. As a worst case it is assumed that all grade 3 land permanently lost could be grade 3a and therefore of high sensitivity
21.2	ES (document 6.1)	21 Land Use	21.7.6 Potential Impacts during Operation	21.7.6.2 Impact 2: Permanent change to land use 21.7.6.2.2 Onshore project substation	189. The onshore project substation is proposed on land classified as ALC grade 3, which is considered to be of medium sensitivity.	As above, the onshore project substation is proposed on land assumed to be ALC grade 3a, which is considered to be of high sensitivity.
21.2	ES (document 6.1)	21 Land Use	21.7.6 Potential Impacts during Operation	21.7.6.2 Impact 2: Permanent change to land use 21.7.6.2.4 Impact significance	192. Private agreements will be sought between Norfolk Vanguard Limited and relevant landowners/occupiers regarding any permanent loss of land incurred as a direct consequence of the operation phase of the project. The predicted residual impact is expected to reduce to **negligible**.	As above, the onshore project substation is proposed on land assumed to be ALC grade 3a, which is a high sensitivity receptor. As such, the residual impact would be expected to be **minor adverse** significance, rather than negligible.
21.3	ES (document 6.1)	21 Land Use	21.7.6 Potential Impacts during Operation	21.7.6.3 Impact 3: Environmental Stewardship Schemes (ESS)s 21.7.6.3.3 Impact significance	195. Without mitigation, the greatest magnitude of effect arising from one element of the onshore infrastructure is negligible, on a receptor with a medium sensitivity. The predicted impact is therefore **negligible**. No	According to the significance table a negligible magnitude with medium sensitivity is **minor adverse** not negligible. This remains an impact that is not significant and mitigation is not

Ref no.	Document	Chapter	Impact / Section	Sub-section	Original Information	Correction
					further mitigation is therefore proposed.	proposed.
22.1	ES (document 6.1)	22 Ecology	22.7.6 Potential Impacts during Construction	22.7.6.2 Impact 2: Impacts to non-statutory designated sites 22.7.6.2.7 Impact following mitigation	343. If these mitigation measures are applied, the greatest magnitude of effect upon a non-statutory designated site is expected to be negligible, resulting in a **negligible** impact	Non-statutory sites are designated medium importance, therefore a negligible magnitude on medium importance results in a **minor adverse** residual impact not a negligible impact. This remains a residual impact that is not significant and mitigation is not proposed.
22.2	ES (document 6.1)	22 Ecology	22.8.1 Cumulative Impacts during Construction	22.8.1.2 Cumulative Impact 2: Impacts to non-statutory designated sites	594. As such, cumulative effects are of the same significance set out in section 22.7 (**negligible**). 595. As such, cumulative effects are of the same significance set out in section 22.7 (**negligible**).	As a result of the above change this would be **minor adverse** rather than negligible.
22.3	ES (document 6.1)	22 Ecology	22.7.6 Potential Impacts during Construction	22.7.6.3 Impact 3: Arable land 22.7.6.3.5 Impact without mitigation	349. Without mitigation, the greatest magnitude arising from one element of the onshore project area is low magnitude on a high importance receptor, resulting in an impact of at worst **moderate adverse** significance.	Paragraph 349 states the highest magnitude is low, however prior paragraphs (344 - 348) describe the magnitude as negligible. As such the impact would be **minor adverse** rather than moderate adverse.
22.4	ES (document 6.1)	22 Ecology	22.7.6 Potential Impacts during Construction	22.7.6.3 Impact 13: Great crested newts 22.7.6.13.7: Impact following mitigation (unsurveyed areas)	508. Following implementation of these mitigation measures, the potential magnitude of effect on great crested newts is reduced to low, resulting in an impact of **moderate adverse** significance will be expected following mitigation.	Paragraph 508 states the magnitude of effect would reduce to low after mitigation, however the efficacy of the mitigation would be the same as that identified for the surveyed areas, i.e. magnitude of effect would reduce to negligible. As such the residual impact would be **minor adverse** rather than moderate adverse.

