

East Anglia TWO Offshore Windfarm

Appendix 9 Phase 4 Consultation (Part 2)

Consultation Report

Applicant: East Anglia TWO Limited
Document Reference: 5.1.9
SPR Reference: EA2-DWF-ENV-REP-IBR-000210_009 Rev 01
Pursuant to: Section 37(3)(c) of The Planning Act 2008

Author: Royal HaskoningDHV
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East Anglia TWO Offshore Windfarm

Appendix 9.14

Non-Technical Summary of the Preliminary Environmental Information Report

Consultation Report

Applicant: East Anglia TWO Limited

Document Reference: 5.1.9.14

SPR Reference: EA2-DWF-ENV-REP-IBR-000210_009_14 Rev 01

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East Anglia TWO Offshore Windfarm

Non-Technical Summary

Preliminary Environmental Information
Volume 1

Document Reference: EA2-DEVWF-ENV-REP-IBR-000795

Prepared by:	Checked by:	Approved by:

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Glossary of Acronyms

CAA	Civil Aviation Authority
CCS	Construction Consolidation Site
CfD	Contract for Difference
CoCP	Code of Construction Practice
cSAC	candidate Special Area of Conservation
DCO	Development Consent Order
Defra	Department for Environment, Food and Rural Affairs
EIA	Environmental Impact Assessment
ES	Environmental Statement
FTE	Full Time Equivalent
km	Kilometres
MW	Megawatts
M	Metres
NALEP	New Anglia Local Enterprise Partnership
NPS	National Policy Statements
NTS	Non-Technical Summary
NSIP	Nationally Significant Infrastructure Project
OWF	Offshore Windfarm
PEIR	Preliminary Environmental Information Report
PRoW	Public Rights of Way
SCC	Suffolk County Council
SCI	Site of Community Importance
SCDC	Suffolk Coastal and District Council
SoCC	Statement of Community Consultation
SPA	Special Protection Area
SPR	ScottishPower Renewables
WDC	Waveney District Council
ZAP	Zone Appraisal and Planning
ZEA	Zone of Environmental Appraisal
ZTA	Zone Technical Appraisal

Glossary of Terminology

Applicant	East Anglia TWO Limited.
Construction consolidation sites	Compounds which will contain laydown, storage and work areas for onshore construction works. The HDD construction compound will also be referred to as a construction consolidation site.
Construction, operation and maintenance platform	A fixed structure required for construction, operation and maintenance personnel and activities.
Development area	The area comprising the Proposed Onshore Development Area and the Offshore Development Area
East Anglia TWO project	The proposed project consisting of up to 75 wind turbines, up to four offshore electrical platforms, up to one construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
East Anglia TWO windfarm site	The offshore area within which wind turbines and offshore platforms will be located.
European site	Sites designated for nature conservation under the Habitats Directive and Birds Directive, as defined in regulation 8 of the Conservation of Habitats and Species Regulations 2017 and regulation 18 of the Conservation of Offshore Marine Habitats and Species Regulations 2017. These include candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and Special Protection Areas.
Evidence Plan Process	A voluntary consultation process with specialist stakeholders to agree the approach to the EIA and the information required to support HRA.
Horizontal directional drilling (HDD)	A method of cable installation where the cable is drilled beneath a feature without the need for trenching.
Inter-array cables	Offshore cables which link the wind turbines to each other and the offshore electrical platforms.
Jointing bay	Underground structures constructed at regular intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts.
Landfall	The area (from Mean Low Water Springs) where the offshore export cables would make contact with land, and connect to the onshore cables.
Link boxes	Underground chambers or above ground cabinets next to the cable trench housing electrical earthing links.
Mitigation areas	Areas captured within the Development Area specifically for mitigating expected or anticipated impacts.
Monitoring buoys	Buoys to monitor in situ condition within the windfarm, for example wave and metocean conditions.
National Grid infrastructure	A National Grid substation, connection to the existing electricity pylons and National Grid overhead line realignment works which will be consented as part of the proposed East Anglia TWO project Development Consent Order

	but will be National Grid owned assets.
National Grid overhead line realignment works	Works required to upgrade the existing electricity pylons and overhead lines to transport electricity from the National Grid substation to the national electricity grid
National Grid overhead line realignment works area	The proposed area for National Grid overhead line realignment works.
National Grid substation	The substation (including all of the electrical equipment within it) necessary to connect the electricity generated by the proposed East Anglia TWO project to the national electricity grid which will be owned by National Grid but is being consented as part of the proposed East Anglia TWO project Development Consent Order.
National Grid substation location	The proposed location of the National Grid substation.
Natura 2000 site	A site forming part of the network of sites made up of Special Areas of Conservation and Special Protection Areas designated respectively under the Habitats Directive and Birds Directive.
Offshore cable corridor	This is the area which will contain the offshore export cable between offshore electrical platforms and landfall jointing bay.
Offshore development area	The East Anglia TWO windfarm site and offshore cable corridor (up to Mean High Water Springs).
Offshore electrical infrastructure	The transmission assets required to export generated electricity to shore. This includes inter-array cables from the wind turbines to the offshore electrical platforms, offshore electrical platforms, platform link cables and export cables from the offshore electrical platforms to the landfall.
Offshore electrical platform	A fixed structure located within the windfarm area, containing electrical equipment to aggregate the power from the wind turbines and convert it into a more suitable form for export to shore.
Offshore export cables	The cables which would bring electricity from the offshore electrical platforms to the landfall.
Offshore infrastructure	All of the offshore infrastructure including wind turbines, platforms, and cables.
Offshore platform	A collective term for the offshore operation and maintenance platform and the offshore electrical platforms.
Onshore cable corridor	The approximately 70m wide swathe within which the onshore cable route will be located. The swathe includes 20m limits of deviation for micro-siting the onshore cable route.
Onshore cable route	This is the approximately 50m wide construction swathe within the 70m wide onshore cable corridor which would contain onshore cables as well as temporary ground required for construction which includes cable trenches, haul road and spoil storage areas.
Onshore cables	The cables which would bring electricity from landfall to the onshore substation. The onshore cable is comprised of up to six power cables and two fibre optic cables.

Proposed onshore development area	The area in which the landfall, onshore cable corridor, onshore substation, mitigation areas, temporary construction facilities (such as access roads and construction consolidation sites), and the National Grid Infrastructure will be located.
Onshore infrastructure	The combined name for all of the onshore infrastructure associated with the proposed East Anglia TWO project from landfall to the connection to the national electricity grid.
Onshore substation	The East Anglia TWO substation and all of the electrical equipment within it.
Onshore substation location	The proposed location of the onshore substation for the proposed East Anglia TWO project.
Platform link cable	An electrical cable which links one or more offshore platforms.
Safety zones	A marine area declared for the purposes of safety around a renewable energy installation or works / construction area under the Energy Act 2004.
Scour protection	Protective materials to avoid sediment being eroded away from the base of the foundations as a result of the flow of water.
Transition bay	Underground structures at the landfall that house the joints between the offshore export cables and the onshore cables.

1 Introduction

1.1 About this Document

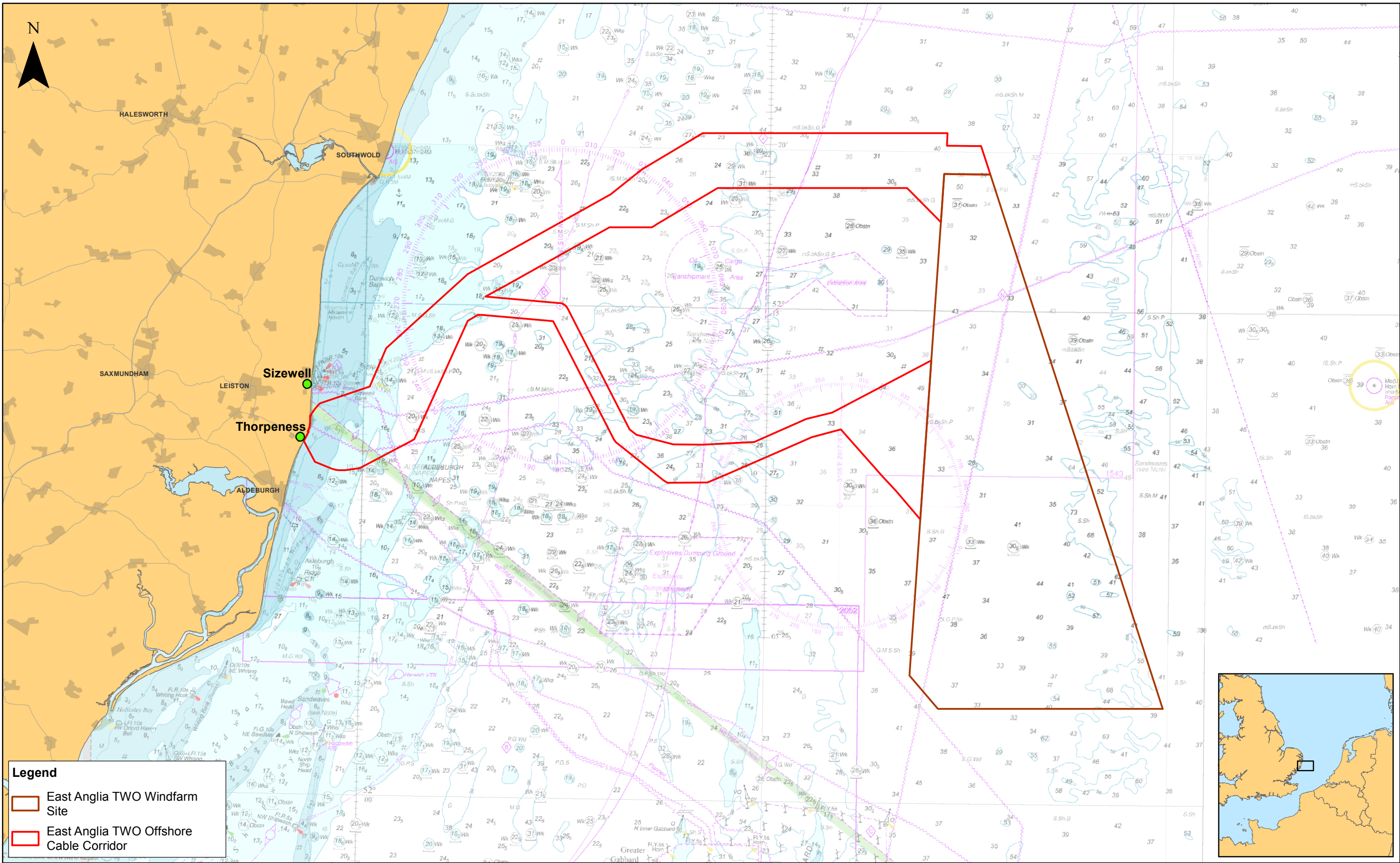
1. This document is the Non-Technical Summary (NTS) of the Preliminary Environmental Information Report (PEIR) for the proposed East Anglia TWO Offshore Windfarm (also known as the proposed East Anglia TWO project). It provides a summary of the proposed East Anglia TWO project, the site selection process and the key findings of the Environmental Impact Assessment (EIA) process to date. The purpose of the EIA is to assess and examine the potential impacts of the proposed East Anglia TWO project on the environment, from construction, operation and decommissioning.
2. The proposed East Anglia TWO project is a Nationally Significant Infrastructure Project (NSIP). Consent to construct, operate and decommission the proposed East Anglia TWO project is therefore being requested from the Secretary of State for Business, Energy and Industrial Strategy, under the Planning Act 2008. The purpose of the PEIR is to provide Preliminary Environmental Information (PEI) which has been gathered to carry out an assessment of the potential significant impacts of the proposed East Anglia TWO project, from construction through to decommissioning. The Environmental Statement (ES) will detail the finalised EIA for the proposed East Anglia TWO project, and will be informed by stakeholder responses to the PEIR. The ES will accompany the application for a Development Consent Order (DCO) and will be submitted to the Planning Inspectorate in 2019.
3. The East Anglia TWO offshore windfarm site is located in the southern North Sea, approximately 31km from its nearest point to the port of Lowestoft and 32km from Southwold. The proposed East Anglia TWO project will have an operational capacity of up to 900MW¹, which is enough to power approximately 742,413² UK households.
4. The proposed East Anglia TWO project would be principally comprised of offshore wind turbines, offshore electrical and construction, operation and maintenance platforms, offshore export cables, onshore cables, an onshore substation, a National Grid substation and National Grid overhead line realignment works. The offshore development area is shown in **Figure 1**. The indicative onshore development area is shown in **Figure 2**.

¹ As measured at point of connection of the onshore cables to the onshore substation

² Calculated taking the number of megawatts (900) multiplied by the number of hours in one year (8,766), multiplied by the average load factor for offshore wind (36.7 %, published by the Digest of United Kingdom Energy Statistics), divided by the average annual household energy consumption (3,900 kWh), giving an equivalent of powering 742,413 homes.

5. The NTS is intended to act as a high level stand-alone document to provide an overview of the potential environmental impacts of the proposed East Anglia TWO project in non-technical terms. For further information, the full PEIR should be referred to. This can be found at:

https://www.scottishpowerrenewables.com/pages/east_anglia_two.aspx



Legend

East Anglia TWO Windfarm Site

East Anglia TWO Offshore Cable Corridor

1	12/10/2018	FC	First Issue.
Rev	Date	By	Comment

1:200,000

Scale @ A3

0

2.5

5

10

Km

Source: © The Crown Estate, 2018. Charts from MarineFIND.co.uk Licence No EK001-0645-MF0095. Not to be used for navigation.

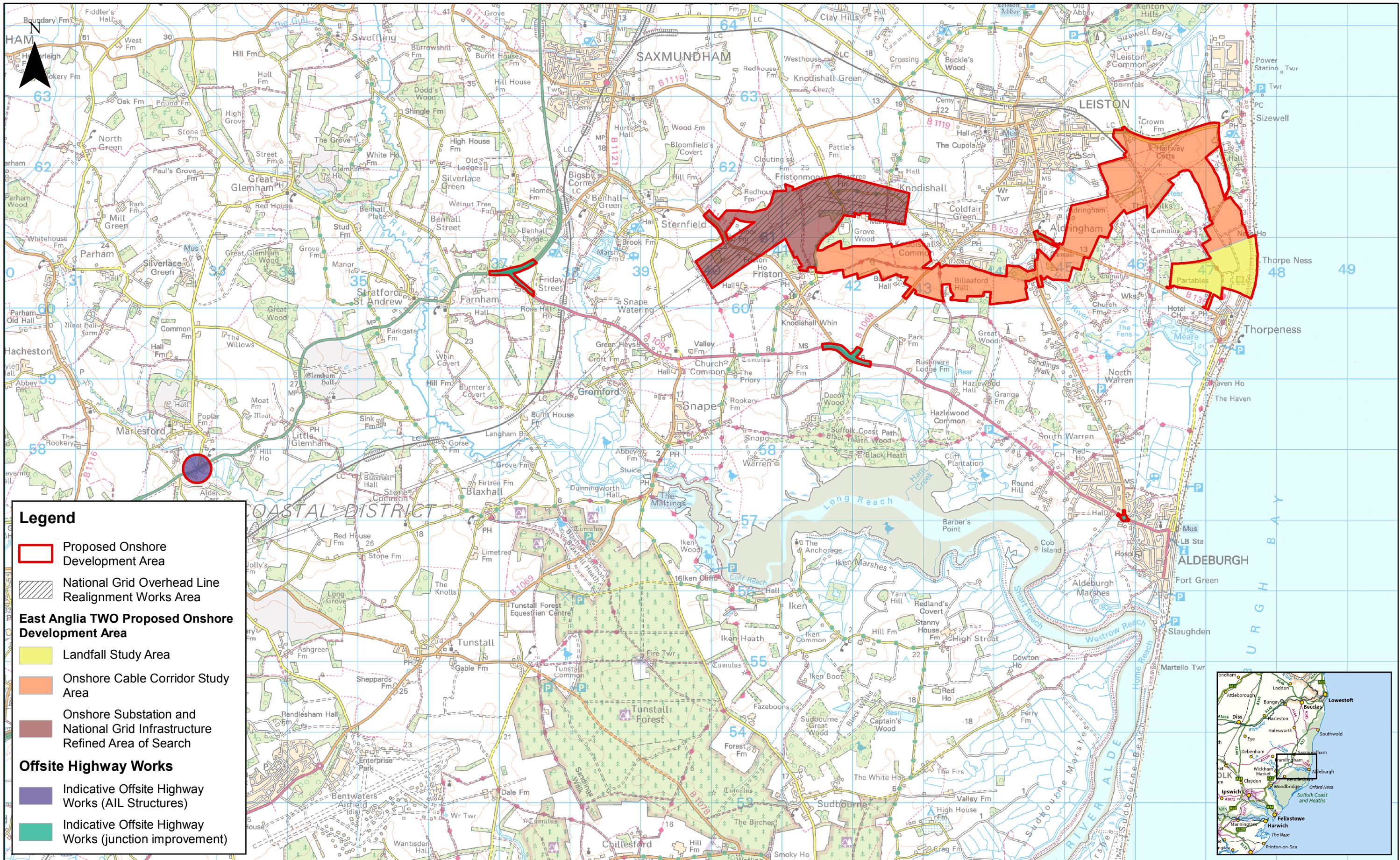
This map has been produced to the latest known information at the time of issue, and has been produced for your information only. Please consult with the SPR Offshore GIS team to ensure the content is still current before using the information contained on this map. To the fullest extent permitted by law, we accept no responsibility or liability (whether in contract, tort (including negligence) or otherwise) in respect of any errors or omissions in the information contained in the map and shall not be liable for any loss, damage or expense caused by such errors or omissions.

East Anglia TWO

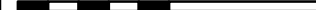
Proposed East Anglia TWO Project Offshore Development Area

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC267		
Rev	1	Datum: WGS 1984	
Date	12/10/18	Projection: Zone 31N	
Figure	1		

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2	15/11/2018	AB	Second Issue.
1	31/07/2018	FC	First Issue.
Rev	Date	By	Comment

1:50,000	
Scale @ A3	 Km

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East Anglia TWO

East Anglia TWO and East Anglia ONE

North Proposed Onshore Development Area

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC111		
Rev	2	Coordinate System: BNG Datum: OSGB36	
Date	15/11/18		
Figure	2		

1.2 Who is Developing the Project

6. The proposed East Anglia TWO project is being developed by East Anglia TWO Limited (the Applicant), which is a wholly owned subsidiary of ScottishPower Renewables (SPR). SPR is part of the Iberdrola Group, a world leader in clean energy and the leading wind energy producer worldwide. SPR is at the forefront of the development of the renewables industry and is contributing towards providing cost effective energy security for the UK, reducing greenhouse gas emissions and maximising economic opportunities through investment in the UK.
7. ScottishPower has become the first major energy company in the UK to leave the carbon economy, marking the end of a ten-year journey to transform from carbon to 100% renewable generation. This means a focus on offshore and onshore wind, along with emerging technologies, with £5.5bn confirmed investment to 2022.
8. SPR is helping to drive the Iberdrola Group's ambition of being the 'Utility of the Future' and, as of 2017, has 40 operational onshore and offshore windfarms in the UK producing over 2,500MW of clean energy. SPR manage all of its operational sites through the innovative and world leading control centre at Whitelee Windfarm, Glasgow. SPR has the ambition that the UK will continue to be a growth market, with the proposed East Anglia TWO project providing a significant next step.
9. SPR is currently building the 714MW East Anglia ONE offshore windfarm approximately 43km off the coast of Suffolk. This £2.5 billion project is planned to deliver energy to meet the annual demand of over 580,000 homes³ and should be fully operational during 2020. This project will be followed by the 1,200MW East Anglia THREE which received development consent in August 2017.
10. The proposed East Anglia ONE North project is also in the pre-application stage and its application programme runs in parallel with the proposed East Anglia TWO project, however they will be submitted as separate DCO applications. The proposed onshore development area, which includes landfall location, onshore cable route, onshore substation location and National Grid infrastructure, has been developed to allow for the construction of both the proposed East Anglia TWO and East Anglia ONE North projects. At this stage it is not known whether both projects would be constructed simultaneously or sequentially. Therefore the onshore topic assessments will include two cumulative assessment scenarios

³ Calculated taking the number of megawatts (714) multiplied by the number of hours in one year (8,766), multiplied by the average load factor for offshore wind (36.7 %, published by the Digest of United Kingdom Energy Statistics), divided by the average annual household energy consumption (3,900 kWh), giving an equivalent of powering 588,981 homes.

which are considered to represent the two worst case scenarios for construction of the onshore infrastructure. These are:

- **Scenario 1** will assess the impacts of the proposed East Anglia TWO and East Anglia ONE North projects being built simultaneously (at the same time); and
- **Scenario 2** will assess the impacts of the proposed East Anglia TWO and East Anglia ONE North projects being built sequentially.