Ref no.	Document	Chapter	Impact / Section	Sub-section	Original Information	Correction
22.5	ES (document 6.1)	22 Ecology	22.8.2 Cumulative Impacts during Operation	22.8.2.1 Cumulative Impact 1: Disturbance to habitats and species from maintenance activities	622. As such, cumulative effects are of the same significance set out in section 22.7 (**negligible**).	As above for section 22.7.7 Potential Impacts during Operation, the impact is assessed as being **minor adverse** not negligible.
22.6	ES (document 6.1)	22 Ecology	22.8.2 Cumulative Impacts during Operation	22.8.2.2 Cumulative Impact 2: Disturbance to fauna from operational lighting and noise	623. As such, cumulative effects are of the same significance set out in section 22.7 (**negligible**).	As above for section 22.7.7 Potential Impacts during Operation, the impact is assessed as being **minor adverse** not negligible.
22.7	ES (document 6.1)	22 Ecology	22.11 Summary	Table 22.32	Summary table inconsistencies as per above	
23.1	ES (document 6.1)	23 Onshore Ornithology	23.7.7 Potential Impact during Operation	23.7.7.1 Impact 1: Disturbance to habitats and species from maintenance activities. 23.7.7.1.3 Impact without mitigation	249. Without mitigation, the greatest magnitude arising from one element of the onshore project area is negligible magnitude on at worst medium importance receptors, resulting in an impact of at worst **negligible** significance.	A negligible magnitude on a medium importance receptor is **minor adverse** significance rather than negligible. This remains an impact that is not significant and mitigation is not proposed.
23.2	ES (document 6.1)	23 Onshore Ornithology	23.7.7 Potential Impact during Operation	23.7.7.2 Impact 2: Disturbance onshore ornithology from operational lighting and noise 23.7.7.2.3 Impact without mitigation	253. Without mitigation, the greatest magnitude arising from one element of the onshore project area is negligible magnitude on at worst medium importance receptors, resulting in an impact of at worst **negligible** significance.	As above, negligible magnitude on a medium importance receptor is **minor adverse** significance rather than negligible. This remains an impact that is not significant and mitigation is not proposed.
23.3	ES (document 6.1)	23 Onshore Ornithology	23.11 Summary	Table 23.32	Summary table inconsistencies as per above	
28.1	ES (document 6.1)	28 Onshore Archaeology and	28.7.7 Potential Impact during	Section 28.7.7.1.3; and Section	Further analysis of the project visualisations has made it apparent that the project infrastructure visible (albeit to a minimal perceptibility) requires	

Ref no.	Document	Chapter	Impact / Section	Sub-section	Original Information	Correction
		Cultural Heritage	Operation; 28.8.2 Cumulative Impacts; 28.11 Summary; 28.7 Appendix;	28.8.2.1	further consideration with regards to Indirect Impact on the Setting of Heritage Assets Section 2.1 of this document provides further explanation and updates to the original assessment, as appropriate.	
30.1	ES (document 6.1)	30 Tourism and Recreation	30.7.5 Potential Impacts During Construction	30.7.5.8 Impact 8: Obstruction or disturbance to users of Public Rights of Way (PRoW), paths and non-motorised routes	231. The installation of the cable within the ducts will require cable pulling activities undertaken at jointing bays located along the cable route. The locations of the jointing bays are yet to be determined but will be chosen based on site selection to avoid sensitive features, including the presence of paths and non-motorised routes, wherever possible and engineering considerations. Impacts during cable pulling activities are therefore anticipated to be negligible, depending on the location of jointing pits and access requirements.	Paragraph should read jointing pits instead of jointing bays.
30.2	ES (document 6.1)	30 Tourism and Recreation	30.7.5 Potential Impacts During Construction	30.7.5.8 Impact 8: Obstruction or disturbance to users of PRoW, paths and non-motorised routes	227. 45 Medium value PRoWs are interacted, which include the PRoWs and cycleways outlined in Table 30.23. The magnitude of effect is assessed as low because only 20 of these interactions have the possibility of requiring a temporary closure, as defined in Table 30.8, and therefore the impact significance on the majority of PRoWs is assessed as minor adverse on average as defined in Table 30.9	Paragraph should read: "45 medium and high value PRoWs are interacted, which include the high value footpaths and cycleways outlined in Table 30.25. The PRoWs outlined in Table 30.25 are assessed as high value using the criteria defined in Table 30.8. The magnitude of effect is assessed as no impact for most, negligible for one and low for one, as defined in Table 30.9, and therefore the significance of impact on these PRoWs would be mostly negligible with one moderate