1.3 The Need for the Project

11. Climate change is a global issue which is caused by the increase of carbon emissions into the atmosphere. The proposed East Anglia TWO project would make a significant contribution both to the achievement of UK decarbonisation targets and to global commitments in mitigating climate change. By generating low carbon, renewable electricity in the UK, the proposed East Anglia TWO project will also help to reduce the UK's reliance on imported energy and will increase energy supply security. Further detail is provided on this in PEIR **Chapter 2 Need for the Project** and **Chapter 3 Policy and Legislative Context**.
12. The proposed East Anglia TWO project has the potential to make a substantial contribution to UK 2030 energy targets by meeting nearly 5% of the UK offshore wind cumulative deployment target for 2030⁴. The proposed East Anglia TWO project will also contribute to the economy by providing jobs during all phases of the proposed East Anglia TWO project. A detailed analysis of the socio-economic benefits of the proposed East Anglia TWO project is provided in **Chapter 30 Tourism, Recreation and Socio-Economics**.

1.4 Site Selection and Assessment of Alternatives

13. The site selection and consideration of alternatives is a sequential process of developing an understanding of the area and refining the location options. The following approach to site selection has also allowed the findings of the environmental assessments to guide the evolution of the proposed East Anglia TWO project design and has allowed the plans for the proposed onshore development area to be modified to avoid, reduce or mitigate the potentially adverse impacts as far as practicable.
14. **Chapter 4 Site Selection and Assessment of Alternatives** of the PEIR details the relevant stages of this process.

⁴ In March 2018, the UK offshore wind sector committed to a sector deal which will aim to increase offshore wind capacity to 30GW by 2030.

15. The location of the East Anglia TWO windfarm site was identified using a three stage process:

- Initial zone selection;
 - The Crown Estate identified the former East Anglia Zone as an area suitable for offering 'potential for offshore wind' as part of its Round 3 offshore windfarm zones tendering process in 2008.
 - In 2010 The Crown Estate announced the successful bidders to the Round 3 offshore windfarm zones. East Anglia Offshore Wind (EAOW) a 50:50 joint venture between SPR and Vattenfall Wind Power Ltd, was successful in securing, what was later to be called, the East Anglia Zone, committed to developing 7.2GW of offshore wind renewable energy.
 - After successfully obtaining consent and winning a Contract for Difference (CfD) auction for East Anglia ONE, and successfully submitting the application for consent for East Anglia THREE (now consented), SPR and Vattenfall split the zone. Vattenfall agreed to develop the northern half of the zone and SPR agreed to develop the southern half of the zone. SPR is now solely responsible for East Anglia ONE, East Anglia THREE, the proposed East Anglia TWO and East Anglia ONE North projects, and the zone is referred to as the former East Anglia Zone.
- Zone Appraisal and Planning (ZAP); and
 - The ZAP process for the former East Anglia Zone comprised two key elements:
 - Zone Technical Appraisal (ZTA) focusing on the key physical characteristics of the former East Anglia Zone e.g. water depth and sea bed geology; and
 - Zone Environmental Appraisal (ZEA) focusing on key environmental, social and economic characteristics of the former East Anglia Zone.
 - The ZAP Process was based upon a number of site specific surveys and desk-based assessments of publicly available and historical data. The key constraints considered in the ZEA and ZTA were:
 - Civil and military radar coverage and helicopter main routes;
 - Infrastructure;
 - Benthic habitats (including those listed in Annex I of the Habitats Directive);
 - Seascape and visual amenity;

- Commercial and natural fisheries activity;
 - Ornithology;
 - Conservation designations;
 - Shipping and navigation;
 - Marine archaeology;
 - Physical processes; and
 - Underwater noise.
 - The ZAP Process also considered the following hard constraints to development within the former East Anglia Zone which were deemed to make the area unsuitable for wind turbines:
 - Oil and gas platforms and pipelines;
 - Active subsea cables;
 - International Maritime Organisation Deep Water Routes; and
 - Naval Maritime graves.
 - From the review of the initial baseline data, 11 potential Development Areas were identified as the least constrained parts of the former East Anglia Zone. These areas were further assessed by EAOW in order to identify a smaller number of preferred development areas.
 - Site specific selection.
 - The ZAP process identified the East Anglia TWO broad area as being an area with a relatively low number of development constraints, both technical and environmental.
 - The ZAP process did not highlight any major constraints within the East Anglia TWO windfarm site that would prevent development. As such this site was chosen by SPR to be taken through the consenting process.
16. Possible landfall locations were identified between Sizewell A (Sizewell Beach) and Thorpeness (**Figure 1**) and an engineering feasibility study was commissioned to review the landfall options in terms of construction and cost. The study showed that the coastline's main uncertainty is in terms of longer change in coastal processes and the Applicant has taken a conservative precautionary approach and committed to setting back the landfall transition bays to the potential 100-year erosion prediction line. The landfall refined area of search is a small section of the Suffolk coastline north of Thorpeness.
17. Eight potential offshore cable routeing options between the East Anglia TWO windfarm site and landfall location were identified and an assessment was

undertaken to better understand the risks associated with each of these routing options. The selected cable route was the preferred choice in terms of both engineering and environmental constraints, in particular in avoiding the geological Coralline Crag sea bed feature. This resulted in identification of two potential offshore cable routing options for the East Anglia TWO windfarm site which allowed for connection either to north (northern route) or south (southern route), with both routes having a common landfall and approach to landfall.

18. The location of the proposed East Anglia TWO onshore substation was driven by the offer given to SPR by National Grid for a grid connection in the vicinity of Sizewell and Leiston, Suffolk, and the initial onshore study area encompassed an area within a 1km buffer of the overhead line route into Sizewell. Within the onshore study area, seven zones were identified as potential substation sites, based on available space to accommodate the required project. Additionally, a target buffer of 250m from residential properties was applied as a proxy for minimising disturbance to residents. The seven potential substation zones were scored using a Red / Amber / Green assessment against criteria agreed with statutory consultees. These included archaeology / heritage, ecology, landscape, hydrology and hydrogeology, engineering, community, landscape and visual, property and planning. The culmination of these workstreams allowed the Applicant to decide that the substation zone northwest of Friston is the preferred zone. Further work was then undertaken to determine the arrangement of the onshore substation and National Grid infrastructure (to be consented as part of the proposed East Anglia TWO project) within this chosen zone (**Figure 2**).
19. A phase of pre-application consultation was undertaken in response to LPA non-statutory responses from the phase 3 consultation to further consider a potential substation site on the EDF Energy estate. This consultation phase ran from September to November 2018 to consider an alternative site at Broom Covert, Sizewell. A project decision was made to retain the Grove Wood, Friston site for the location of the onshore substations.
20. The Broom Covert, Sizewell site was not taken forward for the following reasons:
 - As a responsible developer, SPR takes a balanced view towards site selection at all times using its industry leading legal advisors who draw on national planning guidance and industry leading technical advisors, in addition to the company's project experiences, notably in the successful development of East Anglia ONE and East Anglia THREE offshore wind projects.
 - SPR received over 600 responses to consultation from members of the public, local interest groups, and statutory stakeholders. Feedback was

received in relation to both the Grove Wood, Friston site and the Broom Covert, Sizewell, site. This consultation, for the Broom Covert site, highlighted concerns regarding proposed substation impacts on the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB) and therefore compliance with National Policy Statements.

- The Broom Covert, Sizewell site is within an AONB and at a sensitive location due to the AONB being both narrow in width and having already had its landscape character influenced and adversely affected by the development of large-scale energy generation and transmission infrastructure in the immediate vicinity. Development, including screening and mitigation, at Broom Covert, Sizewell is likely to have a significant effect on openness, tranquillity, views and character of the AONB. This erosion of the special qualities and the small scale of this part of the AONB increases its sensitivity to further effects.
 - The Grove Wood, Friston, site lies outside the AONB and is not in a locally designated landscape.
 - In addition to landscape implications, consultee responses also highlighted the potential interaction of the Broom Covert, Sizewell, site with internationally and nationally designated nature conservation sites. Drainage implications in relation to the Sizewell Marshes nationally protected Site of Special Scientific Interest were also highlighted by several respondents.
21. It is SPR's position based on extensive advice and this further stakeholder engagement that the Grove Wood, Friston site offers on balance the most appropriate option for substation development. This position is based on policy guidance presented within EN-1.
22. Where possible, consultation responses to the PEIR will form the basis of further project design refinement and micro-siting associated with the offshore infrastructure, landfall, onshore cable route, onshore substation and National Grid infrastructure; and associated public highway accesses, offsite highway improvement works, landscape bunding, landscape planting, siting of CCSs, etc.
23. The results of consultation, discussions with landowners and the environmental baseline surveys will be micro-sited, where possible to avoid environmental and landowner constraints, which will form part of the proposed onshore development area presented within the ES.

1.5 The Environmental Impact Assessment (EIA) Process

24. The EIA considers all relevant topics under three general areas of physical environment, biological environment and human environment. The topics to be

included in the EIA were agreed with the Planning Inspectorate and other stakeholders through the scoping process, with the Planning Inspectorate providing a Scoping Opinion in December 2017 which is available at:

<https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010078/EN010078-000067-EAN2%20-%20Scoping%20Opinion.pdf>

25. The findings to date of the EIA for the proposed East Anglia TWO project have been identified in the PEIR. As part of the process, a detailed description of the current baseline (existing environment) of the offshore development area and proposed onshore development area has been identified, through a combination of desk based studies, consultation and site-specific surveys.
26. All potential impacts of the construction, operation or decommissioning of the proposed East Anglia TWO project have been identified and an assessment made on the significance of each potential impact using a standardised approach by EIA specialists.
27. Where the impact assessment identifies that an aspect of the development is likely to give rise to significant environmental impacts, mitigation measures are proposed to avoid impacts or reduce them to acceptable levels and, if possible, to enhance the environment. Mitigation will be agreed through ongoing consultation with the relevant authorities.
28. The process also considers:
 - Inter-relationships, where impacts to one receptor can have a knock-on impact on another (for example an impact on a fish population may lead to reduced prey for birds and marine mammals);
 - Cumulative impacts, where the project will be considered alongside the predicted impacts of other projects in the nearby area (for example another offshore wind farm or a road development); and
 - Transboundary impacts, where activities in other countries may be impacted (for example shipping routes and fishing activities).

1.6 Role of National Policy Statements in the Decision Making Process

29. There are three National Policy Statements (NPSs) which are relevant to the proposed East Anglia TWO project:

- EN-1 Overarching Energy, which highlights that there should be a presumption in favour of granting consent for projects which fall within relevant NPSs and recognises that offshore wind is a key factor in meeting UK policy objectives;
 - EN-3 Renewable Energy Infrastructure, which covers nationally significant renewable energy infrastructure (including offshore generating stations in excess of 100MW); and
 - EN-5 Electricity Networks, which covers the electrical infrastructure in conjunction with EN-1.
30. The PEIR outlines how the development of the proposed East Anglia TWO project will comply with the requirements of these NPSs.

1.6.1 Other Planning Policies

31. Local authorities are required to prepare and maintain up-to-date Local Development Plans which set out their objectives for the use and development of land within their jurisdiction, and general policies for implementation.
32. The indicative onshore development area falls under the jurisdiction of Suffolk County Council (SCC) and the Suffolk Coastal District Council (SCDC). SCDC is in the process of merging with Waveney District Council (WDC) to become East Suffolk Council from 1st April 2019. At the time of writing the councils have not yet merged, however to ensure a robust assessment has been undertaken, the local plans for WDC and SCDC have been considered.
33. Relevant Local Development Plans have been considered during the onshore site selection for the proposed East Anglia TWO project to avoid, wherever possible, conflict with site-specific planning allocations.

1.7 Structure and Content of the PEIR

34. The PEIR considers all the onshore and offshore elements of the proposed East Anglia TWO project. The PEIR comprises three volumes:
- Volume 1: PEIR chapters (chapter list shown in **Table 1.1**);
 - Volume 2: Figures; and
 - Volume 3: Appendices.

Table 1.1 PEIR Volume 1 Chapter List

Introductory Chapters	Chapter 1 Introduction
	Chapter 2 Need for the Project
	Chapter 3 Policy and Legislative Context
	Chapter 4 Site Selection and Assessment of Alternatives
	Chapter 5 EIA Methodology
	Chapter 6 Project Description
Offshore Chapters	Chapter 7 Marine Geology, Oceanography and Physical Processes
	Chapter 8 Marine Water and Sediment Quality
	Chapter 9 Benthic Ecology
	Chapter 10 Fish and Shellfish Ecology
	Chapter 11 Marine Mammals
	Chapter 12 Ornithology
	Chapter 13 Commercial Fisheries
	Chapter 14 Shipping and Navigation
	Chapter 15 Civil and Military Aviation and Radar
	Chapter 16 Marine Archaeology and Cultural Heritage
	Chapter 17 Infrastructure and Other Users
Onshore Chapters	Chapter 18 Ground Conditions and Contamination
	Chapter 19 Air Quality
	Chapter 20 Water Resources and Flood Risk
	Chapter 21 Land Use
	Chapter 22 Onshore Ecology
	Chapter 23 Onshore Ornithology
	Chapter 24 Archaeology and Cultural Heritage
	Chapter 25 Noise and Vibration
	Chapter 26 Traffic and Transport
Project Wide Chapters	Chapter 27 Human Health
	Chapter 28 Offshore Seascape, Landscape and Visual Amenity

	Chapter 29 Landscape and Visual Impact
	Chapter 30 Tourism, Recreation and Socio-Economics

1.8 Consultation

35. The Applicant has undertaken extensive community and stakeholder consultation to inform the project design of East Anglia TWO, in particular the site selection. The Applicant has reviewed consultation received during informal and formal consultation and, in light of the feedback, has made a number of key decisions in relation to the project design in order to deliver an environmentally sustainable project.

36. Consultation is a key driver of the EIA process, and continues throughout the lifecycle of a project, from its initial stages through to consent and post-consent. Consultation has been carried out in accordance with the Statement of Community Consultation (SoCC) which explains how the Applicant consults local communities about its plans to develop the proposed East Anglia TWO project. Ongoing public consultation has been conducted through various means including (but not exclusively limited to):

- Community feedback reports shared with all registered participants, key local and community stakeholders, and on the proposed East Anglia ONE North project website;
- Phase 1 consultation (October / November 2017) with statutory consultees and the public;
- Phase 2 consultation (March 2018) with statutory consultees and the public;
- Phase 3 consultation (June / July 2018) with statutory consultees and the public;
- Phase 3.5 consultation (October / November 2018 and including four community engagement events held in October 2018) with statutory consultees and the public;
- Parish Council briefings;
- Direct discussions with landowners;
- Newsletters distributed throughout the onshore substation(s) site selection study area;
- Dedicated project e-mail address and freepost address to assist local communities in contacting the Applicant;
- Provision of a dedicated proposed East Anglia TWO project website; and

- Regular and targeted discussion with regulators and other stakeholder bodies through various means including over 30 Expert Topic Group (ETG) meetings.
37. Full details of the proposed East Anglia ONE North project consultation process will be presented in the Consultation Report, which will be submitted as part of the DCO application.

1.9 Next Steps

38. The Applicant will refine further the proposed East Anglia TWO project design and EIA based upon the consultation responses received in relation to the PEIR. The final results of the EIA will be presented in an ES and a summary of all the consultation responses received will be presented in a Consultation Report, both of which will accompany the DCO application to be submitted in 2019.

2 The Proposed East Anglia TWO Project

39. The offshore development area of the proposed East Anglia TWO project comprises of:
- Wind turbines;
 - Offshore platforms (electrical and construction, operation and maintenance platforms); and
 - Subsea cables (including inter-array cables connecting the wind turbines and platforms, platform link cables connecting offshore platforms, and export cables taking energy to shore).
40. The proposed East Anglia TWO project will also require onshore infrastructure in order to transmit and connect the offshore windfarm to the National Grid, which in summary would comprise:
- Landfall location at Thorpeness, where the offshore cables are brought ashore and jointed to the onshore cables;
 - Underground cables;
 - An onshore substation; and
 - A National Grid substation and National Grid overhead line realignment works.
41. A diagram illustrating some of the key components (not exhaustive) of the proposed East Anglia TWO project are given in **Plate 2.1**.

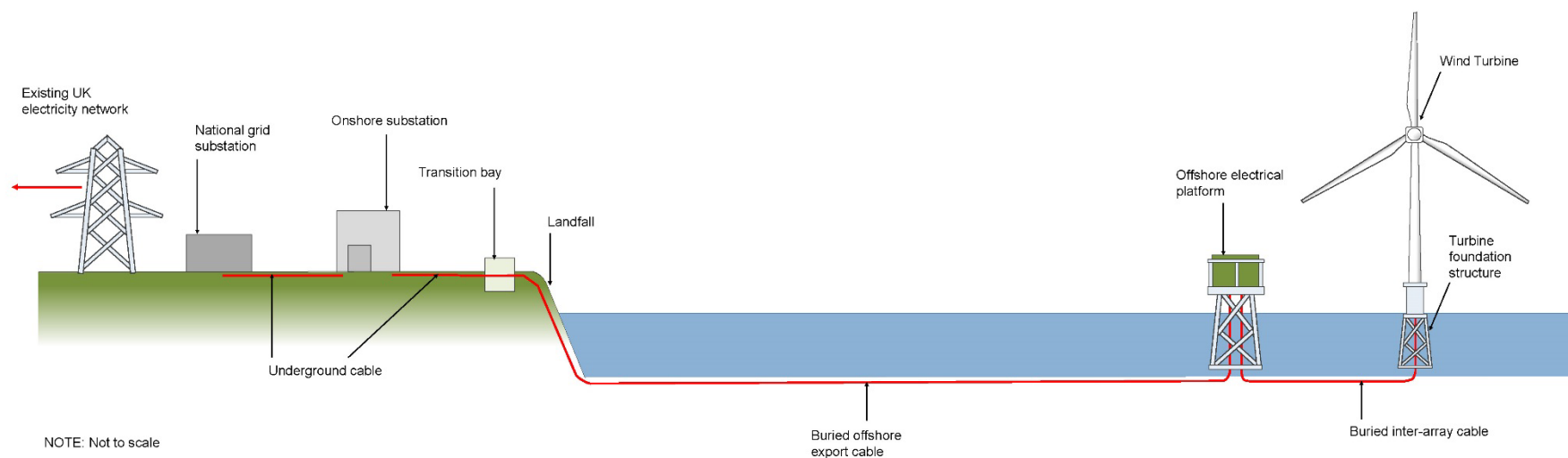


Plate 2.1 Key components of the proposed East Anglia TWO project

42. For the purposes of the assessment within the PEIR, the construction of the onshore infrastructure is assessed as taking approximately three years, with a construction period of approximately four years for the National Grid infrastructure (commencement dependent on securing the necessary circuit outages).
43. Construction activities would normally be conducted during weekday working hours of 7am to 7pm, and Saturday working hours of 7am to 7pm. No works are scheduled for Sunday or Bank Holidays. However, evening or full weekend working (including bank holidays) will be required to maintain programme progress and for specific time critical activities, such as horizontal directional drill (HDD).
44. At the end of the operational life of the proposed East Anglia TWO project, it will move into the decommissioning phase, which would be undertaken in accordance with the relevant legislation at that time.

2.1 Offshore Works

45. The East Anglia TWO windfarm site is located in the southern North Sea, approximately 31 kilometres (km) from its nearest point to the port of Lowestoft and 32km from Southwold. The proposed East Anglia TWO project would consist of up to 75 wind turbines. The wind turbines would consist of a tower, nacelle, hub and blades. A diagram representing the internal working structure of a wind turbine hub is displayed in *Error! Reference source not found.* below.
46. When installed, the largest of the turbines under consideration would have a maximum blade tip height of 300 metres (m) above sea level (an example of which is shown in **Plate 2.2** below). Within the windfarm there would also be up to four offshore electrical platforms (an example of which is shown in **Plate 2.4**) as well as a meteorological mast and a construction, operation and maintenance platform. An example image (taken from West of Duddon Sands offshore windfarm) of construction of a wind turbine is shown in **Plate 2.5**.