Ref no.	Document	Chapter	Impact / Section	Sub-section	Original Information	Correction
						adverse."
30.3	ES (document 6.1)	30 Tourism and Recreation	30.11 Summary	N/A	Construction Impact 4 states minor magnitude. Construction Impact 8 states negligible to minor adverse significance. Operation Impact 2 states negligible magnitude and negligible significance. Sensitivity is missing for two of the cumulative impacts.	Construction Impact 4 should state low magnitude. Construction Impact 8 should conclude moderate to minor adverse significance. Operational Impact 2 should conclude low magnitude and minor adverse significance as in the text above. Sensitivity should be low for disruption to marine activity and medium for deterioration of bathing waters.
31.1	ES (document 6.1)	31 Socio-economics	31.4 Methodology	31.4.5.4 Magnitude	Table 31.11 Definitions of magnitude levels for employment - Definitions for Direct and Indirect should all use the following definitions: High = Change of + or –2% of baseline employment Medium = Change of + or –1to 2% of baseline employment Low = Change of + or –1% of baseline employment Negligible = No measurable change in local employment	See corrections 31.2 to 31.8 below
31.2	ES (document 6.1)	31 Socio-economics	31.7.5 Potential Impacts during Construction	31.7.5.1.1 Onshore construction magnitude	Assessment based on the magnitude from Table 31.11 (see correction 31.1 above)	Para 209 1st bullet point - magnitude would change from negligible to low.
31.3	ES (document 6.1)	31 Socio-economics	31.7.5 Potential Impacts during Construction	31.7.5.1.2 Offshore construction magnitude	Assessment based on the magnitude from Table 31.11 (see correction 31.1 above)	Para 218 1st bullet point - magnitude would change from negligible to medium.
31.4	ES (document 6.1)	31 Socio-economics	31.7.5 Potential Impacts during Construction	31.7.5.1.4 Direct and indirect job creation	Assessment based on the magnitude from Table 31.11 (see correction 31.1 above)	Para 227 1st bullet point - significance would change from minor to major beneficial.

Ref no.	Document	Chapter	Impact / Section	Sub-section	Original Information	Correction
				significance		
31.5	ES (document 6.1)	31 Socio-economics	31.1.1 Potential Impacts during Operation	31.7.6.1 Impact 1: Onshore direct and supply chain job creation	Assessment based on the magnitude from Table 31.11 (see correction 31.1 above)	Para 252 2nd bullet point - significance would change from high to low beneficial.
31.6	ES (document 6.1)	31 Socio-economics	31.1.1 Potential Impacts during Operation	31.7.6.1 Impact 1: Onshore direct and supply chain job creation	Assessment based on the magnitude from Table 31.11 (see correction 31.1 above)	Para 257 1st bullet point - magnitude would change from low to minor.
31.7	ES (document 6.1)	31 Socio-economics	31.8 Cumulative Impacts	31.8.1 Cumulative Consideration of Job Creation during Construction	Assessment based on the magnitude from Table 31.11 (see correction 31.1 above)	Para 274 1st bullet point - magnitude would change from low to high.
31.8	ES (document 6.1)	31 Socio-economics	31.8 Cumulative Impacts	31.8.1 Cumulative Consideration of Job Creation during Construction	Assessment based on the magnitude from Table 31.11 (see correction 31.1 above)	Para 275 1st bullet point - magnitude would change from minor to major beneficial.
5.3.1	Information to Support Habitats Regulations Assessment (HRA) report	Section 8 Marine mammals	8.3.1.1.2	Table 8.17	The maximum seasonal area average for single piling in NV West is 1.3% of SNS cSAC winter area	Seasonal % for SNS cSAC winter area for single piling in NV West should be 2.6% not 1.3%. The conclusion of no adverse effect on site integrity is unchanged due to not exceeding the threshold of 10% of the average seasonal component of the cSAC area over the duration of that season.
5.3.2	Information to Support HRA report	7. Offshore SAC Annex I Habitats	7.3.1. Embedded mitigation	7.3.1.4. Sediment disposal Paragraph 324	Sediment would not be disposed of within 100m of Sabellaria reef in accordance with advice from Natural England (Expert Topic Group meeting 31st January 2018).	Sediment would not be disposed of within 50m of Sabellaria reef in accordance with advice from Natural England (email 13th February 2018).
5.3.3	Information to Support HRA report	7. Offshore SAC Annex I Habitats	7.3.2. Worst Case Scenario	7.3.2.4. Summary of worst case scenarios	Boulder clearance – 0.002km^2 (up to 100 boulders of 5m diameter)	This is an error and should be the same as the following values in the ES:

Ref no.	Document	Chapter	Impact / Section	Sub-section	Original Information	Correction
				Table 7.4		Boulder clearance – 0.0004km^2 (up to 22 boulders of 5m diameter) This results in no change to the total footprint of 9.5km^2
8.11.1	Outline Offshore Operation and Maintenance Plan	N/A	N/A	Appendix 1	Maximum of **5** failures per year: • 2 x array cables (assume the whole length of an array cable is replaced –max length 6km based on turbine spacing) • 1 x Interconnector cables (assume a few hundred metres subject to repair) • 2 x Export cables (assume 300 metres subject to repair)	This is an error and should be the same as the following values in the ES: Maximum of **4** failures per year: • 2 x array cables (assume the whole length of an array cable is replaced –max length 6km based on turbine spacing) • 1 x Interconnector cables (assume a few hundred metres subject to repair) • 1 x Export cables (assume 300 metres subject to repair)

2.1 Onshore Archaeology and Cultural Heritage

2.1.1 Introduction

11. The Environmental Impact Assessment (EIA) undertaken in support of the DCO application for the project included a heritage settings assessment; this is contained within Chapter 28 Onshore Archaeology and Cultural Heritage and Appendix 28.7 (Document reference numbers 6.2.28 and 6.2.28.7). As stated in the Errata list (Table 2.1, ref no. 28.1), further consideration with regards to Indirect Impact on the Setting of Heritage Assets is required, as outlined in the following sections.

2.1.2 Overview of Amendment

12. As part of that assessment, a number of heritage-specific viewpoints were identified through consultation in the Evidence Plan Process, and captured for further consideration in the ES chapter (reproduced in Table 2.2 below), with further analysis and illustration included as part of Appendix 28.7. The assessment of the potential for indirect (non-physical) impacts on heritage asset settings to arise predominantly took into consideration intervisibility of the setting with the proposed onshore project substation and associated onshore infrastructure (National Grid Substation Extension and Overhead Line Modification.)

Table 2.2 Cultural Heritage Viewpoints

Viewpoint Name	Cultural Heritage Viewpoint No.	British National Grid (BNG)	
		Easting	Northing
Church of St Andrew, Bradenham (34)	CH1	591711	309148
All Saints, Necton (36)	CH2	587872	309726
Old Hall, Fransham (58)	CH3	590191	311793
The Church of St Mary, Bradenham (1825)	CH4	593069	308410
The Church of St Andrew, Holme Hale (1826)	CH5	588711	307543
Hale Road, East of Holme Hale	LVIA Viewpoint (10)	590576	307795

13. The results of the submitted heritage settings assessment, as reported within Chapter 28, were based on a review of photomontages from each viewpoint and concluded that none of the heritage assets outlined in Table 2.2 were found to share intervisibility with the onshore project substation and associated infrastructure. On this basis, no impacts to heritage setting (and associated significance) were identified as arising from the project and no further mitigating action was considered to be required.