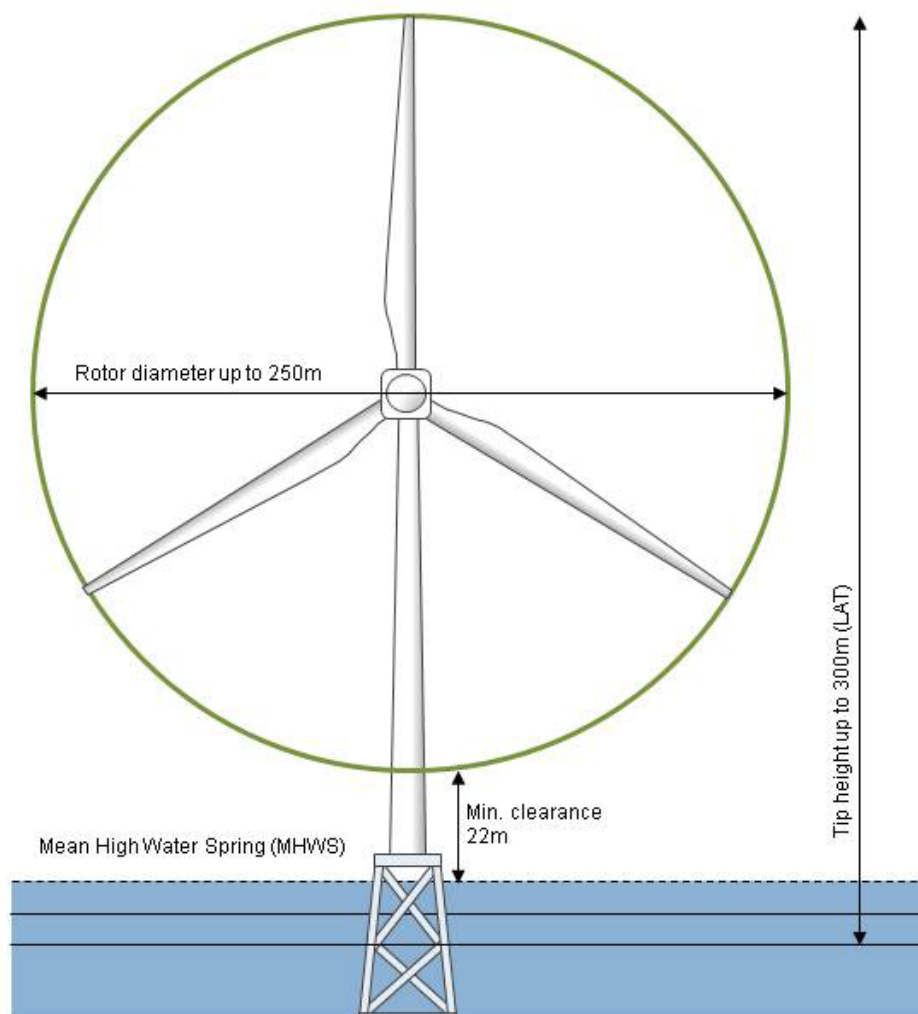


Plate 2.2 Example of a wind turbine to be used in the East Anglia TWO windfarm site

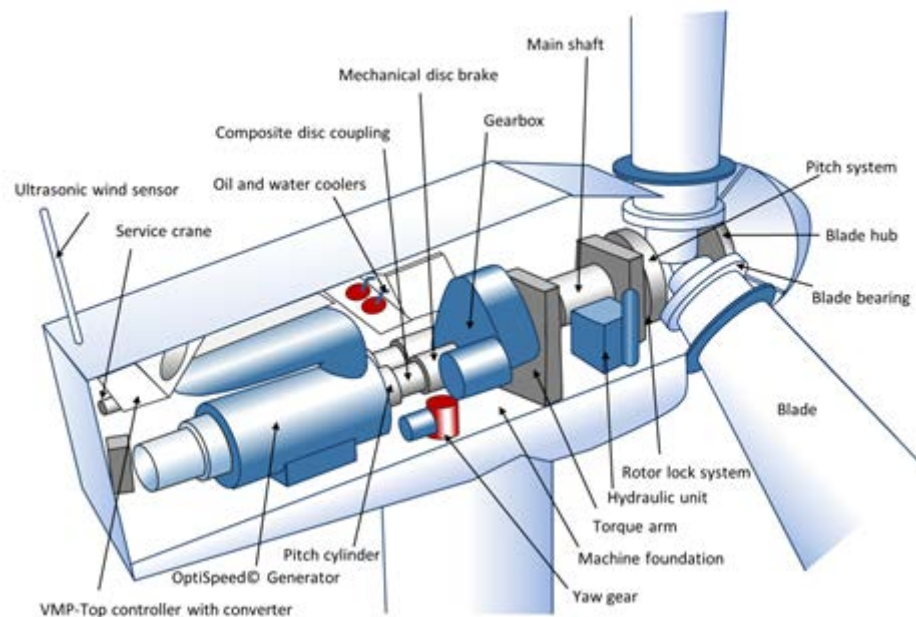


Plate 2.3 General Internal Structure of a Wind Turbine Hub



Plate 2.4 Offshore Electrical Platform



Plate 2.5 Wind Turbine under Construction (photo taken from West of Duddon Sands offshore windfarm)

47. The turbines will be connected to the offshore electrical platforms. The electrical platforms will collect the energy, increase the voltage and then transmit it along the offshore export cables that will be used to transmit the electricity to shore.
48. All offshore export cables would be buried where possible, or cable protection would be installed to ensure the cables are not damaged.
49. **Table 2.1** details the key offshore parameters of the proposed East Anglia TWO project.

Table 2.1 East Anglia TWO Key Offshore Parameters

Parameter	Specification
Number of wind turbines	75
East Anglia TWO windfarm site area	255km ²
East Anglia TWO windfarm site water depth range	33 - 67m
Distance from East Anglia TWO windfarm site to shore (closest point of site to Lowestoft)	31km
Maximum offshore cable corridor area	180km ²
Maximum number of export cables	Two

Parameter	Specification
Maximum cable lengths	<ul style="list-style-type: none"> • Inter-array – 200km • Platform link – 75km • Export – 160km
Maximum wind turbine rotor diameter	250m
Maximum wind turbine hub height	175m
Maximum wind turbine tip height	300m
Minimum clearance above sea level	22m
Minimum separation between wind turbines (assumed for micro siting) ⁵	In-row spacing 800m
	Inter-row spacing 1200m
Maximum number of wind turbine models to be installed	Three
Wind turbine foundation type options	Jackets on piles or suction caissons, gravity base structures, suction caissons, monopiles
Number of met masts	One
Maximum height of met mast	175m
Met mast foundation type options	Jacket, gravity base structure, suction caisson, monopile
Number of offshore electrical platforms	Up to four
Number of construction, operation and maintenance platforms	Up to one

2.2 Onshore Works

50. Prior to construction of the onshore works, the following pre-construction activities could take place:

- Topographic surveys (for engineering purposes);
- Ecological pre-construction work (including, for instance, hedgerow removal);
- Archaeological pre-construction work;
- Drainage surveys;
- Geotechnical and ground stability surveys; and
- Pre-entry records and requirements.

⁵ Nominal spacing is likely to exceed this

51. Construction Consolidation Sites (CCSs) would be required along the onshore cable route. Preliminary studies have identified six possible locations for onshore cable route CCSs within the proposed onshore development area. It is the intention that the CCSs would be to:
- Form the main point(s) of access onto the linear construction site;
 - Provide the main areas for the storage of materials and equipment; and
 - House site administration and welfare facilities for the labour resources.
52. A HGV marshalling area is proposed along the B1353 at Elm Tree Farm to act as an interchange hub for deliveries of material and equipment for the landfall HDD prior to utilising the pilot vehicle system to escort HGVs along the B1353 to the landfall.
53. Road modifications could be required to facilitate the safe ingress and egress from the public highways to the onshore cable route or CCSs through construction accesses. Where possible the accesses make use of existing tracks to link between the public road network and the onshore cable route. There may be a requirement to upgrade some existing tracks to make them suitable. Where this is required it would be completed using a design which is suitable for construction traffic.
54. Additionally, highway modifications may be required at locations on the existing public road network in order to facilitate construction traffic and / or construction-related deliveries. The purpose of the modifications would be to allow larger vehicles than normal to access certain parts of the public road network. It is anticipated that the works would be concentrated at junctions.
55. The modifications could potentially comprise:
- Structural works to accommodate Abnormal Indivisible Loads;
 - Localised widening / creation of overrun areas;
 - Temporary moving or socketing of street signs; and
 - Temporary moving of street furniture.
56. Temporary fences would be erected along the boundaries of the working width. Once the working width has been cleared of vegetation, the topsoil would be stripped. Subsoil would then be excavated to the required depth for each trench. This would follow the profile of the ground surface, but deeper excavations could be required at certain crossings. **Plate 2.6** shows an example image of a temporary fence that could be utilised along the boundary of the working width.



Plate 2.6 Example of a temporary fence used to delineate the boundary of the cable route working width (image taken from East Anglia ONE project)

57. A temporary haul road would be installed along the onshore cable route between Snape Road and the landfall area. The onshore cable route haul road between landfall and Snape Road would be approximately 4.5m wide with passing places of 4m in width at approximately 87m intervals. The onshore cable route haul road between the landfall and Snape Road would be up to a maximum of 8.5m at these passing place locations. This is illustrated in **Plate 2.7**.

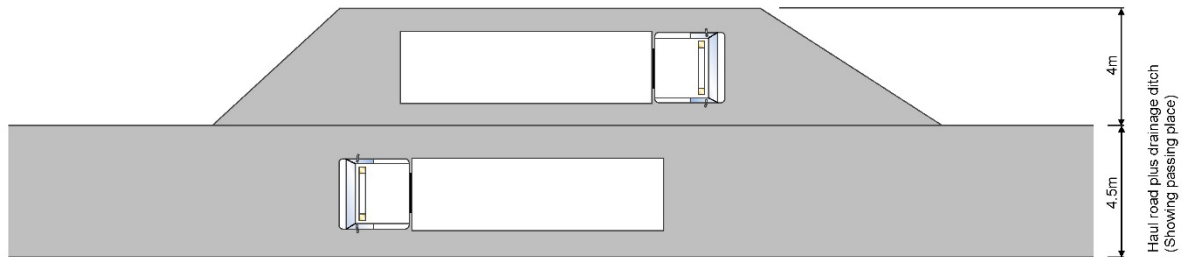


Plate 2.7 Cable route haul road schematic

58. A temporary haul road would also be installed along the onshore cable route between Snape Road and the onshore substations location. This would facilitate access to the installation of the onshore cable route as well as for HGV construction traffic to access the onshore substation and National Grid substation during the construction phase. The onshore cable route and substations access haul road between Snape Road and the onshore substations location would be approximately 9m in width.
59. Temporary construction access roads (similar to the haul roads) would also be installed to provide access from the public highway to onshore cable route CCSs, the onshore cable route haul road and the onshore cable route and substations access haul road. The temporary construction access roads would be approximately 4.5m wide with passing places of 4m in width at approximately 87m intervals. The temporary construction access roads would be up to a maximum of 8.5m at these passing place locations.
60. At the landfall to the north of Thorpeness, HDD operations will be needed to install the ducts required which will avoid any need for construction works on the beach. The ducts would accommodate up to two export cables, and two FO cables associated with the proposed East Anglia ONE North project. Once the ducts are in place, the offshore cables would be pulled through the ducts and connected to the onshore cables.
61. The cable ducts would be installed with a setback distance of a minimum of 85m from the cliff top to ensure the integrity of the cliff is not compromised and to allow for natural coastal erosion. The end of the HDD ducts would be buried under the sea bed beyond the intertidal zone (see **Plate 2.8**).

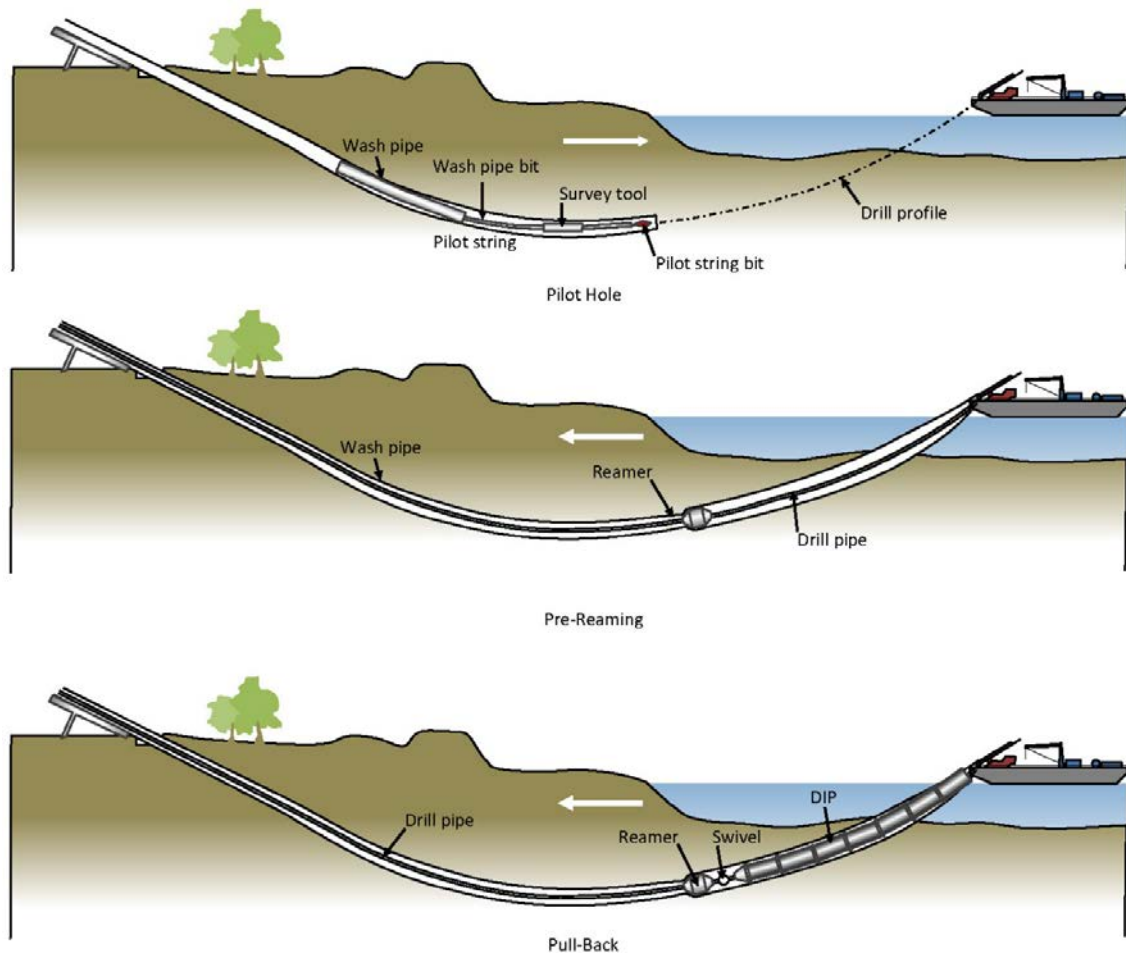


Plate 2.8 HDD working method at landfall

62. Onshore cables will be buried, either within ducts or placed directly underground without ducting, with no above ground infrastructure left after construction. The indicative working area for the onshore cables is illustrated in **Plate 2.9**.
63. For most of the onshore cable route, trenches will be excavated to place the ducts in (using a tracked excavator or similar), with cables pulled through later in the programme or laid directly, with jointing bays at intervals within which cables can be joined. Manhole covers may be required at some locations (located along natural field boundaries where practicable) for access and maintenance. At certain locations where specific features need to be crossed / avoided, such as designated sites of conservation importance, trenchless techniques (for example Horizontal Directional Drilling (HDD) or auger bore) may be used to install the ducts beneath features to minimise environmental impacts and disruption. For example, HDD may be used to cross the Sandlings Special Protection Area (SPA) (and Leiston – Aldeburgh SSSI) to mitigate the impact on the designated

site. The assessments undertaken cover the option to trench across the Sandlings SPA (and Leiston – Aldeburgh SSSI).

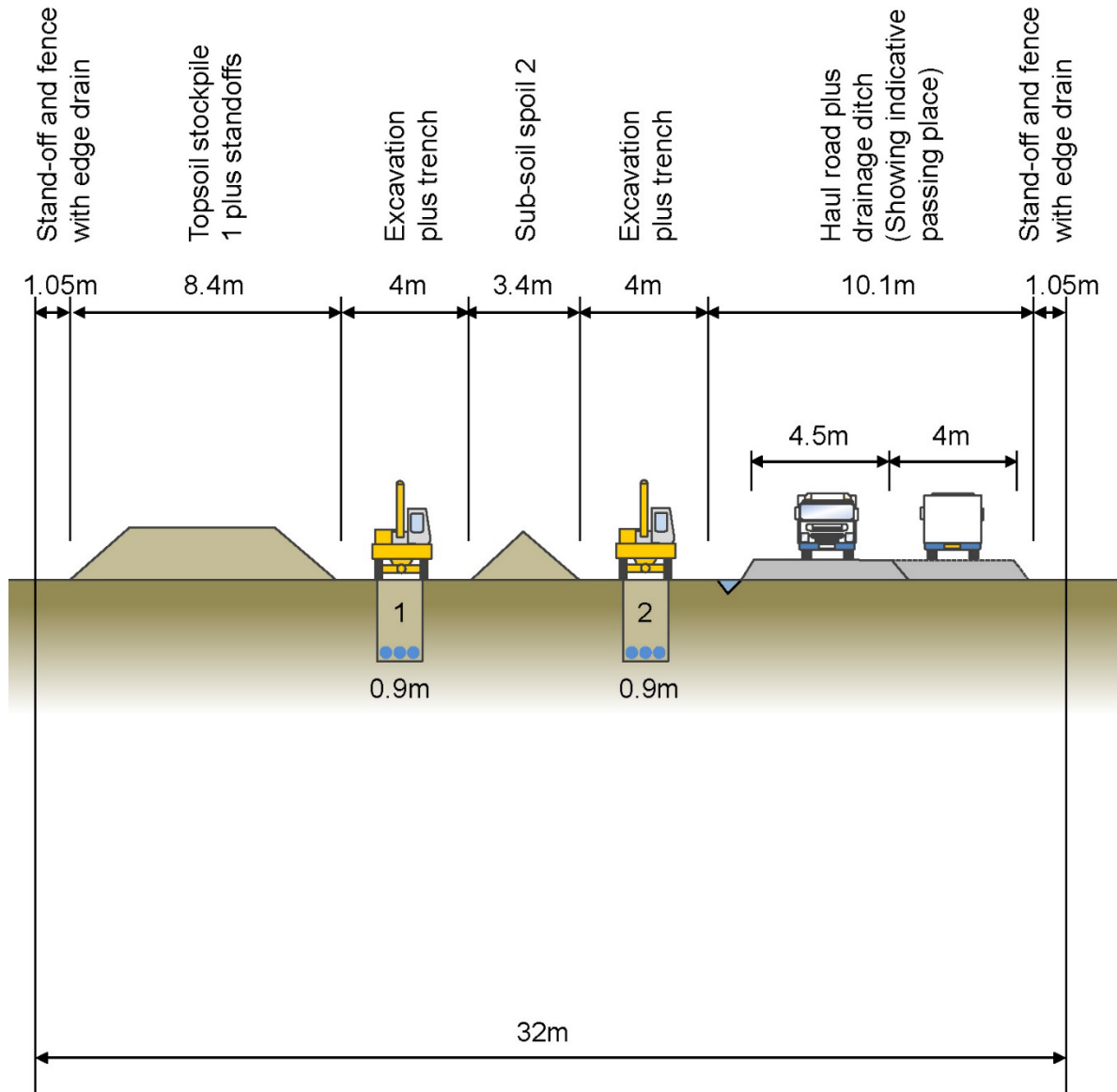


Plate 2.9 Indicative cable trenching arrangement and working area

64. A number of construction consolidation sites (CCSs) will be required along the onshore cable route (temporary site compounds providing facilities for the construction workforce and secure storage areas for materials) and a haul road will be created along the onshore cable route to allow safe access of construction vehicles and to minimise construction vehicles on the public highway.
65. An onshore substation will be required to convert the electricity produced by the offshore windfarm into a format that can be accepted by the National Grid. The proposed East Anglia TWO project onshore substation will have a maximum

building height of 15m and external electrical equipment up to 18m in height and will cover an area of land of up to 36,100m² (190m x 190m). A schematic of the onshore substation is illustrated in **Plate 2.10**.

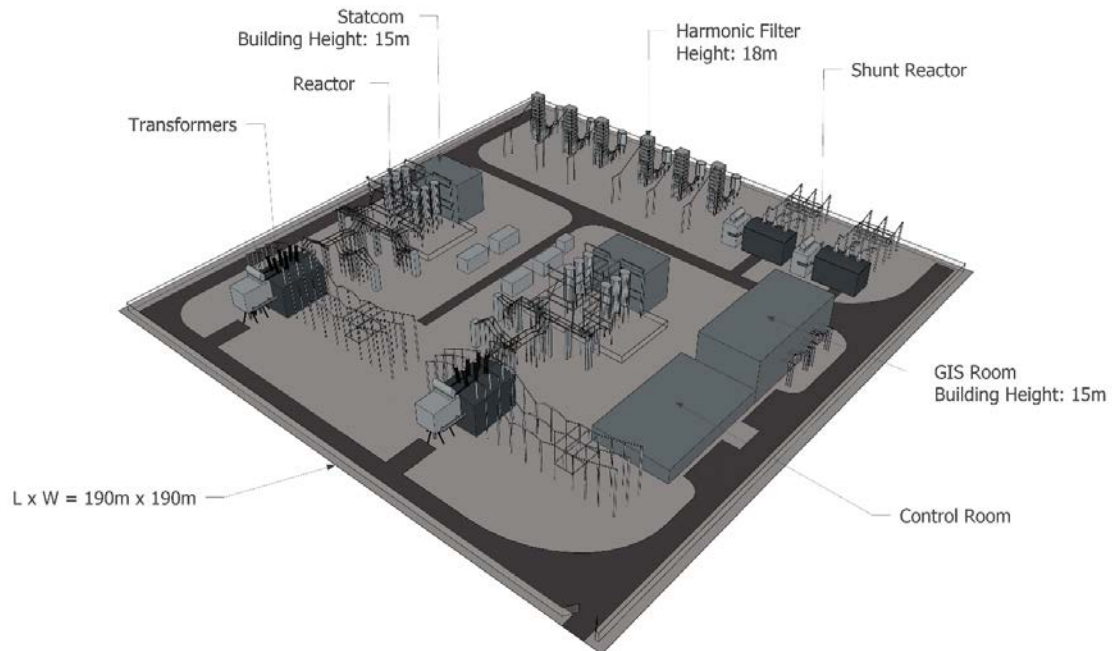
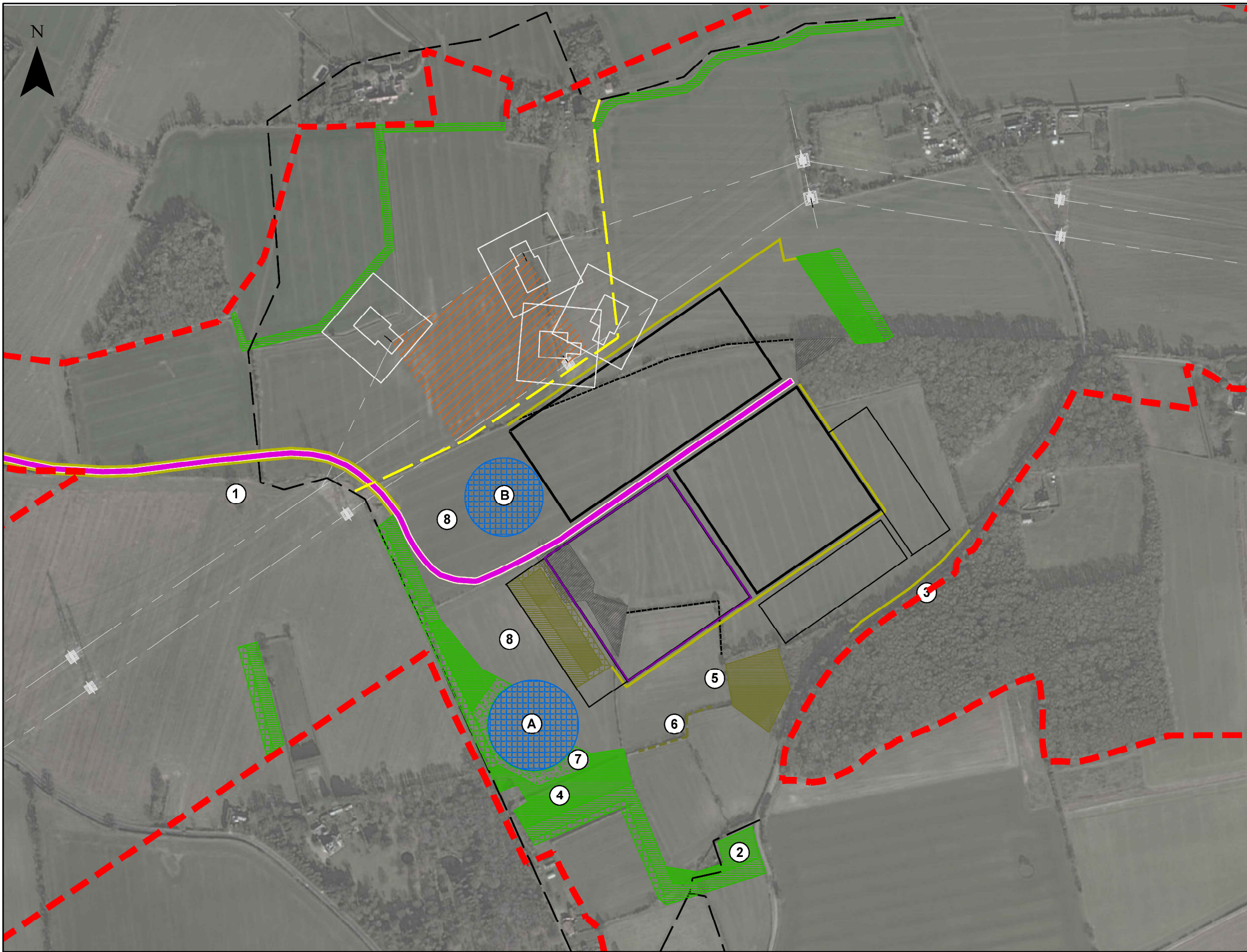


Plate 2.10 East Anglia TWO Indicative Onshore Substation Model

66. In order to accommodate the electricity produced by the proposed East Anglia TWO project, there is the requirement for the construction of a new National Grid substation. Currently, a National Grid Air Insulated Switchgear (AIS) or Gas Insulated Switchgear (GIS) substation are proposed options. National Grid GIS substation is not considered the worst case for the PEIR assessments.
67. The National Grid substation would be located within a single compound, with two potential substation arrangements – AIS or GIS. The maximum footprint dimensions of a National Grid AIS substation are up to a maximum of 140m x 325m, with a maximum building height of 13m. The maximum footprint dimensions of a National Grid GIS substation are up to a maximum of 140m x 120m, with a maximum building height of 16m.
68. One additional overhead line pylon, as well as up to four cable sealing ends will be required to accommodate the proposed East Anglia TWO and East Anglia ONE North projects. Other overhead line pylon in the vicinity of the National Grid substation within the National Grid Overhead Line Realignment Works Area may be subject to replacement or upgrade works to facilitate the connection to the network.

69. Landscaping and tree planting schemes will be carefully designed to reduce visual impacts of the infrastructure at the onshore substation and the National Grid substation (see **Figure 3** for the indicative landscape mitigation plan that provides an illustration of areas for landscape mitigation planting). Disturbed ground associated with the onshore construction will be reinstated following construction as far as possible.

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- Proposed Onshore Development Area
- Indicative cable route
- Indicative cable trench
- Indicative temporary access route / haul road
- Permanent access road
- Construction compound
- Substation operational compound location
- A - Indicative SuDS Basin for EA2 and EA1N Substations. Required size and indicative location shown. Final position TBC.
- B - Indicative SuDS Basin for surface water from National Grid Substation. Required size and indicative location shown. Final position TBC.
- Proposed re-routing of footpath to tie into existing footpaths
- Existing footpath
- Pre construction stage planting:**
- Core woodland - comprising generally slower growing mixed broadleaf species
- Edge woodland - comprising generally lower growing mixed broadleaf and shrub species
- Screening woodland - comprising generally faster growing mixed broadleaf and conifer species to provide visual screening and shelter for slower growing core woodland
- Wet woodland - mix appropriate for SUDS detention basin area.
- Areas of existing woodland to be removed
- Existing hedgerow to be removed
- Post construction stage planting:**
- Core woodland - comprising generally slower growing mixed broadleaf species
- Edge woodland - comprising generally lower growing mixed broadleaf and shrub species
- Screening woodland - comprising generally faster growing mixed broadleaf and conifer species to provide visual screening and shelter for slower growing core woodland
- Existing hedgerow to be removed and replanted post construction
- Mixed native species hedge

Mitigation planting notes:



General Notes:

Planting densities and species mix to be further developed. All species to be locally appropriate - refer to section 29.3.4 of LVIA for indicative species lists.

Notionally four woodland types are proposed in order to achieve a variety of screening effects and a diverse habitat: core woodland, edge woodland, screening woodland and wet woodland.

Specific notes (refer to plan):

- Permanent access road to be hedge lined, making use of existing hedge where possible.
- Proposed new screening woodland links or extends areas of existing woodland to create continuous habitat corridors.
- Additional hedge and hedgerow tree planting is proposed along the western edge of Grove Road.
- Additional screening woodland is proposed to the north of Friston which, in combination with the existing hedgerows, provides a layered screening approach.
- Where possible existing hedgerows are to be protected, retained and incorporated as part of a layered mitigation screening approach.
- Any hedgerows which are removed from within the cable route corridor are to be replanted post construction.
- Woodland surrounding SUDS is to be integrated into the SUDS design (e.g. using wet woodland species). Eastern edge of SUDS to be open to create a variety of habitats/water edge conditions.
- Non wooded areas surrounding SUDS to be converted to species rich grassland.

	4	10/12/2018	LA	Fifth Issue (OPEN)			<div>1:5,000</div> <div>Scale @ A3</div> <div></div>	<div>East Anglia TWO</div> <div>Onshore Substation –</div> <div>Indicative Landscape Mitigation Plan</div>	Drg No		EA1N-EA2-DEV-DRG-IBR-00TBC480	
	3	22/11/2018	LA	Fourth Issue (OPEN)	Prepared:	LA			Rev	4	Datum: OSGB 1936 Projection: BNG	
	2	14/11/2018	LA	Third Issue (OPEN)	Checked:	SM			Date	10/12/18		
	Rev	Date	By	Comment	Approved:	LT			Figure	3		
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70. **Table 2.2** shows the key onshore parameters of the proposed East Anglia TWO project.

Table 2.2 East Anglia TWO Key Onshore Parameters

Parameter	Specification
Landfall location	North of Thorpeness
Onshore cable route length (km) (approximately)	9
Maximum Onshore Cable Route Width (m)	32
Onshore substation compound footprint (ha)	3.61
Onshore substation maximum building height (m)	15
Onshore substation maximum height of external electrical equipment (m)	18
National Grid substation compound footprint - AIS (National Grid GIS substation (140m x 120m compound footprint) is an alternative option but is not considered the worst case for assessment)	140m x 325m (4.55ha)
National Grid substation maximum building height (m) – AIS (National Grid GIS substation (16m height) is an alternative option but is not considered the worst case for assessment)	13
National Grid substation maximum height of external electrical equipment (m)	16
Number of onshore cables	6
Number of fibre optic cables	2
Number of distributed temperature sensing cables	2
Lightning protection	Lightning protection will be required using a combination of lightning rods, lightning masts and shield wires

71. During construction of the onshore substations, site establishment and laydown areas would be required. Works required to facilitate the construction of the onshore characteristics outlined in **Table 2.2** could include:

- Pre-construction activities;
- Landscaping and screening;

- Temporary fencing;
- Temporary roads and public highway accesses;
- Offsite highway works;
- Grading and earthworks;
- Drainage; and
- Lighting.

72. Further details of the proposed East Anglia TWO project are provided in PEIR ***Chapter 6 Project Description***.

3 Topics Considered in the Environmental Impact Assessment

73. The PEIR covers a wide range of physical, ecological and human environmental topics for which potential impacts have been assessed. Many of these technical assessments are related to each other and these links are highlighted within the PEIR.
74. The topic assessments within the proposed East Anglia TWO project PEIR have been undertaken in accordance with the Planning Inspectorate's Scoping Opinion (see **section 1.5**). Each of these topics have been summarised as part of the NTS in the following sections.

3.1 Offshore

3.1.1 Marine Physical Environment

75. The construction, operation, and decommissioning phases of the proposed East Anglia TWO project would cause a range of effects on the marine geology, oceanography and physical processes. Previous benthic, metocean and geophysical studies undertaken of the of the former East Anglia Zone (within which the East Anglia TWO windfarm site is located) between 2010 – 2013 were used to inform this assessment. Project-specific geophysical surveys were also undertaken in 2017 – 2018 of the East Anglia TWO windfarm site and offshore cable corridor. Additional desk based studies were undertaken using oceanographic and hydrographic mapping and data. The sea bed is sedimentary with megaripples and sandwaves and some areas of flat sea bed. Water depths vary from a minimum 2m below LAT inshore to maximum 67m below LAT within the East Anglia TWO windfarm site
76. The assessment considered the impacts on waves, currents and movement of sediment, both in the water column and along the sea bed. Overall, the effects of the proposed East Anglia TWO project on these processes were predicted to be small scale, localised and temporary. As a result, they were categorised as low, negligible or no impact.
77. Importantly, a commitment has been made to bury, as far as possible, the offshore export cables that transport the electricity from the windfarm to the coast. This will minimise the need for surface-laid cable protection which could affect the movement of sediment along the coast line. Extensive site selection work has been undertaken to ensure the routing of the offshore cables avoids the geological Coralline Crag at Thorpeness, thereby avoiding impacts to this feature.

78. No cumulative impacts with adjacent projects, including several Offshore Windfarms (including the proposed East Anglia ONE North project) and aggregate extraction activities were identified. This was due to the small scale of the effects and their temporary nature.

3.1.2 Marine Water and Sediment Quality

79. A review of existing information, as well as data collected from the site of the proposed East Anglia TWO project, informed this assessment. The assessment work undertaken showed that the water quality within the offshore development area is good, and sea bed sediments do not contain levels of pollution that would be of concern. Additionally, natural levels of sediment in the water column vary depending on season and during stormy weather.
80. The assessment considered the impacts of the release of sediment, as well as the potential for the release of pollutants which may already be present within sediment, that could potentially be disturbed when constructing the proposed East Anglia TWO project. Overall, no significant impacts on marine water and sediment quality were identified in the assessment, and through the implementation of standard measures such as developing an appropriate pollution prevention procedures, all potential impacts to water and sediment quality are considered to be small scale, localised and temporary. Decommissioning impacts are expected to be no greater than those construction impacts identified.
81. No cumulative impacts with adjacent projects, including several OWFs (including East Anglia ONE North) and aggregate extraction activities were identified. This was, again, due to the small scale of the effects and their temporary nature.

3.1.3 Sea Bed Communities (Benthic Ecology)

82. Broad scale and site-specific survey of the sea bed ecology of the former East Anglia Zone (within which the East Anglia TWO windfarm site is located) and offshore cable corridor area were conducted between 2010 and 2017.
83. Sea bed surveys found a community typical of the southern North Sea and characterised by marine worms and crustaceans, which can play an important role in marine food webs.
84. Aspects of offshore windfarm construction, operation and decommissioning that this community is sensitive to include temporary disturbance to and, or loss of habitat and changes in water quality. However, owing to the relatively high tolerance to disturbance this community shows and small sea bed footprint of the proposed East Anglia TWO project, potential impacts of the proposed project alone or cumulatively were judged to be negligible or minor in nature.

85. Two ecologically sensitive habitat types were identified: potential reefs created by the marine worm *Sabellaria spinulosa* in the offshore development area and 'vegetated shingle' at the landfall. Potential impacts to the vegetated shingle habitat will be avoided through a commitment to HDD under the coast. Mitigation options such as avoidance of any *Sabellaria* reefs found to be present through pre-construction surveys will be discussed and agreed with the MMO and Natural England.
86. Cumulative impacts may occur with the proposed East Anglia ONE North project and East Anglia ONE offshore windfarm, but were assessed to be negligible or minor. These impacts would be small scale, highly localised and temporary.

3.1.4 Fish and Shellfish Ecology

87. Information from existing research on the fish and shellfish which live within the southern North Sea has been used to build a comprehensive knowledge base of the fish and shellfish ecology of the East Anglia TWO offshore development area.
88. The data show that over 100 species of fish and shellfish may be present within the East Anglia TWO offshore development area. Species were taken forward for assessment based upon their ecosystem value and the value to commercial fishermen. Other species such as salmon and lamprey were also taken forward for assessment due to their conservation value. The impact assessment required consideration of the marine geology, oceanography and physical processes, marine water and sediment quality and sea bed ecology assessments carried out for the proposed East Anglia TWO project.
89. The assessment concluded that the proposed East Anglia TWO project could cause a range of small scale effects to fish and shellfish ecology (such as temporary habitat loss and disturbance). The potential effects assessed were anticipated to result in some minor impacts (short term during construction and reversible) on some fish and shellfish populations. Decommissioning impacts are expected to be no greater than those construction impacts identified.
90. Cumulative impacts may occur with adjacent offshore windfarm projects however, cumulative impacts were assessed as minor or negligible due to the temporary nature and highly localised scale of impacts.

3.1.5 Marine Mammals

91. The distribution and occurrence of marine mammals in the local area of the East Anglia TWO windfarm site was established through high resolution aerial photography. These surveys found the harbour porpoise, grey and harbour seals to be the only species to occur with any regularity.

92. The East Anglia TWO offshore development area is located wholly within the Southern North Sea candidate Special Area of Conservation (cSAC) / Site of Community Importance (SCI) winter area – an area of importance for harbour porpoise *Phocoena phocoena*.
93. Aspects of offshore windfarm construction, operation and decommissioning that marine mammals are sensitive to include underwater noise causing potential physical and auditory injuries or behavioural changes, barrier effects (preventing movement of animals), collision risk with vessels and changes to food availability. The impact assessment concluded that only minor impacts to marine mammals would occur as a result of construction, operation and decommissioning of the proposed East Anglia TWO project, following implementation of the recommended mitigation measures (for example following a Marine Mammal Mitigation Protocol and exercising good practice).
94. There are potential cumulative impacts with other offshore windfarms as a result of underwater noise from pile driving, potential changes to the availability of prey and increased chance of vessel interaction. These impacts have the potential to affect all three species of marine mammal assessed. However, considering the low density of these species across the offshore development area, and a commitment to implement mitigation measures (for example following a Marine Mammal Mitigation Protocol and exercising good practice), the cumulative impact on these species was assessed as minor.

3.1.6 Ornithology

95. As with the marine mammals, the numbers of birds using or passing through the East Anglia TWO windfarm site were calculated using the results of aerial photography surveys. All birds observed within these surveys have been assessed with regard to their nature conservation value and sensitivity to effects from windfarms. Key species observed within the surveys included red-throated diver, kittiwake, guillemot, razorbill, gannet and two species of gull.
96. Effects assessed were disturbance and displacement, collision risk, barriers to movement and indirect effects (e.g. those on prey species). Analysis followed industry best practice methods, including the use of collision risk modelling to fully assess the potential impacts of the proposed East Anglia TWO project.
97. The conclusion of the assessment was that the proposed East Anglia TWO project is predicted to have minor impacts on birds. There is the potential for effects of the proposed East Anglia TWO project to act cumulatively with adjacent projects, including other offshore wind projects, aggregate extraction activities, oil and gas exploration, subsea cables and commercial shipping, although it was concluded that there is no pathway for interaction between impacts other than

collision risk impact associated with other offshore windfarm projects. Decommissioning impacts are expected to be no greater than those construction impacts identified.

98. The collision risk for the proposed East Anglia TWO project and adjacent offshore wind farm projects was assessed as no greater than a minor impact.