14. The submitted assessment of Cultural Heritage Viewpoint No. 1 (CH1) identified a small corner section of the proposed Norfolk Boreas substation as being visible in the photomontage view (seen at a distance of *c.* 1.6 km) from the northern most area of the grounds of the Church of St Andrew, Bradenham (34); a matter which was noted would be subject to consideration separately as part of the Norfolk Boreas assessment (approximately one year behind Norfolk Vanguard's development timeline).

15. However, following further analysis of the visualisations prepared for CH1, as part of the Norfolk Boreas assessment, it has become apparent that the project infrastructure visible (albeit to a minimal perceptibility) within the photomontage comprises a combination of both the Norfolk Boreas and Norfolk Vanguard onshore project substations, and therefore requires consideration as part of the overall application for Norfolk Vanguard.

2.1.3 Potential Impacts

16. As a result of the above, a revised assessment has been undertaken in relation to the following sections from Chapter 28 Onshore Archaeology and Cultural Heritage (and Appendix 28.7:

- Potential Impacts During Operation
  - Section 28.7.7.1.3 - (1) Indirect Impact on the Setting of Heritage Assets (designated and non-designated): Onshore Project Substation and the National Grid Substation Extension and Overhead Line Modification.
- Cumulative Impacts
  - Section 28.8.2.1 - (1) Cumulative Indirect Impact on the Setting of Heritage Assets (designated and non-designated).
- Summary (section 28.11)
- Appendix 28.7

17. These sections are superseded by the assessment presented below:

2.1.3.1 Potential Impacts During Operation

2.1.3.1.1 (1) Indirect Impact on the Setting of Heritage Assets (Designated and Non-Designated)

Onshore Project Substation and the National Grid Substation Extension and Overhead Line Modification

Table 2.3 [Table 28.22 of Chapter 28] Onshore project substation summary of settings assessment outcomes

Name	Settings assessment summary
Church of St. Andrew, Bradenham (34)	The LVIA zone of theoretical visibility (ZTV) (Chapter 29 Landscape and Visual Impact Assessment, section 29.5.4.1 and Figures 29.5 and 29.6) suggests medium to low intervisibility between the Church and the onshore project substation located approx. 2 km to the north-west. However, during the site visit (December 2017) the Church was noted as being situated in a hollow and although views towards the onshore project substation may be afforded from the top of the Tower, there are no views from ground level, as these are well-screened by intervening topography, vegetation, trees and hedgerows. The site was subsequently visited by the LVIA consultant project team in March 2018 and is included as a representative heritage specific viewpoint location (CH1). The visualisation produced indicates visibility of a small section (glimpsed 'roof-top') of the onshore project substation (visible in the approximate centre of the Norfolk Vanguard substation extent indicated on the CH1 photomontage view) and a number of lightning rods associated with the onshore project substation from the northern-most extent of the church grounds. On the basis of this visibility, the Church of St. Andrew has been taken forward for further heritage setting consideration below. In addition, the visualisation produced from CH1 indicates the dual visibility of the Norfolk Vanguard and Norfolk Boreas substations and associated lightning rods from the grounds of the Church of St Andrew, Bradenham (34). Cumulative indirect impact upon the setting of the church, on the basis of this dual visibility, is considered further below.

18. Viewpoint CH1 (see Appendix 28.7) shows a very small section (glimpsed 'roof-top') of the proposed Norfolk Vanguard substation and a number of masts visible in the photomontage view (in the approximate centre of the Norfolk Vanguard substation extent indicated on the CH1 visualisation as seen at a distance of *c*. 1.6 km) from the grounds of the Church of St Andrew, Bradenham (34).