3.1.7 Commercial Fisheries

99. Commercial fishing vessels from the UK, Netherlands and Belgium were found to use the offshore development area to varying levels. Key potential impacts on commercial fisheries include temporary loss of access to fishing ground, increased transit times and changes in the distribution of target species.
100. The East Anglia TWO windfarm site is of a small scale in comparison to the area fished by Dutch and Belgian vessels. Impacts associated with commercial fisheries during construction, operation and decommissioning was judged to be minor for the proposed East Anglia TWO project alone and cumulatively with other projects
101. UK vessels from ports along the Suffolk and Norfolk coast area more limited in their range however and a number of potential impacts were identified. To mitigate these impacts, a Commercial Fisheries Working Group has been created to act as a forum in which potential impacts can be discussed and appropriate mitigation agreed to avoid or reduce them.

3.1.8 Shipping and Navigation

102. The shipping and navigation assessment considers navigation for either commercial or recreational purposes, in addition to any navigational aspects of marine industries, such as fisheries and aggregates extraction. The southern North Sea is an area of significant shipping activity and therefore the East Anglia TWO windfarm site location has been determined through careful consideration of these shipping routes so that it avoids interactions as far as possible.
103. Stakeholder workshops and computer modelling were used to identify which types of vessels may be impacted by the proposed East Anglia TWO project. The assessment identified suitable ways to reduce the scale of these impacts to acceptable levels. Decommissioning impacts are expected to be no greater than those construction impacts identified.
104. Overall, given the distances between the East Anglia TWO windfarm site and other developments, cumulative impacts were considered to be broadly acceptable. The assessment included impacts to vessels from other countries outside the UK and concluded that these would be within tolerable limits.

3.1.9 Civil and Military Aviation and Radar

105. The assessment considered all forms of aviation activity including that of the Ministry of Defence, regional airports, local aerodromes, national air traffic control, the Civil Aviation Authority and international bodies. The assessment included consideration of effects on radar, search and rescue and helicopter traffic in both UK and overseas airspace.
106. The assessment established that, providing the proposed East Anglia TWO project was displayed properly on aviation charts, and there was adequate marking and lighting of all wind turbines consistent with UK regulations, no significant impacts would occur as a result of the construction and decommissioning phases. During the operation phase it is predicted that the wind turbines have the potential to cause interference on civil and military radars and therefore the Applicant is developing a mitigation solution in consultation with the Ministry of Defence and The Crown Estate.

3.1.10 Marine Archaeology and Cultural Heritage

107. Sea bed surveys using a variety of techniques including sonar (**Plate 3.1**) were used along with desk-based studies of existing information to determine the extent of the archaeology which exists within the offshore development area. The known offshore archaeological baseline comprises of charted wrecks and obstructions and previously unidentified anomalies of possible maritime or aviation origin.

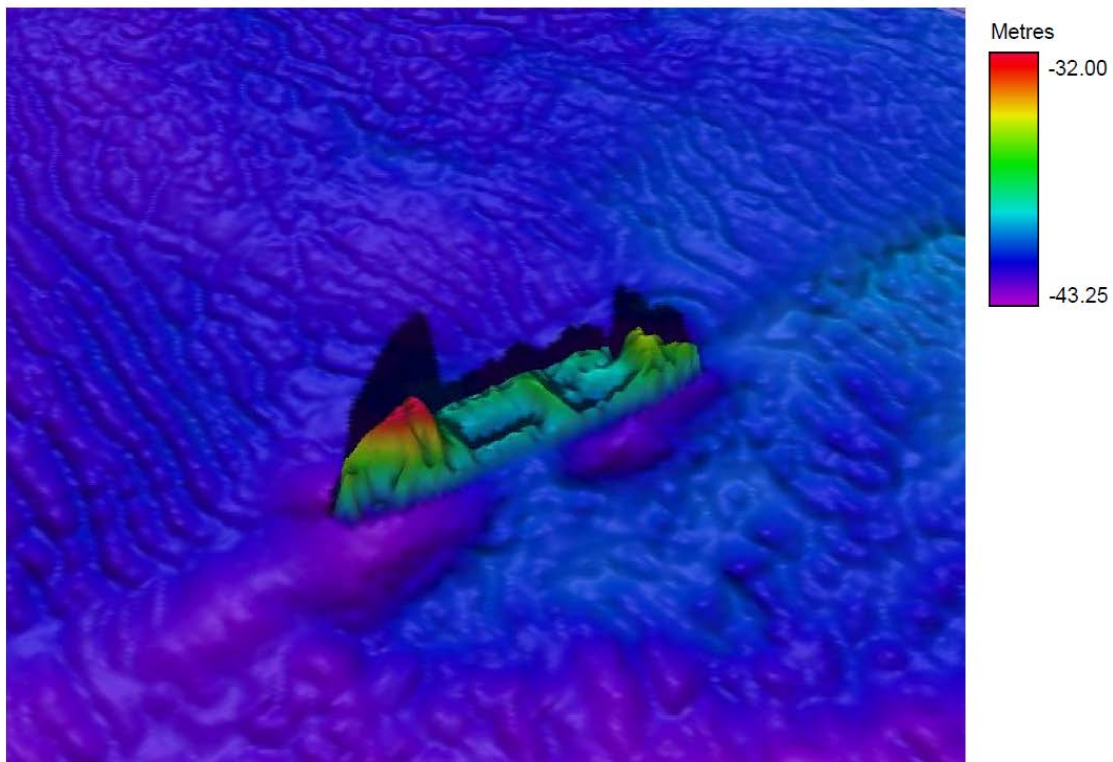


Plate 3.1 Example of ship wreck located during offshore surveys

108. The assessment concluded that impacts to archaeology and cultural heritage could largely be avoided if a number of steps are taken, such as the adoption of exclusion zones around wrecks and the positioning of foundations and offshore cables away from any potential archaeological features.
109. In order to account for unexpected archaeological finds, a formal protocol for archaeological discoveries will be implemented during construction.
110. With the application of appropriate mitigation, there will be no significant impacts to offshore and intertidal archaeology (including cumulative and transboundary impacts) from the proposed East Anglia TWO project. Decommissioning impacts are expected to be no greater than those construction impacts identified.

3.1.11 Infrastructure and Other Users

111. This assessment looked at potential impacts of the proposed East Anglia TWO project upon other windfarm developments, cables and pipelines, oil and gas activities, marine aggregate activities and unexploded ordnance.
112. Careful site selection has ensured that interactions with other users will generally be avoided. Where interaction is unavoidable (such as cable crossings) commercial agreements would be put in place ahead of construction, to ensure that these interactions are safe and prevent damage to other infrastructure.

Therefore, no significant impacts will occur. Decommissioning impacts are expected to be no greater than those construction impacts identified.

3.2 Onshore

3.2.1 Ground Conditions and Contamination

113. The majority of the proposed onshore development area is located in agricultural land, where significant sources of contamination are not expected. The ground conditions assessment included a desk-based review and consultation regarding the current conditions found within the proposed onshore development area.
114. The impacts assessed included the potential for contamination leaks and spills during construction, potential for existing contaminant release during any works and impacts on groundwater quality and mineral resources availability. A Code of Construction Practice (CoCP) will be produced, which will provide details of the industry best practice measures that would be undertaken during construction to reduce or avoid potential impacts.
115. Provided mitigation measures are in place, the proposed East Anglia TWO project is predicted to have no greater than minor impacts in relation to ground conditions and contamination during construction. No potential effects were identified for the operational phase. Decommissioning impacts are expected to be no greater than those construction impacts identified.
116. Cumulative impacts with other relevant projects (the proposed East Anglia ONE North project and Sizewell C New Nuclear Power Station) were assessed as being no greater than minor.

3.2.2 Air Quality

117. A desk-based assessment was carried out using air quality monitoring data collected by Local Authorities within the indicative onshore development area, as well as pollution maps provided by the Department of Environment, Food and Rural Affairs (Defra), to establish existing pollution levels. The air quality assessment considered the potential impacts associated with onshore construction phase dust and road traffic emissions only.
118. In accordance with air quality guidance, a suite of best-practice mitigation measures have been identified (such as dampening down the running track during dry periods to minimise dust generation), which would be proportionate to the level of dust risk of the construction activities. With the implementation of the mitigation measures, dust impacts were considered to be not significant. Road traffic emissions during the construction phase were also considered to be not significant. Overall, the assessment considers that it is highly unlikely that the construction activities would cause noticeable short-term or lasting impacts to air

quality. Decommissioning impacts are expected to be no greater than those construction impacts identified.

119. Cumulative impacts with other relevant projects (the proposed East Anglia ONE North project and Sizewell C New Nuclear Power Station) were assessed as being not significant.

3.2.3 Water Resources and Flood Risk

120. To inform the impact assessment, a desk based review of publicly available data and that obtained from the Environment Agency and Internal Drainage Boards was undertaken. In addition, a geomorphological walkover survey of the three main watercourses that could potentially be affected by the proposed East Anglia TWO project (the Hundred River, Leiston Drain and Friston Watercourse) was undertaken, in the location where the onshore cable route would cross these watercourses.
121. The impact assessment considered potential impacts upon receptors including direct disturbance of surface water bodies, increased flood risk, soils entering watercourses, and accidental spills of fuels, oils and lubricants during construction.
122. Mitigation measures were identified including sediment management, construction drainage, and implementation of best practice measures to be set out in the CoCP. With the implementation of these measures, impacts assessed would not be significant, including no increase in flood risk on the village of Friston. Decommissioning impacts are expected to be no greater than those construction impacts identified.
123. Cumulative impacts with other relevant projects (the proposed East Anglia ONE North project and Sizewell C New Nuclear Power Station) were assessed as being not significant.

3.2.4 Land Use

124. To inform the land use impact assessment, a desk based literature review of existing reports and survey data was undertaken to provide indicative baseline conditions for land use. Additionally, consultation has been undertaken with relevant Local Planning Authorities (SCC, SCDC and WDC) and feedback has been sought from landowners and occupiers within the onshore indicative development area to provide information on agricultural practices.
125. The assessment considered the potential impacts of the proposed East Anglia TWO project on drainage, agricultural land, soil quality, Environmental Stewardship Schemes and utilities. Provided mitigation measures are put in

place, the proposed East Anglia TWO project was predicted to have no greater than minor impacts in relation to land use and agriculture. Mitigation measures include the use of an Agricultural Liaison Officer, ensuring agricultural field drains are maintained, and employing best practice measures through a Soils Management Plan. The Applicant will also commit to consultation with utility providers prior to construction and undertake utility crossings or diversions in accordance with the appropriate standards for such crossings or works, avoiding potential impacts to utilities. Decommissioning impacts are expected to be no greater than those construction impacts identified.

126. Cumulative impacts with other relevant projects (the proposed East Anglia ONE North project and Sizewell C New Nuclear Power Station) were assessed as being no greater than minor.
127. With the exception of the land to be used for the onshore substation and National Grid substation, all land would be reinstated after construction thereby avoiding any lasting impacts.

3.2.5 Onshore Ecology

128. An extensive suite of ecological surveys was undertaken throughout 2017 and 2018 to describe the ecological baseline. The scope of these surveys was agreed in advance with Natural England.
129. All statutory and non-statutory sites, designated for their nature conservation value, have been avoided, where practicable, during the site selection process. Where avoidance of the SPA and SSSI is not practicable, the extent of this overlap has been minimised as far as appropriate (a minimum onshore cable route width of 16.1m will be used within the SPA and SSSI (and retaining the option to HDD under the SPA and SSSI)). Ancient woodland and woodland parcels have been avoided where practicable and where important hedgerows are crossed the working width may be reduced (following further refinement of the onshore cable corridor) as far as practicable to minimise potential impacts.
130. Temporary habitat loss and fragmentation will occur during the proposed East Anglia TWO project construction phase. Habitats would be reinstated as far as practicable following construction. Decommissioning impacts are expected to be no greater than those construction impacts identified.
131. Potential impacts on badgers, bats, water voles, great crested newts and reptiles, are also anticipated to occur during the construction phase. These impacts include disturbance and risk of injury, permanent and temporary habitat loss and habitat fragmentation. Species-specific mitigation has been identified for these impacts, which includes pre-construction surveys (to confirm if populations have

changed), reinstatement of lost habitats and precautionary methods of working. Significant residual impacts will remain after mitigation for bats (due to the precautionary approach taken in the assessment), however this significant impact will be short term and temporary.

- 132. Potential impacts during operation may arise from maintenance and operational lighting at the onshore substation. Operational lighting will be designed to conform with best practice guidance to minimise disturbance to light-sensitive species, for example bats.
- 133. Cumulative impacts with the proposed East Anglia ONE North project were assessed as being not significant.

3.2.6 Onshore Ornithology

- 134. Information was gathered through a combination of desk-based assessment and a programme of field surveys (wintering bird and breeding bird surveys) conducted between 2017 and 2018. Additional night-time species-specific surveys were conducted.
- 135. The potential for temporary habitat and disturbance of birds during construction was assessed, along with potential noise and light disturbance during operation associated with the onshore substation. An important consideration in this assessment was construction works potentially overlapping (or occurring nearby) The Sandlings SPA, which is an important area of habitat for several species of protected bird. Potential significant effects could occur in relation to habitat loss and disturbance during construction, in relation to turtle dove, nightingale, nightjar, woodlark and marsh harrier within the context of the Leiston-Aldeburgh SSSI population.
- 136. Mitigation specific to the SPA and the component SSSI (Leiston-Aldeburgh) would include incorporating a Breeding Bird Protection Plan (BBPP), which will require pre-construction surveys to check for nesting birds and if present, will require additional mitigation measures where it is necessary to undertake work within 200m of the SPA and SSSI during the breeding season. With mitigation, the proposed East Anglia TWO project would have no greater than minor impacts in relation to onshore ornithology. Decommissioning impacts are expected to be no greater than those construction impacts identified.
- 137. With mitigation, cumulative impacts with other relevant projects (the proposed East Anglia ONE North project and Sizewell C New Nuclear Power Station) were assessed as being no greater than minor.

3.2.7 Archaeology and Cultural Heritage

138. The existing onshore archaeology and cultural heritage baseline was established by a desk based exercise and supplemented by a programme of non-intrusive surveys to identify potential archaeological features underground (such as using ground penetrating radar).
139. The onshore archaeological and cultural heritage baseline resource comprises both designated and non-designated heritage assets, and includes both below ground archaeological remains and above ground built heritage assets. The baseline also considered the historic landscape character of the proposed onshore development area.
140. Designated heritage assets have been avoided as part of the site selection process (with the exception of Ridsend (Aldringham Court) associated with proposed tree removal) and as such, no direct physical significant impacts would occur. Further work is required to determine the potential of indirect significant impacts on the setting of designated assets. This will be progressed following PEIR.
141. Non-designated heritage assets may be subject to direct and / or indirect impacts as a result of the proposed East Anglia TWO project. Direct impacts may arise as the result of ground excavation during construction.
142. A draft Written Scheme of Investigation (WSI) will be submitted with the DCO application alongside the ES, which outlines the stages of mitigation to be undertaken post-consent. This will inform further decisions regarding the subsequent archaeological mitigation strategy so that the historic environment resource can be safe-guarded in a manner that is both appropriate and proportionate to the significance of the archaeological remains identified and present. With this commitment in place any impacts are considered to be not significant. Decommissioning impacts are expected to be no greater than those construction impacts identified.
143. Cumulative impacts with other relevant projects (the proposed East Anglia ONE North project and Sizewell C New Nuclear Power Station) were assessed as also being not significant in EIA terms.

3.2.8 Noise and Vibration

144. To inform the noise and vibration impact assessment, a baseline noise survey was undertaken to quantify the existing noise environment in the vicinity of the proposed onshore development area. Noise modelling was undertaken to inform several subsequent assessments in order to determine any potential impacts

relating to the construction and operation of the proposed East Anglia TWO project at receptors agreed with SCC and SCDC Environmental Health Officer.

145. Potential impacts from noise were identified as arising from construction works (and the associated construction traffic) in a small number of locations along the proposed onshore development area. Provided mitigation measures are in place, the proposed East Anglia TWO project is predicted to have no greater than minor impacts in relation to noise.
146. The only sources of noise during the operation of the proposed East Anglia TWO project would be those from the onshore substation and National Grid substation. The Applicant will provide a final design of the proposed East Anglia TWO project which will not exceed the noise limits (at the nearest noise sensitive receptors) to be agreed with the Environmental Health Officer at SCDC. Noise reduction technologies and potential design approaches have been considered and there are many proven mitigation options that can be combined to create a design that will adhere to the required noise limits. Decommissioning impacts are expected to be no greater than those construction impacts identified.
147. No impacts from vibration effects were identified in the assessment.
148. Cumulative impacts with the proposed East Anglia ONE North project will not result in any impacts greater than those considered in the project alone assessment. No significant cumulative impacts were identified with the Sizewell C Energy Plant New Nuclear Power Station when mitigation measures for all projects were taken into account.

3.2.9 Traffic and Transport

149. The traffic and transport assessment for the proposed East Anglia TWO project was based on forecasts of background levels of traffic for 2024 as this represents the earliest likely construction year. Transport requirements were determined through a series of desk based assessments utilising open source data obtained from the Department for Transport and the relevant Highway Authorities. Further traffic data was obtained via commissioned onsite Automatic Traffic Count surveys undertaken in June 2018.
150. Impacts were assessed for the effects on roads of pedestrian severance, pedestrian amenity, road safety and driver delay during construction. With the application of appropriate mitigation measures (such as carefully agreeing delivery routes for lorries avoiding key sensitive areas, use of the haul road to reduce trips on local roads, speed control measures (limits, warning signs and markings) and sensitive timing of the works), the residual impact for all roads was assessed to be not significant.

151. Advance notice of the works will be given to minimise disruption. A draft Construction Traffic Management Plan will be developed which will include measures for managing the HGV movements on sensitive highway links. This will be submitted with the DCO application. The final Construction Traffic Management Plan will be agreed with the relevant Highways Authorities and finalised prior to construction.
152. No significant impacts were identified for the operational phase of the proposed East Anglia TWO project. Decommissioning impacts are expected to be no greater than those construction impacts identified.
153. Cumulative impacts with other relevant projects (the proposed East Anglia ONE North project and Sizewell C New Nuclear Power Station) were assessed as being no greater than with the proposed East Anglia TWO project alone impacts.

3.2.10 Human Health

154. An assessment of activities which may have an impact on physical or mental health during the construction, operation and decommissioning of the proposed East Anglia TWO project was undertaken. Impacts associated with offshore elements of the proposed East Anglia TWO project were not assessed as there are no sensitive receptors close enough to experience health impacts.
155. The human health effects that were considered included: construction and operational noise, air quality during construction, exposure to contaminated land during construction, employment during construction and operation, and exposure to electromagnetic fields (EMF) during operation.
156. The proposed onshore development area is largely comprised of agricultural land and has been sited away from population centres and sensitive receptors, thus the potential number of receptors has been reduced through site selection and the proposed East Anglia TWO project design.
157. With the implementation of the mitigation measures identified within the separate topics (such as measures to minimise construction noise and to minimise the risk of dust generation), no significant impacts were predicted. Decommissioning impacts are expected to be no greater than those construction impacts identified.
158. The buried cable systems will produce EMFs. The Applicant's policy is to only design and install equipment that is compliant with the relevant exposure limits, in accordance with the provisions of the Government's Code of Practice on Compliance. As such, the conclusion of the assessment is that there would be no effect to population health due to EMFs during operation.

159. Cumulative impacts with the proposed East Anglia ONE North project on human health will not be significant. At present, there is insufficient information in the public domain (which can be used in the human health cumulative impact assessment) to effectively assess significance of cumulative effect with Sizewell C New Nuclear Power Station.

3.3 Project Wide Impacts

3.3.1 Offshore Seascape, Landscape and Visual Amenity (SLVIA)

160. The Seascape, Landscape and Visual Impact Assessment identifies and assesses changes to the seascape and landscape features resulting from the proposed East Anglia TWO project.
161. Significant construction and operational effects are not anticipated to be widespread, but localised and site specific, relating to the narrow coastal edges of the Suffolk coast. Nearest viewpoints at the coast (31km from the East Anglia TWO windfarm site) represent the worst-case likelihood of visibility for the wind turbines. At these locations, the wind turbines are likely to only be visible to the public 33% of the time under conditions of excellent visibility. Moving further from the East Anglia TWO windfarm site, the percentage likelihood of wind turbine visibility decreases. For example, at the furthest viewpoint surveyed (48km from the East Anglia TWO windfarm site), likelihood of visibility of the wind turbines is 15% of the time under conditions of excellent visibility.
162. The East Anglia TWO offshore windfarm area fits within the existing seascape character given the influence of existing offshore windfarms in this area of coastline. Impacts from the decommissioning of the proposed East Anglia TWO project are expected to be similar to those construction impacts but lower in magnitude.
163. Cumulative seascape impacts were assessed against the proposed East Anglia ONE North project and other existing windfarms. In comparison to the project alone assessment, the cumulative impact assessment resulted in effects of no greater significance and the effects that were identified were impacting the same receptors as the project alone assessment.
164. Offshore photomontage visualisations are available to view online at the following link:

https://www.scottishpowerrenewables.com/pages/east_anglia_two.aspx

3.3.2 Landscape and Visual Amenity (LVIA)

165. The potential effects of the onshore infrastructure of the proposed East Anglia TWO project were assessed for landscape and visual receptors during the construction, operation and decommissioning phases of the proposed East Anglia TWO project.
166. In respect of the landfall location, significant effects would occur only during the construction phase, with no significant effects during the operational phase as there will be no above ground infrastructure.
167. Consultations with the LVIA ETG led to the agreement of viewpoint locations for use in the LVIA of the onshore substation and National Grid infrastructure, as listed in **Table 3.1**. Visual representations of the onshore substation and National Grid substation have been produced, which show the location and baseline view panorama from each of the agreed viewpoints. Photomontage visualisations are available to view online at the following link:

https://www.scottishpowerrenewables.com/pages/east_anglia_two.aspx

Table 3.1 Viewpoints Included in Onshore LVIA

Viewpoint	Grid Reference	Distance from the onshore substation	Distance from the National Grid substation
1 Public Right of Way near Friston House	E641169 N260794	403m	362m
2 Friston, Church Road	E641319 N260543	538m	613m
3 Grove Road, near Pear Tree Farm	E641657 N261801	497m	422m
4 Friston, Grove Road	E641498 N260531	528m	672m
5 Public Right of Way, near Moor Farm	E640884 N261654	652m	474m
6 Friston, Village Green	E641198 N260337	772m	814m
7 Public Right of Way, east of Friston	E641877 N260560	639m	849m
8 B1121 Saxmundham Road, north of Friston	E640477 N260862	958m	791m
9 B1121 Aldeburgh Road, south of Friston	E41464	1.1km	1.3km

Viewpoint		Grid Reference	Distance from the onshore substation	Distance from the National Grid substation
		N259905		
10	B1119 Saxmundham Road	E641095 N262490	1.2km	1.1km
11	Knodishall Hall	E642535 N261903	1.1km	1.2km
12	Knodishall Common	E642952 N260979	1.3km	1.5km
13	B1069 Snape Road	E642372 N259880	1.5km	1.7km

168. In respect to the onshore cable route, there will be no significant effects during the operational phase as there will be no above ground infrastructure. The only significant operational effects are at Raidsend (Aldingham Court Nursing Home) and the Aldeburgh Road due to the removal of woodland. These significant impacts will be mitigated through the establishment of heathland habitat and the partial reinstatement of woodland at Raidsend, at the end of the construction phase.

169. In terms of the onshore substation and National Grid substation, significant effects will occur during the construction phase however these will be short-term and temporary. During operation, potentially significant impacts at the onshore substation and National Grid substation would be largely contained within the local landscape. Significant operational visual effects would be experienced only at Saxmundham Road, Aldeburgh Road, Friston Area C, Grove Road Section B and Suffolk Coastal Cycle Route Section B. Mitigation planting will be introduced and designed with the aim of reducing these identified impacts (see **Figure 3** for the indicative landscape mitigation plan that provides an illustration of areas for landscape mitigation planting). The planting includes areas of fast growing woodland species as this will provide the height required, as well as the density, to ensure effective screening. The landscape mitigation plan will be reviewed following consultation with statutory consultees and the local community. In locations where it is possible to achieve advanced planting, this will be undertaken in consultation with the local community to allow growth prior to completion of construction and commencement of operation. Decommissioning impacts are expected to be no greater than those construction impacts identified.

170. Cumulative effects with the proposed East Anglia TWO project are assessed as causing potentially significant cumulative impacts with the proposed East Anglia ONE North project during construction and operation. Significant construction impacts would be experienced at viewpoints surrounding Friston and these impacts would be short term and temporary. Significant operational visual cumulative effects would be experienced only at the same viewpoints as for the proposed East Anglia ONE North project alone.
171. Assessment with Sizewell C New Nuclear Power Station identified significant cumulative impacts in terms of both visual and landscape effects during the construction phase. There is no inter-visibility between the Sizewell C New Nuclear Power Station and the proposed East Anglia ONE North project. Therefore, no effects greater than those for the proposed East Anglia ONE North were identified during the operational phases of Sizewell C New Nuclear Power Station, East Anglia TWO and the proposed East Anglia ONE North project.

3.3.3 Tourism, Recreation and Socio-Economics

172. The assessment includes a socio-economic and tourism policy review and baseline profile and an impact assessment of the tourism and recreation impacts, as well as a socio-economic impact assessment of the onshore construction phase of the proposed East Anglia TWO project. An impact assessment of the offshore construction elements was also completed.
173. A desk-based assessment combined with consultation enabled an identification of the important recreational and tourism features such as Public Rights of Way (PRoW). Visitors are attracted to the local area to enjoy sandy beaches, historic towns and villages, and open landscapes.
174. No significant tourism and recreation impacts were predicted as a result of the proposed East Anglia TWO project. Tourism and recreation receptors would experience minimal visual impacts and only temporary physical obstruction, noise and traffic impacts.
175. The proposed East Anglia TWO project would provide significant beneficial employment impacts during both construction and operation phases of the proposed East Anglia TWO project. Peak employment was estimated at over 300 staff per day during onshore construction. Offshore construction is expected to generate 100 to 300 Full Time Equivalent (FTE) jobs within East Anglia. Decommissioning impacts are expected to be no greater than those construction impacts identified.

176. Cumulative impacts with the proposed East Anglia ONE North project result in significant beneficial employment impacts during both construction and operation phases and no significant adverse impacts.
177. The cumulative impact assessment with the onshore Sizewell C New Nuclear Power Station project and other offshore windfarm projects concluded that there would be significant beneficial cumulative impacts to short-term, long-term and tourism employment.

4 Next Steps

178. Where possible, consultation responses to the PEIR will inform the basis of further project design refinement and micro-siting or draft mitigation proposals.
179. Environmental assessments will be reviewed and updated for the Environmental Statement following consultation and through ongoing project refinements.
180. This document provides a non-technical summary of the PEIR for the proposed East Anglia TWO project. If you wish to see more detailed information, the Scoping Report (SPR 2017) and the Planning Inspectorate Scoping Opinion (Planning Inspectorate 2017) for the proposed East Anglia TWO project together with the full PEIR are available online at the following link:

https://www.scottishpowerrenewables.com/pages/east_anglia_two.aspx

East Anglia TWO Offshore Windfarm

Appendix 9.15

A3 Maps of the Proposed Grove Wood, Friston Access Route and the Onshore Substation Indicative Landscape Mitigation Plan

Consultation Report

Applicant: East Anglia TWO Limited

Document Reference: 5.19.15

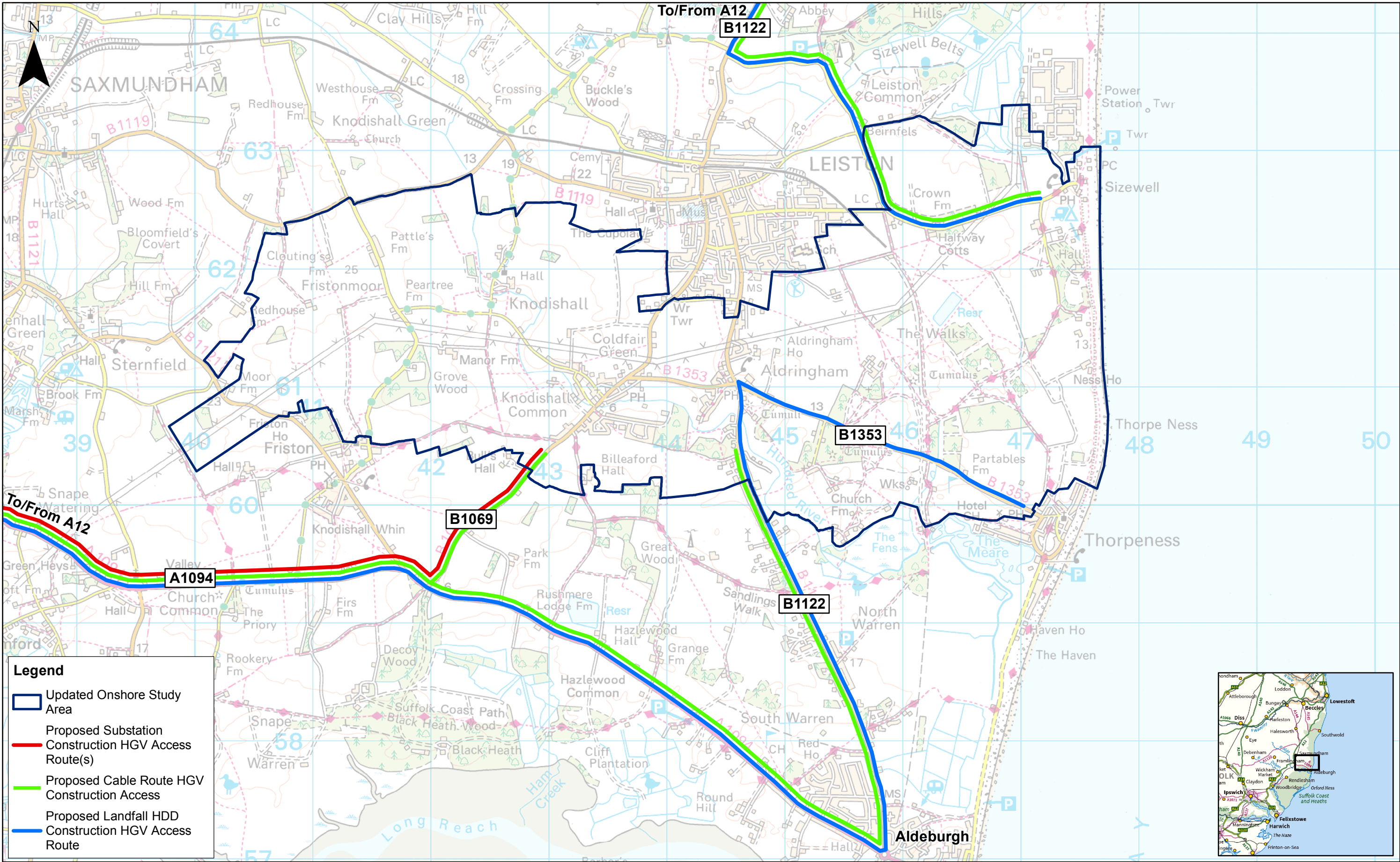
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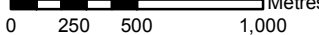
Pursuant to: Section 37(3)(c) of The Planning Act 2008

Author: Royal HaskoningDHV



Date: October 2019

Revision: Version 1



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						Prepared:		FC										Rev		1		Coordinate System: BNG Datum: OSGB36	
						Checked:		PW										Date		02/10/18			
						Approved:		AH										Figure		1			
Rev		Date		By		Comment																	
1		02/10/2018		FC		First Issue.																	



	3	17/01/2019	TH	Document Reference Update			1:5,000 Scale @ A3		<h1>Onshore Substation – Indicative Landscape Mitigation Plan</h1>			
	2	10/12/2018	LA	Second Issue (OPEN)	Prepared:	LA						
	1	23/11/2018	LA	First Issue (OPEN)	Checked:	SM	<small>This map has been produced to the latest known information at the time of issue, and has been produced for your information only. Please consult with the SPR Offshore GIS team to ensure the content is still current before using the information contained on this map. To the fullest extent permitted by law, we accept no responsibility or liability (whether in contract, tort (including negligence) or otherwise) in respect of any errors or omissions in the information contained in the map and shall not be liable for any loss, damage or expense caused by such errors or omissions. Contains Ordnance Survey digital data. © Crown copyright. All rights reserved 2018 Licence number 0100031673.</small>					
	Rev	Date	By	Comment	Approved:	LT						

East Anglia TWO Offshore Windfarm

Appendix 9.16

Guide to Navigating the Preliminary Environmental Information Report

Consultation Report

Applicant: East Anglia TWO Limited

Document Reference: 5.1.9.16

SPR Reference: EA2-DWF-ENV-REP-IBR-000210_009_16 Rev 01

Pursuant to: Section 37(3)(c) of The Planning Act 2008

Author: Royal HaskoningDHV

Date: October 2019

Revision: Version 1

A GUIDE TO NAVIGATING THE PRELIMINARY ENVIRONMENTAL INFORMATION REPORT

Introduction

ScottishPower Renewables has published two separate Preliminary Environmental Information Reports (PEIR) for the proposed East Anglia TWO and East Anglia ONE North offshore windfarm projects.

Each PEIR describes the proposed project and sets out the potential impacts; considering the environmental, social and economic effects of each project and the mitigation measures proposed to reduce impacts.

This 'Guide to Navigating the PEIR' has been produced to assist stakeholders in understanding the structure and key content of each PEIR.

Where to start

The Non-Technical Summary for each project summarises the key characteristics of each project and the key findings of the PEIR. Each Non-Technical Summary is relatively short comprising around 50 pages of text, figures and tables.

More detail

On reading the Non-Technical Summary, should you like more detail on particular aspects of either project, then you can refer to the relevant PEIR. Each PEIR comprises three volumes:

- **Volume 1:** Preliminary Environmental Information Report Chapters
- **Volume 2:** Figures
- **Volume 3:** Appendices

The structure of Volume 1 (Preliminary Environmental Information Report Chapters) is shown in the table below.

Part 1 Introductory Chapters	Part 2 Offshore Chapters	Part 3 Onshore Chapters	Part 4 Wider Scheme Aspects Chapters
1. Introduction 2. Need for the Project 3. Policy and Legislative Context 4. Site Selection and Assessment of Alternatives 5. EIA Methodology 6. Project Description	7. Marine Geology, Oceanography and Physical Processes 8. Marine Water and Sediment Quality 9. Benthic Ecology 10. Fish and Shellfish Ecology 11. Marine Mammals 12. Ornithology 13. Commercial Fisheries 14. Shipping and Navigation 15. Civil and Military Aviation and Radar 16. Marine Archaeology and Cultural Heritage 17. Infrastructure and Other Users	18. Ground Conditions and Contamination 19. Air Quality 20. Water Resources and Flood Risk 21. Land Use 22. Onshore Ecology 23. Onshore Ornithology 24. Archaeology and Cultural Heritage 25. Noise and Vibration 26. Traffic and Transport	27. Human Health 28. Offshore Seascape, Landscape and Visual Amenity 29. Landscape and Visual Impact 30. Tourism, Recreation and Socio-Economics

The Introductory Chapters of the PEIR (Part 1) introduce the PEIR, the project and assessment methodologies.

The Chapters within Parts 2, 3 and 4 set out information relevant to the Chapter title. Each of these chapters follows the same structure:

- **Introduction**
- **Consultation** - presenting details of consultations undertaken
- **Scope** - describing the study area, worst case scenarios, embedded mitigation and monitoring proposals
- **Assessment Methodology** - describing how the impact assessment has been undertaken and the relevant standards and guidelines adopted
- **Existing Environment** - describing aspects of the existing environment
- **Potential Impacts** - describing the potential impacts during construction, operation and decommissioning of the project, proposed mitigation and the residual impact of the project
- **Cumulative Impacts** - describing cumulative impacts with other developments
- **Inter-relationships** - describing the inter-relationships between PEIR Chapters
- **Interactions** - describing the interactions between the impacts identified within the Chapter
- **Summary**
- **References**

The Chapters often refer to supporting documents, studies and figures. These are provided in Volume 2 (Figures) and Volume 3 (Appendices), and follow the same Chapter structure as Volume 1 (PEIR Chapters).

Volume 3 - Appendices

Appendices of each PEIR are available in digital format on the project websites or available to collect on memory sticks from PEIR viewing locations as detailed on the project websites. Printed versions of the appendices are also available to view at Aldeburgh Library or at any of our Public Information Days held during Phase 4 Consultation.

Signposting Document

A signposting document has been produced to highlight where differences occur between the East Anglia TWO and East Anglia ONE North PEIR Chapters. This directs readers to the text that differs between East Anglia TWO and East Anglia ONE North PEIR Chapters.

East Anglia TWO Offshore Windfarm

Appendix 9.17

Feedback Flyer and Freepost Envelope

Consultation Report

Applicant: East Anglia TWO Limited

Document Reference: 5.1.9.17

SPR Reference: EA2-DWF-ENV-REP-IBR-000210_009_17 Rev 01

Pursuant to: Section 37(3)(c) of The Planning Act 2008

Author: Royal HaskoningDHV

Date: October 2019

Revision: Version 1

East Anglia TWO Offshore Windfarm
East Anglia ONE North Offshore Windfarm

Phase 4 Consultation

Relevant responses received from this consultation will be considered when preparing the Development Consent Order (DCO) application for the proposed East Anglia TWO and East Anglia ONE North projects.

Responding to the consultation

Consultation responses should be submitted by either:



Writing to us at the following address or using the Freepost envelope supplied:

Freepost RTLY-RLGH-GKSE
ScottishPower Renewables
East Anglia TWO and East Anglia ONE North
25 Priestgate
Peterborough
PE1 1JL



Emailing us on the relevant project addresses below:

eastangliatwo@scottishpower.com
eastangliaonenorth@scottishpower.com

Please ensure that all comments are submitted before the consultation ends at **midnight on 26 March 2019.**

If your response is relevant to both projects please indicate this by addressing it to both projects, or emailing it to both project mailboxes as detailed above.

Consultation responses may be made publicly available. However, ScottishPower Renewables will not share individuals' data (although ScottishPower Renewables may indicate the general area of an individual's location for context).

Find out more

You can find further information on the project websites:

www.scottishpowerrenewables.com/pages/ea_two_phase_4_consultation.aspx

www.scottishpowerrenewables.com/pages/ea_one_north_phase_4_consultation.aspx



Freepost RTLY-RLGH-GKSE
ScottishPower Renewables
East Anglia TW0 and East Anglia ONE North
25 Priestgate
Peterborough
PE1 1JL

East Anglia TWO Offshore Windfarm

Appendix 9.18

Phase 4 Public Information Day Feedback Summary Document

Consultation Report

Applicant: East Anglia TWO Limited

Document Reference: 5.1.9.18

SPR Reference: EA2-DWF-ENV-REP-IBR-000210_009_18 Rev 01

Pursuant to: Section 37(3)(c) of The Planning Act 2008

Author: Royal HaskoningDHV

Date: October 2019

Revision: Version 1

Phase 4 Consultation Summary

East Anglia TWO Ltd

EA2-DWF-STM-REP-IBR-00877

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1. Introduction

Phase 4 Consultation for the ScottishPower Renewables (SPR) project - East Anglia TWO - involved East Anglia TWO Ltd engaging with the local community as well as key and statutory stakeholders via a number of methods including meetings, website updates, mail drops, mail shots and a series of Public Information Days.

The consultation focused on the Preliminary Environmental Information Report (PEIR), which set out the proposed infrastructure, its potential impacts and the environmental, social and economic effects and mitigation measures proposed.

During Phase 4 Consultation, prescribed consultees, local authorities and those with an interest in the land were consulted in accordance with Section 42 and Section 44 of the Planning Act. Views were sought on the project proposals as well as on the PEIR, which included information on the following:

- Project Description
- Need for the Project
- Policy and Legislative Context
- Site Selection
- Environmental Impact Assessments

The consultation ran from the 11 February 2019 and closed at midnight on the 26 March 2019. Feedback received during the consultation phase in response to the PEIR will further refine the proposed East Anglia TWO project design and the Environmental Impact Assessment (EIA). The final results of the EIA will be presented in an Environmental Statement and a summary of all the consultation responses received will be presented in a Consultation Report, both of which will accompany the Development Consent Order (DCO) application to be submitted in late 2019.