19. The setting of the church has a rural feel and one of relative isolation, being located away from the main settlement of Bradenham itself. Although there is visibility from the grounds of the church to the onshore project substation and associated masts, based on an assessment of the visualisations generated from CH1, this visibility is minimal. From a landscape perspective, the visibility of the onshore project substation from this location neither re-defines the character of that view nor constitutes a defining feature in the view.

20. From a heritage perspective, the very slight visibility of the onshore project substation from the grounds of the Church of St Andrew is not considered to constitute harm to the heritage significance of the church nor represent any associated loss of appreciation of the heritage assets significance. This indirect (non-physical) impact is therefore considered to represent a negligible magnitude of effect upon the heritage setting of the church, resulting in a **minor adverse** impact significance as a worst case scenario. No additional mitigation is proposed.

Summary

21. No indirect impacts upon the setting of heritage assets are anticipated to be greater than **minor adverse** significance (as a WCS) during operation.

22. For the most part, no impact to heritage setting (and associated heritage significance) has been identified and no further mitigation is considered to be required. With the exception of the Church of St Andrew, Bradenham (34), none of the heritage assets listed in Table 2.2 were found to share visibility or intervisibility with the onshore project substation and associated infrastructure, and due to their distance from these above ground elements of the project and the intervening vegetation, trees, hedgerows, landform and built form, no impact to heritage setting (and associated heritage significance) was identified. No further mitigation is considered to be required.

23. The Church of St Andrew, Bradenham (34), may be subject to an impact of minor adverse significance. The very slight visibility of the onshore project substation from the grounds of the Church of St Andrew is not considered to constitute harm to the heritage significance of the church nor represent any associated loss of appreciation of the heritage assets significance and no further action and no further mitigation is considered to be required.

24. Whilst the impact significance, as presented in the submitted ES chapter text, has been amended from 'no impact' to 'minor adverse' in relation to the onshore project substation, this impact it still regarded as non-significant in EIA terms, and minor adverse would very much represent a precautionary worst case scenario.

2.1.3.2 Cumulative Impacts

2.1.3.2.1 (1) Cumulative Indirect Impact on the Setting of Heritage Assets (Designated and Non-Designated)

25. The photomontage prepared from viewpoint CH1 (Appendix 28.7), located within the northern-most extent of the grounds of the Church of St. Andrew, Bradenham (34), indicates a potential for dual visibility of both the Norfolk Boreas and Norfolk Vanguard onshore project substations and associated masts from this location. There is therefore the potential for a cumulative impact to occur. Despite the

potential visibility of both the Norfolk Boreas and Norfolk Vanguard onshore project substations from this location, in each case it has been concluded that the visibility from the grounds of the church is very slight, and is not considered to constitute harm to the heritage significance of the church nor any associated loss of appreciation of the heritage asset's significance. This cumulative indirect (non-physical) impact is therefore considered to represent an effect of negligible magnitude upon the heritage setting (and associated significance) of the church, resulting in a **minor adverse** impact significance as a worst case scenario. No further mitigation is considered to be required.

26. Whilst the impact significance, as presented in the submitted ES chapter text, has been amended from 'no impact' to 'minor adverse', this impact it still regarded as non-significant in EIA terms, and minor adverse would very much represent a precautionary worst case scenario.

2.1.3.3 Summary (Update of Chapter 28, Section 28.11)

Table 28.27 Potential impacts identified for onshore archaeology and cultural heritage

Potential impact	Heritage asset type	Heritage significance (importance)	Magnitude of effect (change)	Impact significance (significance of impact)	Next steps: post-consent initial informative stages of mitigation / subsequent mitigation measures (as required)	Residual impact
Operation						
(1) Indirect impact on the setting of heritage assets (designated and non-designated)	Designated and certain non-designated heritage assets	High	Negligible	Minor adverse (as a WCS), but generally No Impact	None required.	**Minor adverse (as a WCS), but generally No impact**
Cumulative: Operation						
(1) Cumulative Indirect Impact on the Setting of Heritage Assets (designated and non-designated)	Designated and certain non-designated heritage assets	High	Negligible	Minor adverse (as a WCS)	None required.	**Minor adverse (as a WCS)**

2.1.4 Update to Appendix 28.7 Heritage Settings Assessment (Onshore Project Substation and Associated Infrastructure Related) Workings

27. Appendix 28.7 includes a table outlining the Heritage Settings Assessment (onshore project substation and associated infrastructure related) workings. The relevant section of Appendix 28.7 is now superseded on the basis of the updated interpretation of the photomontage produced for viewpoint CH1, and the relevant section has been reproduced and amended accordingly below.