East Anglia TWO is being developed in parallel with the proposed East Anglia ONE North Offshore Windfarm. Separate Development Consent Order applications will be submitted for each and pre-application consultation has been carried out for each project.

2. Phase 4 Consultation Notification and Launch

To ensure that the statutory and key stakeholders, the local community and interest groups were informed of the consultation, local promotion and national advertising was carried out prior to the consultation start date through a variety of channels. This engagement continued throughout the consultation phase as below:

Activity	Date	Appendix
Website Update – addition of Phase 4 page introducing upcoming consultation and confirming dates of Public Information Days	December 2018	
East Anglian Daily Times newspaper advert	28 January & 4 February 2019	Appendix 1
The Time newspaper advert	28 January 2019	
London Gazette newspaper advert	28 January 2019	
Lloyds Register newspaper advert	28 January 2019	
Fishing News newspaper advert	28 January 2019	
Site Notices at 25 locations throughout red line boundary	4 – 8 February 2019	Appendix 2
Website Update – addition of PEIR documentation and how to respond to the consultation to existing Phase 4 pages	28 January 2019	
Press Release distributed to local and regional media informing of Phase 4	28 January 2019	Appendix 3
PEIR Documentation delivered to key and statutory stakeholders and local deposit locations for public access	w/c 28 January 2019	
Letter mail drop to over 16,500 properties to postcodes IP15, IP16, IP17 and IP18 and neighbouring villages Orford, Little Glemham and Marlesford, informing of Phase 4 Consultation, the Public Information Days and where project information can be found from the start of Phase 4	w/c 28 January 2019	Appendix 4
Posters displayed in 70 locations promoting the consultation and PIDs	w/c 28 January 2019	Appendix 5
Email to all key and statutory stakeholders, subscribed contacts, those who have previously engaged with the project informing of Phase 4	30 January 2019	Appendix 6
Email to all key and statutory stakeholders, subscribed contacts, those who have previously engaged with the project reminding of upcoming PIDs	15 February 2019	Appendix 7
Social media promotion through Twitter and Facebook	11 February to 25 March 2019	
Public Information Days – 13 locations	16 February to 9 March 2019	
Email to all key and statutory stakeholders, subscribed contacts, those who have previously engaged with the project reminding of upcoming close of consultation phase	20 February 2019	Appendix 8
Press Release distributed to local and regional media providing update following close of Phase 4	27 March 2019	Appendix 9
Email to all key and statutory stakeholders, subscribed contacts, those who have previously engaged with the project thanking for participation in Phase 4 and informing of next steps	14 April 2019	Appendix 10

3. Public Information Days

Between the 16 February and 9 March, 13 Public Information Days were held throughout Suffolk to consult on the proposed offshore wind project, East Anglia TWO. The information days formed part of the pre-application consultation for these proposed projects.



Along with providing the complete Preliminary Environmental Information Report, the key objective of the Phase 4 Public Information Days was to present the refined development area for the onshore infrastructure, the development plans and proposed mitigation measures and to seek views on these proposals. Proposed development plans were shared with attendees and all material displayed at the events was published on the East Anglia TWO Phase 4 website page.

The feedback received during the consultation will be considered as the proposals are developed, and will be incorporated where appropriate into the final EIA and DCO application.

In total, 738 people attended the Public Information Days, event attendee numbers are shown in the below table.

Table 1- Event and Attendee Numbers

PID Events	Address	Time	Attendance Numbers
Friston 16 February 2019	Friston Village Hall, Church Road, Friston, Saxmundham, IP17 1PU	10am - 4pm	161
Aldeburgh 18 February 2019	Aldeburgh Church Hall, Victoria Road, Aldeburgh, IP15 5EA	2pm - 7pm	125
Leiston 20 February 2019	Sizewell Sports and Social Club, King George's Avenue, Leiston, IP16 4JX	2pm - 7pm	20
Orford 21 February 2019	Town Hall, Market Hill, Orford, Woodbridge, IP12 2NZ	2pm - 7pm	24
Knodishall 22 February 2019	Knodishall Village Hall, School Road, Knodishall, IP17 1UD	2pm - 7pm	70
Thorpeness 23 February 2019	Thorpeness Country Club, The Benthills, IP16 4NU	10am - 4pm	77
Southwold 25 February 2019	Stella Peskett Hall, Might's Road, Southwold, IP18 6BE	2pm - 7pm	15
Friston 27 February 2019	Friston Village Hall, Church Road, Friston, Saxmundham, IP17 1PU	2pm - 7pm	54
Thorpeness 28 February 2019	Thorpeness Country Club, The Benthills, IP16 4NU	2pm - 7pm	30
Aldeburgh 1 March 2019	Aldeburgh Church Hall, Victoria Road, Aldeburgh, IP15 5EA	2pm - 7pm	62
Knodishall 2 March 2019	Knodishall Village Hall, School Road, Knodishall, IP17 1UD	10am - 4pm	49
Southwold 4 March 2019	Stella Peskett Hall, Might's Road, Southwold, IP18 6BE	2pm - 7pm	10
Leiston 9 March 2019	Sizewell Sports and Social Club, King George's Avenue, Leiston, IP16 4JX	10am - 4pm	41

Those attending the Public Information Days were local community members, MPs, business owners, local authority councillors, parish and town councillors and representatives from local interest groups, trusts and authorities.

4. Consultation Materials

The consultation materials made available at Phase 4 consisted of the Preliminary Environmental Information Report (PEIR) in three Volumes as well as a separate Habitat Regulations Assessment. Volume 1 consisted of 30 Chapters, Volume 2 consisted of Figures and Volume 3 contained Appendices in support of the Chapters.



A Non-Technical Summary (NTS) and Guidance Document were produced to support the PEIR documentation. The NTS provided a summary of the proposed projects, the site selection process and the key findings of the Environmental Impact Assessment (EIA) process to date. The Guidance Document was to help navigate the appendices and documentation.

A Signposting Document was also provided which set out any differences between East Anglia ONE North and East Anglia TWO projects.

The complete PEIR was available at all PIDs, identified deposit locations (see below table) for public access and the website.

Table 2 - PEIR Material Deposit Locations

Deposit location	Address	Opening times
Suffolk County Council	Endeavour House, 8 Russell Road, Ipswich, IP1 2BX	Monday to Friday - 9am to 5pm Ask for John Pitchford or Shirley Brown at reception.
Leiston Town Council	Main Street, Leiston, IP16 4ER	Monday and Tuesday - 9am to 12.30pm 2pm to 4.45pm Thursday and Friday - 9am to 12.30pm Alternatively contact 01728 830388 to make an appointment.
Aldeburgh Town Council	Moot Hall, Market Cross Place, Aldeburgh, IP15 5DS	Monday, Tuesday, Wednesday and Friday - 9.30am to 12pm
Aldeburgh Library	32 Victoria Road, Aldeburgh IP15 5EG	Monday, Tuesday, Thursday and Friday - 9am to 1pm Wednesday - 3pm to 6pm Saturday and Sunday - 10am to 12.30pm and 1pm to 3.30pm
OrbisEnergy Centre	Wilde Street, Lowestoft, NR32 1XH	Monday to Friday - 9am to 5pm Available in reception.
Woodbridge Library	New Street, Woodbridge, IP12 1DT	Monday - 10am to 4pm Tuesday and Friday - 9.30am to 7.30pm Wednesday and Thursday - 9am to 5.30pm Saturday - 9am to 5pm Sunday - 10am to 4pm
Knodishall Parish Council	Parish Chair – John Staff	Contact 07793894944 or john_staff@live.co.uk to organise access.
Friston Parish Council	Friston Village Hall, Church Road, Friston, Saxmundham IP17 1PU	Available when the hall is open. Alternatively visit the Friston Parish Council or SASES websites for further information.
Aldringham-cum-Thorpe Parish Council	Parish Clerk - Shirley Tilbrook	Contact 01728 830001 to organise access.

In addition to PEIR and NTS documentation, display boards, a site selection presentation and flythrough video of the onshore and offshore development area were used to display proposal information at each of the PIDs and were made available to access on the website pages.



For use solely at the PIDs was a 3D flythrough tool, created from aerial photos (which form the basis of the 3D visualisation) taken from a manned airplane, flying at 2,300ft above ground level in public airspace. This was used to navigate to particular areas of interest to attendees, to provide detail on the exact route and demonstrate the visual impact of the substation. It was a valuable asset during consultation as it showed both East Anglia ONE North and East Anglia TWO projects fully constructed as below:

1. The offshore turbine location, size and layout as presented in the Preliminary Environmental Information Report (PEIR).
2. The landfall and indicative cable route as presented in the PEIR.
3. The East Anglia ONE North and East Anglia TWO onshore substations as presented in the PEIR.
4. The National Grid Substation.
5. The planting and screening for the onshore substations as presented in the PEIR. The video shows the planting and screening at 15 years post-planting.

The PEIR documentation was made available in hard copy format and was distributed within Suffolk where members of the public could access the information. The locations were identified on the website and consisted of two libraries, one county council, one town council and three parish councils as well as one offshore renewable hub.



5. Responding to the Consultation

Statutory and key stakeholders and the local community were encouraged to provide their views on the proposals in particular where preferences could be identified, in respect of proposed mitigation measures and to share local knowledge that could inform help the plans. Open comments were invited on topics that were of interest to, or affected the responder. Consultees were advised to identify whether they were responding to the East Anglia TWO project, East Anglia ONE North project, or both. The deadline for responses was 26 March 2019. Response methods were as below:

- In writing to:
ScottishPower Renewables East Anglia ONE North and/or TWO
RTLY-RLGH-GKSE FREEPOST, 25 Priestgate, Peterborough, PE1 1JL
- By email to either or both projects eastangliatwo@scottishpower.com and /or eastangliaonenorth@scottishpower.com
- By completing their open comments at the PID events

This information on how to respond to the consultation was provided on the website, via a mail drop, in emails to registered website subscribers and via a flyer provided at the PID events with a Freepost envelope. (See Appendix 11)

6. Community Meetings

In accordance with our Statement of Community Consultation (SoCC) additional engagement was carried out on request in the form of stakeholder meetings and two cabinet meetings as follows:

Local Interest Group Meetings

Save Our Sandlings 21 February 2019

14 people were in attendance and a project update was provided and PEIR documentation was discussed along with the following key areas:

- HGVs and access
- Surveys
- Disposal of soil
- Flooding
- Beach access
- Construction Compound Sites (CCSs)
- Public Rights of Ways
- Aerial photography
- Nightingales
- Contract for Difference
- Coralline Crag
- Construction timescales
- Pollution, vibration, noise and traffic

Resident Meetings

Thorpeness Residents - 28 February 2019

8 people were in attendance. The following topics were discussed:

- PEIR information
- Construction Compound Sites (CCS)
- Haul Roads
- Landfall
- NTS documentation
- Application process
- Promotion of Phase 4
- Tourism surveys
- Differences between EA1N and EA2 projects
- Ecology
- HGVs
- Cable route

Parish Council Meetings

Snape Parish Council Meeting - 8 March 2019

The following areas were discussed:

- Roads access / HGVs
- Offshore ring main
- Site selection
- Socio-economics
- Road improvements
- National Grid connection
- Substation footprint and lighting

Cabinet Meetings

- Suffolk County Council (SCC) Cabinet Meeting - 11 March 2019
- East Suffolk Council (Suffolk Coastal District Council) Cabinet Meeting - 12 March 2019

These meetings were open to the public and attended by project team members to keep up-to-date on the local councillors' discussions around the project.

In addition, a director briefing was given to SCC Councillors on 26 February 2019.

7. Community Responses

Throughout Phase 4 Consultation over 470 responses were received in respect of East Anglia ONE North from individuals and organisations. Table 3 below provides summary of the key comments raised, following an initial review of the responses.

Table 3 - Responses Summary

Topic	Comments Raised
Substation	That the visual mitigation surrounding the substation was insufficient The flooding mitigation was insufficient, specific concerns around existing flooding issues. Noise, dust and light pollution PROW access
Traffic	Use of the A1094 / A1069 / B1353 / B1122 / A12 Junction Safety HGV road use and suitability Impacts on safety Dust and noise Impacts on visitors and tourists
Landfall	Felt that the site was inappropriate Major coastal erosion issue / unstable cliffs (concern around drilling process) Concern of visual impact to visitors
Cable Route	Destruction of AONB Noise, dust and light pollution Environmental impact – wildlife, hedgerows, trees PROW access Impact to neighbours
Economy	No direct benefit to the area No permanent job creation Impact to the tourism industry Impact on resources and amenities
Wider Development Process	Cumulative impact Request joined up thinking with EDF Energy/National Grid on all developments Request coordinated approach for infrastructure development from developers and government
Consultation Process	Too much information / not enough time Lack of engagement with specific parishes (Friston / Snape) Language and terminology used – confusing and not reflective of impact on local area

8. Next Steps

We are currently in the process of collating and analysing all responses to inform the development and refinement of our proposals. Following this our expected timetable is as follows:

- DCO Application in October 2019
- Examination in early 2020
- Decision in early 2021
- 'Requirements' discharged with Local Planning Authorities
- Construction commences early 2024
- Commercial operation mid-2027

We will be providing regular updates through our website on the progress of the East Anglia TWO proposal and application. Alternatively please [subscribe here](#) for email updates.

Appendices

Appendix 1 Newspaper Advert

SECTION 48, PLANNING ACT 2008

REGULATION 4, THE INFRASTRUCTURE PLANNING (APPLICATIONS: PRESCRIBED FORMS AND PROCEDURE) REGULATIONS 2009

NOTICE PUBLICISING A PROPOSED APPLICATION FOR A DEVELOPMENT CONSENT ORDER TO CONSTRUCT AND OPERATE EAST ANGLIA TWO OFFSHORE WINDFARM

Notice is hereby given that East Anglia TWO Limited of 3rd Floor 1 Tudor Street, London, EC4Y 0AH ("the Applicant") intends to apply to the Secretary of State for a Development Consent Order ("DCO") under section 37 of the Planning Act 2008 for the construction and operation of the East Anglia TWO Offshore Windfarm, an offshore wind generating station, located approximately 31km from Lowestoft and 32km from Southwold and covering an area of approximately 255km², together with associated development to connect the generating station to the national grid.

The proposed DCO would, amongst other things, authorise:

- Up to 75 offshore wind turbines and their foundations with a maximum hub height of 175m above lowest astronomical tide (LAT), maximum rotor diameter of 250m and maximum tip height of up to 300m above LAT;
- Up to four High Voltage Alternating Current (HVAC) offshore electrical platforms and their foundations to aggregate the power from the wind turbines and convert it into a suitable form for export to shore;
- Up to one offshore construction, operation and maintenance platform and its foundations;
- Up to one offshore meteorological mast and its foundations;
- Subsea cables connecting the wind turbines, the meteorological mast and offshore platforms;
- Up to two offshore subsea export cables to bring electricity from the offshore electrical platforms to landfall located north of Thorpeness in Suffolk;
- Works at landfall to connect the offshore export cables to the onshore cables including transition bays;
- Up to six underground cables and up to two fibre optic cables, of approximately 9km in length, with jointing pits, commencing at the landfall and running in a northern direction towards Sizewell Gap, turning to a south westerly direction towards the B1122 (south of Aldringham), turning to a westerly direction towards Grove Road, and turning north to the onshore substation;
- A new onshore substation in the vicinity of Grove Wood, Friston and a connection into the National Grid infrastructure;
- National Grid infrastructure in the vicinity of Grove Wood, Friston to facilitate a connection into the main transmission network including a new National Grid substation and National Grid overhead line realignment works;
- Associated or ancillary works including improvements to highways, verges and private access roads, construction compounds, construction of a temporary haul road, landscaping and drainage works;
- If required, the permanent and/or temporary compulsory acquisition of land and/or rights and overriding of easements and other rights over or affecting land;
- If required, the temporary stopping up, alteration or diversion of streets;
- The application and/or disapplication of legislation including inter alia legislation relating to compulsory purchase; and
- Such ancillary, incidental and consequential provisions, permits or consents as are necessary and/or convenient.

The proposed works are an environmental impact assessment ("EIA") development for the purposes of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. This means that the proposed works constitute development for which an Environmental Impact Assessment is required and the proposed application for a DCO will be accompanied by an Environmental Statement. The Applicant has prepared Preliminary Environmental Information which contains documents, plans and maps showing the nature and location of the East Anglia TWO Offshore Windfarm and which can be inspected free of charge from 11th February 2019 until 26th March 2019 at the locations and times set out below.

Venue	Opening Hours
Leiston Town Council Council Offices Main Street Leiston Suffolk IP16 4ER	Monday 0900 – 1230, 1400 – 1645 Tuesday 0900 – 1230, 1400 – 1645 Wednesday Closed Thursday 0900 – 1230 Friday 0900 – 1230 Saturday Closed Sunday Closed
Aldeburgh Library 32 Victoria Road Aldeburgh Suffolk IP15 5EG	Monday 0900 – 1300 Tuesday 0900 – 1300 Wednesday 0900 – 1300, 1500 – 1800 Thursday 0900 – 1300 Friday 0900 – 1300 Saturday 1000 – 1230, 1300 – 1530 Sunday 1000 – 1230, 1300 – 1530
Woodbridge Library New Street Woodbridge Suffolk IP12 1DT	Monday 1000 – 1600 Tuesday 0930 – 1930 Wednesday 0900 – 1730 Thursday 0900 – 1730 Friday 0900 – 1930 Saturday 0900 – 1700 Sunday 1000 – 1600
Suffolk County Council Endeavour House 8 Russell Road Ipswich Suffolk IP1 2BX	Monday 0900 – 1700 Tuesday 0900 – 1700 Wednesday 0900 – 1700 Thursday 0900 – 1700 Friday 0900 – 1700 Saturday Closed Sunday Closed
Orbis Energy Centre Orbis Energy Centre Wilde St Lowestoft NR32 1XH	Monday 0830 – 1700 Tuesday 0830 – 1700 Wednesday 0830 – 1700 Thursday 0830 – 1700 Friday 0830 – 1700 Saturday Closed Sunday Closed

A reasonable copying charge may be made for the reproduction of information. Further details in relation to the Project and a copy of the Preliminary Environmental Information and other documents referred to above can also be found on the Applicant's website https://www.scottishpowerrenewables.com/pages/east_anglia_two.aspx.


Public Information Days will also be held by the Applicant on the following dates and locations:

Date	Town/Village	Address	Time
16/02/2019	Friston	Friston Village Hall, Church Road, Friston, Saxmundham, IP17 1PU	1000 – 1600
18/02/2019	Aldeburgh	Aldeburgh Church Hall, Victoria Road, Aldeburgh, IP15 5EA	1400 – 1900
20/02/2019	Leiston	Sizewell Sports and Social Club, King George's Avenue, Leiston, IP16 4JX	1400 – 1900
21/02/2019	Orford	Town Hall, Market Hill, Orford, Woodbridge, IP12 2NZ	1400 – 1900
22/02/2019	Knodishall	Knodishall Village Hall, School Road, Knodishall, IP17 1UD	1400 – 1900
23/02/2019	Thorpeness	Thorpeness Country Club, The Benthills, IP16 4NU	1000 – 1600
25/02/2019	Southwold	Stella Peskett Hall, Rights Road, Southwold, IP18 6BE	1400 – 1900
27/02/2019	Friston	Friston Village Hall, Church Road, Friston, Saxmundham, IP17 1PU	1400 – 1900
28/02/2019	Thorpeness	Thorpeness Country Club, The Benthills, IP16 4NU	1400 – 1900
01/03/2019	Aldeburgh	Aldeburgh Church Hall, Victoria Road, Aldeburgh, IP15 5EA	1400 – 1900
02/03/2019	Knodishall	Knodishall Village Hall, School Road, Knodishall, IP17 1UD	1000 – 1600
04/03/2019	Southwold	Stella Peskett Hall, Rights Road, Southwold, IP18 6BE	1400 – 1900
09/03/2019	Leiston	Sizewell Sports and Social Club, King George's Avenue, Leiston, IP16 4JX	1000 – 1600

Any response or representation to the publication of this notice must be made in writing to: ScottishPower Renewables East Anglia TWO, RTLY-RLGH-GKSE FREEPOST, 25 Priestgate, Peterborough, PE1 1JL or via email at: eastangliatwo@scottishpower.com

Responses must (i) be received by the Applicant on or before 26th March 2019 (ii) be made in writing, (iii) state the grounds of the response or representation and (iv) indicate who is making the response or representation, and (v) give an address to which correspondence relating to the response or representations may be sent.