HERITAGE SETTINGS ASSESSMENT (ONSHORE PROJECT SUBSTATION AND ASSOCIATED INFRASTRUCTURE RELATED) WORKINGS:			
Heritage Asset: RHDHV ID NO. / Other ID NO's.	**Reason for Initial Consideration.**	**Description of the Heritage Assets and their Settings / Comment on Intervisibility / Identification of any Further Action Required.**	**Supporting Visuals / Visualisations, if applicable.**
Church of St. Andrew, Bradenham (34). **List Entry No. = 1342620** **NHER = 8725**	**Grade I Listed Building**. **Highly Designated Heritage Asset in Proximity to the Onshore Project Substation**. *LVIA Cultural Heritage Specific Viewpoint Location: CH1.*	The Parish Church of St. Andrew, Bradenham was first listed in June 1960. The building represents a medieval and later church, recorded as being built on the same site as an earlier Saxon church, and some of the building material has been reused in the present building, which was built around 1300. A new tower was built between 1484 and 1519 when the nave and aisle roofs were also heightened and aisle windows changed. As with many other churches of this period, other restorations were made in the 19th century. The setting of the church has a rural feel and one of relative isolation, being located away from the main settlement of Bradenham itself. The LVIA ZTV (Chapter 29, Figure 29.5) suggests medium to low intervisibility between the building and the onshore project substation located approx. 2 km to the north-west. However, during the site visit (December 2017) the church was noted as being situated in a hollow and although views towards the substation site may be afforded from the top of the tower, views from ground level are well-screened by intervening topography, vegetation, trees and hedgerows. The tower is not believed to be publicly accessible. Despite this, visualisations prepared for CH1 (provided within the submitted Appendix 28.7) suggest some low-level visibility of both the Norfolk Vanguard and Norfolk Boreas onshore project substations and associated infrastructure. The visualisation for CH1 indicates very slight visibility of the Norfolk Vanguard onshore project substation (glimpsed 'roof-top' section in the approx. centre of the Norfolk Vanguard substation extent indicated on the CH1 visualisation) and a number of associated masts, from the northern-most extent of the grounds of the church. The visualisation produced for CH1 also shows a very small corner section of the proposed Norfolk Boreas substation (at approximately the centre of the Norfolk Boreas substation extent indicated). Views of the Norfolk Boreas onshore project substation are, however, largely concealed by intervening tree cover, with visibility unlikely in the summer months due to an increased concentration of tree foliage. Despite the visibility from the grounds of the church to the onshore project substation(s), the visualisations generated for viewpoint CH1 indicate that this visibility is minimal. From a landscape perspective, the visibility of the onshore project substation(s) from this location neither re-defines the character of that view nor constitute a defining feature in the view. From a heritage settings perspective, the very slight visibility of the onshore project substation(s) from the northern-most extent of the grounds of the Church of St Andrew is not considered to constitute harm to the heritage significance of the church nor any associated loss of appreciation of the heritage asset's significance. **Further action:** This impact is considered to represent a negligible effect upon the heritage setting of the church, resulting in a minor adverse impact significance as a worst case scenario. Although the visibility of the onshore project substation(s) is only very slight from the grounds of the Church of St Andrew (an impact level considered non-significant in EIA terms).	See Figure 28.1, map 9 and Figure 28.5 +Cultural Heritage Viewpoint No. CH1.  Church of St. Andrew, Bradenham (34).  Photo looking *c.* NW from the entrance to the grounds of the Church of St. Andrew, Bradenham (34). Taken in the general direction of the onshore project substation site.