Consultation responses may be made publicly available; however, the Applicant will not share individuals' data (although the Applicant may indicate the general area of an individual's location for contact).



**SCOTTISH POWER
RENEWABLES**

Appendix 2 Site Notice

SECTION 48, PLANNING ACT 2008

REGULATION 4, THE INFRASTRUCTURE PLANNING (APPLICATIONS: PRESCRIBED FORMS AND PROCEDURE) REGULATIONS 2009 NOTICE PUBLICISING A PROPOSED APPLICATION FOR A DEVELOPMENT CONSENT ORDER TO CONSTRUCT AND OPERATE EAST ANGLIA TWO OFFSHORE WINDFARM

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The proposed DCO would, amongst other things, authorise:

- Up to 75 offshore wind turbines and their foundations with a maximum hub height of 175m above lowest astronomical tide (LAT), maximum rotor diameter of 250m and maximum tip height of up to 300m above LAT;
- Up to four High Voltage Alternating Current (HVAC) offshore electrical platforms and their foundations to aggregate the power from the wind turbines and convert it into a suitable form for export to shore;
- Up to one offshore construction, operation and maintenance platform and its foundations;
- Up to one offshore meteorological mast and its foundations;
- Subsea cables connecting the wind turbines, the meteorological mast and offshore platforms;
- Up to two offshore subsea export cables to bring electricity from the offshore electrical platforms to landfall located north of Thorpeness in Suffolk;
- Works at landfall to connect the offshore export cables to the onshore cables including transition bays;
- Up to six underground cables and up to two fibre optic cables, of approximately 9km in length, with jointing pits, commencing at the landfall and running in a northern direction towards Sizewell Gap, turning to a south westerly direction towards the B1122 (south of Aldringham), turning to a westerly direction towards Grove Road, and turning north to the onshore substation;
- A new onshore substation in the vicinity of Grove Wood, Friston and a connection into the National Grid infrastructure;
- National Grid infrastructure in the vicinity of Grove Wood, Friston to facilitate a connection into the main transmission network including a new National Grid substation and National Grid overhead line realignment works;
- Associated or ancillary works including improvements to highways, verges and private access roads, construction compounds, construction of a temporary haul road, landscaping and drainage works;
- If required, the permanent and/or temporary compulsory acquisition of land and/or rights and overriding of easements and other rights over or affecting land;
- If required, the temporary stopping up, alteration or diversion of streets;
- The application and/or disapplication of legislation including inter alia legislation relating to compulsory purchase; and
- Such ancillary, incidental and consequential provisions, permits or consents as are necessary and/or convenient.

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Suffolk County Council Endeavour House 8 Russell Road Ipswich Suffolk IP1 2BX	Monday 0900 – 1700 Tuesday 0900 – 1700 Wednesday 0900 – 1700 Thursday 0900 – 1700 Friday 0900 – 1700 Saturday Closed Sunday Closed
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16/02/2019	Friston	Friston Village Hall, Church Road, Friston, Saxmundham, IP17 1PU	1000 – 1600
18/02/2019	Aldeburgh	Aldeburgh Church Hall, Victoria Road, Aldeburgh, IP15 5EA	1400 – 1900
20/02/2019	Leiston	Sizewell Sports and Social Club, King George's Avenue, Leiston, IP16 4JX	1400 – 1900
21/02/2019	Orford	Town Hall, Market Hill, Orford, Woodbridge, IP12 2NZ	1400 – 1900
22/02/2019	Knodishall	Knodishall Village Hall, School Road, Knodishall, IP17 1UD	1400 – 1900
23/02/2019	Thorpeness	Thorpeness Country Club, The Benthills, IP16 4NU	1000 – 1600
25/02/2019	Southwold	Stella Peskett Hall, Rights Road, Southwold, IP18 6BE	1400 – 1900
27/02/2019	Friston	Friston Village Hall, Church Road, Friston, Saxmundham, IP17 1PU	1400 – 1900
28/02/2019	Thorpeness	Thorpeness Country Club, The Benthills, IP16 4NU	1400 – 1900
01/03/2019	Aldeburgh	Aldeburgh Church Hall, Victoria Road, Aldeburgh, IP15 5EA	1400 – 1900
02/03/2019	Knodishall	Knodishall Village Hall, School Road, Knodishall, IP17 1UD	1000 – 1600
04/03/2019	Southwold	Stella Peskett Hall, Rights Road, Southwold, IP18 6BE	1400 – 1900
09/03/2019	Leiston	Sizewell Sports and Social Club, King George's Avenue, Leiston, IP16 4JX	1000 – 1600

Any response or representation to the publication of this notice must be made in writing to:

ScottishPower Renewables East Anglia TWO, RTLY-RLGH-GKSE FREEPOST, 25 Priestgate, Peterborough, PE1 1JL or via email at: eastangliatwo@scottishpower.com

Responses must (i) be received by the Applicant on or before **26th March 2019** (ii) be made in writing, (iii) state the grounds of the response or representation and (iv) indicate who is making the response or representation, and (v) give an address to which correspondence relating to the response or representations may be sent.

Consultation responses may be made publicly available; however, the Applicant will not share individuals' data (although the Applicant may indicate the general area of an individual's location for context).



**SCOTTISH POWER
RENEWABLES**

Appendix 3 Press Release – Phase 4 Notification



PRESS RELEASE

Under embargo until 00:01 28th January 2019

Phase 4 Consultation for East Anglia TWO and East Anglia ONE North Offshore Windfarms

ScottishPower Renewables is launching Phase 4, the final phase of consultation on its proposed East Anglia TWO and East Anglia ONE North offshore windfarm projects, which will run until 26th March 2019.

Following previous pre-application consultation phases with the local community and stakeholders, ScottishPower Renewables has listened to feedback, developed the proposals and incorporated these into draft documents to be presented at this final phase of consultation.

Phase 4 is based on a draft Environmental Statement, which sets out the proposed infrastructure and its potential environmental impacts. It will provide further information on the proposals, including the Preliminary Environmental Information Report (PEIR) and the key findings of the Environmental Impact Assessment, to include detailed information on traffic, flooding and landscaping.

The site selection chapter sets out the reasons for ScottishPower Renewables' choice of substation site, taking into account the environmental, social and economic effects and including, where relevant, technical and commercial feasibility.

ScottishPower Renewables is holding 13 Public Information Days where the project team and technical experts will be on hand to talk through the information, share details on how the proposals have developed since the previous phase of consultation and answer questions.

East Anglia TWO and East Anglia ONE North, with a capacity of 900MW and 800MW respectively, follow-on from the 714 MW East Anglia ONE project that is currently in construction and the 1,200MW East Anglia THREE scheme, which received planning consent in 2017. East Anglia TWO and East Anglia ONE North could provide enough clean energy to power the equivalent of 1.3 million homes*.

David Walker, Development Director at ScottishPower Renewables, said: "As a responsible developer, we are keen to work with local communities and stakeholders to share the latest information on our proposals, answer questions and receive feedback.

"During Phase 4, we will be consulting with stakeholders and residents on the environmental reports, as well as sharing further information on the proposed onshore development area, mitigation and traffic plans.

"Community views play an important part in shaping our proposals and we encourage as many people as possible to take part in the consultation, to engage with us and provide feedback."

The consultation material, including the Preliminary Environmental Information Report, will be available from 11th February 2019 until 26th March 2019 at the following locations:

Location	Address	Access Details
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Aldeburgh Library	32 Victoria Road Aldeburgh Suffolk IP15 5EG	Monday, Tuesday, Thursday and Friday 9am to 1pm Wednesday - 3pm to 6pm Saturday and Sunday - 10am to 12.30pm and 1pm to 3.30pm
Leiston Town Council	Main Street Leiston Suffolk IP16 4ER	Monday and Tuesday - 9am to 12.30pm and 2pm to 4.45pm Thursday and Friday - 9am to 12.30pm Alternatively contact 01728 830388 to make an appointment.
Suffolk County Council	Endeavour House 8 Russell Road Ipswich Suffolk, IP1 2BX	Monday to Friday 9am to 5pm. Ask for John Pitchford or Shirley Brown at reception.
Woodbridge Library	New Street Woodbridge Suffolk IP12 1DT	Monday - 10am to 4pm Tuesday and Friday - 9.30am to 7.30pm Wednesday and Thursday - 9am to 5.30pm Saturday - 9am to 5pm Sunday - 10am to 4pm
Aldeburgh Town Council	Moot Hall Market Cross Place, Aldeburgh IP15 5DS	Monday, Tuesday, Wednesday and Friday - 9.30am to 12pm.
OrbisEnergy Centre	Wilde Street Lowestoft NR32 1XH	Available in reception 9am to 5pm Monday to Friday.

Copies of these documents can also be viewed from 30th January on the ScottishPower Renewables website at:

https://www.scottishpowerrenewables.com/pages/east_anglia_one_north.aspx

https://www.scottishpowerrenewables.com/pages/east_anglia_two.aspx

The dates, times and locations of the Public Information Days are as follows:

DATE	LOCATION	ADDRESS	TIME
16/02/2019	Friston	Friston Village Hall, Church Road, Friston, Saxmundham, IP17 1PU	10am - 4pm
18/02/2019	Aldeburgh	Aldeburgh Church Hall, Victoria Road, Aldeburgh, IP15 5EA	2pm - 7pm
20/02/2019	Leiston	Sizewell Sports and Social Club, King George's Avenue, Leiston, IP16 4JX	2pm - 7pm
21/02/2019	Orford	Town Hall, Market Hill, Orford, Woodbridge, IP12 2NZ	2pm - 7pm
22/02/2019	Knodishall	Knodishall Village Hall, School Road, Knodishall, IP17 1UD	2pm - 7pm
23/02/2019	Thorpeness	Thorpeness Country Club, The Benthills, IP16 4NU	10am - 4pm
25/02/2019	Southwold	Stella Paskett Hall, Nights Road, Southwold, IP18 6BE	2pm - 7pm
27/02/2019	Friston	Friston Village Hall, Church Road, Friston, Saxmundham, IP17 1PU	2pm - 7pm
28/02/2019	Thorpeness	Thorpeness Country Club, The Benthills, IP16 4NU	2pm - 7pm
01/03/2019	Aldeburgh	Aldeburgh Church Hall, Victoria Road, Aldeburgh, IP15 5EA	2pm - 7pm
02/03/2019	Knodishall	Knodishall Village Hall, School Road, Knodishall, IP17 1UD	10am - 4pm
04/03/2019	Southwold	Stella Paskett Hall, Nights Road, Southwold, IP18 6BE	2pm - 7pm
06/03/2019	Leiston	Sizewell Sports and Social Club, King George's Avenue, Leiston, IP16 4JX	10am - 4pm

All consultation material will be available online and feedback can be submitted via freepost or email to:



ScottishPower Renewables East Anglia ONE North
RTLY-RLGH-GKSE FREEPOST, 25 Priestgate, Peterborough, PE1 1JL

ScottishPower Renewables East Anglia TWO
RTLY-RLGH-GKSE FREEPOST, 25 Priestgate, Peterborough, PE1 1JL

eaonenorth@scottishpower.com
eastangliatwo@scottishpower.com

All comments must be submitted before the consultation ends at midnight on 26th March 2019. When responding to this consultation, respondents must make it clear if the response is made in respect of the proposed East Anglia TWO project, the proposed East Anglia ONE North project or both.

- ENDS -

For further information please contact Sophie Fraser or Tom Harvey at Pier Marketing

Sophie T: 07469 244397 E: sophie@pier-marketing.com

Tom T: 07384 463501 E: tom@pier-marketing.com

Pier ScottishPower Renewables team:

Tel: 01394 646400 or E: eatwoandoneorth@pier-marketing.com

For more information on East Anglia TWO visit:

https://www.scottishpowerrenewables.com/pages/east_anglia_two.aspx

For more information on East Anglia ONE North visit:

https://www.scottishpowerrenewables.com/pages/east_anglia_one_north.aspx

*Equivalent number of homes powered calculated by: Number of megawatts multiplied by the number of hours in one year (8,766) multiplied by the average load factor for offshore wind (38.36% as published within the Digest of United Kingdom Energy Statistics), divided by the average annual household energy consumption (3,781KWH).

East Anglia TWO: $900 \text{ MW} \times 0.3836 \times 8,766 \text{ hours} / 3.781 \text{ MWh} = 800,416 \text{ homes}$

East Anglia ONE North: $800 \text{ MW} \times 0.3836 \times 8,766 \text{ hours} / 3.781 \text{ MWh} = 711,481 \text{ homes}$

Total: 1,511,897 homes

Appendix 4 Letter Mail Drop



28th January 2019

Dear Sir/Madam,

**East Anglia TWO Offshore Windfarm
Phase 4 Consultation under the Statement of Community Consultation**

We, East Anglia TWO Limited, are writing to inform you of our phase four pre-application consultation for the proposed East Anglia TWO Offshore Windfarm.

East Anglia TWO Limited will consider any relevant responses to this consultation received when preparing the final development consent order application for the proposed East Anglia TWO project.

Background to the proposed East Anglia TWO project

The East Anglia TWO windfarm site is located approximately 31km Lowestoft and 32km from Southwold and covers an area of approximately 255km². The East Anglia TWO windfarm site will contain up to 75 wind turbines, offshore platforms and other offshore electrical infrastructure. Offshore electrical infrastructure will export electricity generated by the wind turbines via export cables to a landfall located north of Thorpeness in Suffolk.

At landfall, the offshore export cables will be connected to the onshore infrastructure. Onshore cables will be routed underground to an onshore substation which will in turn connect into the main transmission network via new transmission infrastructure to be owned and operated by National Grid. The onshore substation and the National Grid infrastructure will be located at Grove Wood, Friston.

Consultation Details

This consultation ends at midnight on the **26th March 2019**.

The consultation material including a preliminary environmental information report will be available from 11th February 2019 until 26th March 2019 at the following locations subject to their normal opening hours:

- Aldeburgh Library, 32 Victoria Road, Aldeburgh, Suffolk, IP15 5EG
- Woodbridge Library, New Street, Woodbridge, Suffolk, IP12 1DT
- Leiston Town Council, Council Offices, Main Street, Leiston, Suffolk, IP16 4ER
- Suffolk County Council, Endeavour House, 8 Russell Road, Ipswich, Suffolk, IP1 2BX
- Orbis Energy Centre, Wilde Street, Lowestoft, NR32 1XH

Copies of these documents can also be viewed on the project website at https://www.scottishpowerrenewables.com/pages/east_anglia_two.aspx.

Public Information Days will be held at the following locations where experts will be on hand to discuss the proposed East Anglia TWO project with you.

ScottishPower Renewables / 320 St Vincent Street, Glasgow, G2 5AD



Take care of the environment.
Printed in black and white and only if necessary.



28th January 2019

DATE	LOCATION	ADDRESS	TIME
16/02/2019	Friston	Friston Village Hall, Church Road, Friston, Saxmundham, IP17 1PU	10am - 4pm
18/02/2019	Aldeburgh	Aldeburgh Church Hall, Victoria Road, Aldeburgh, IP15 5EA	2pm - 7pm
20/02/2019	Leiston	Sizewell Sports and Social Club, King George's Avenue, Leiston, IP18 4JX	2pm - 7pm
21/02/2019	Orford	Town Hall, Market Hill, Orford, Woodbridge, IP12 2NZ	2pm - 7pm
22/02/2019	Knodishall	Knodishall Village Hall, School Road, Knodishall, IP17 1UD	2pm - 7pm
23/02/2019	Thorpeness	Thorpeness Country Club, The Benthills, IP16 4NU	10am - 4pm
25/02/2019	Southwold	Stella Peskett Hall, Rights Road, Southwold, IP18 6BE	2pm - 7pm
27/02/2019	Friston	Friston Village Hall, Church Road, Friston, Saxmundham, IP17 1PU	2pm - 7pm
28/02/2019	Thorpeness	Thorpeness Country Club, The Benthills, IP16 4NU	2pm - 7pm
01/03/2019	Aldeburgh	Aldeburgh Church Hall, Victoria Road, Aldeburgh, IP15 5EA	2pm - 7pm
02/03/2019	Knodishall	Knodishall Village Hall, School Road, Knodishall, IP17 1UD	10am - 4pm
04/03/2019	Southwold	Stella Peskett Hall, Rights Road, Southwold, IP18 6BE	2pm - 7pm
09/03/2019	Leiston	Sizewell Sports and Social Club, King George's Avenue, Leiston, IP18 4JX	10am - 4pm

Responding to this consultation

Any consultation responses should be made to:

Via Freepost

ScottishPower Renewables East Anglia TWO

RTLY-RLGH-GKSE FREEPOST, 25 Priestgate, Peterborough, PE1 1JL

Via Email: eastangliatwo@scottishpower.com

Please ensure that all comments are submitted to East Anglia TWO Limited before the consultation ends at midnight on 26th March 2019.

Consultation responses may be made publicly available however SPR will not share individuals' data (although SPR may indicate the general area of an individual's location for context).

The proposed East Anglia ONE North project

The proposed East Anglia ONE North project is being developed in parallel with the proposed East Anglia TWO project. Separate DCO applications will be submitted for the projects and pre-application consultation is also being carried out separately.

You will receive separate correspondence consulting you on the East Anglia ONE North project. When responding to the consultations please make clear if your response is made in respect of the proposed East Anglia TWO project, the proposed East Anglia ONE North project, or both projects.

We look forward to hearing from you.

Yours faithfully,

East Anglia TWO Stakeholder Team
ScottishPower Renewables

ScottishPower Renewables / 320 St Vincent Street, Glasgow, G2 5AD



Take care of the environment.
Printed in black and white and only if necessary.

Appendix 5 Public Information Day Posters

East Anglia TWO Offshore Windfarm East Anglia ONE North Offshore Windfarm Public Information Days

ScottishPower Renewables' Phase 4 Consultation for the proposed East Anglia TWO and East Anglia ONE North offshore windfarms will take place from Monday 11 February 2019 to Tuesday 26 March 2019. ScottishPower Renewables will be holding 13 Public Information Days, where experts will be on hand to discuss the impact of the projects and proposed mitigation options. Details of these drop-in events are shown below:

Venue	Date	Time
Friston Friston Village Hall, Church Road, Friston, Saxmundham, IP17 1PU	Saturday 16 February 2019	10am – 4pm
Aldeburgh Aldeburgh Church Hall, Victoria Road, Aldeburgh, IP15 5EA	Monday 18 February 2019	2pm - 7pm
Leiston Sizewell Sports and Social Club, King George's Avenue, Leiston, IP16 4JX	Wednesday 20 February 2019	2pm - 7pm
Orford Town Hall, Market Hill, Orford, Woodbridge, IP12 2NZ	Thursday 21 February 2019	2pm - 7pm
Knodishall Knodishall Village Hall, School Road, Knodishall, IP17 1UD	Friday 22 February 2019	2pm - 7pm
Thorpeness Thorpeness Country Club, The Benthills, IP16 4NU	Saturday 23 February 2019	10am – 4pm
Southwold Stella Peskett Hall, Rights Road, Southwold, IP18 6BE	Monday 25 February 2019	2pm - 7pm
Friston Friston Village Hall, Church Road, Friston, Saxmundham, IP17 1PU	Wednesday 27 February 2019	2pm - 7pm
Thorpeness Thorpeness Country Club, The Benthills, IP16 4NU	Thursday 28 February 2019	2pm - 7pm
Aldeburgh Aldeburgh Church Hall, Victoria Road, Aldeburgh, IP15 5EA	Friday 1 March 2019	2pm - 7pm
Knodishall Knodishall Village Hall, School Road, Knodishall, IP17 1UD	Saturday 2 March 2019	10am – 4pm
Southwold Stella Peskett Hall, Rights Road, Southwold, IP18 6BE	Monday 4 March 2019	2pm - 7pm
Leiston Sizewell Sports and Social Club, King George's Avenue, Leiston, IP16 4JX	Saturday 9 March 2019	10am - 4pm

If you would like further information about East Anglia TWO or East Anglia ONE North, please visit:
www.spreastanglia.com

Contact ScottishPower Renewables via email:
eastangliatwo@scottishpower.com
eastangliaonenorth@scottishpower.com

Or mail via the Freepost address:
ScottishPower Renewables East Anglia TWO and
East Anglia ONE North
RTLY-RLGH-GKSE
FREEPOST
25 Priestgate
Peterborough, PE1 1JL



Appendix 6 Phase 4 Notification Email



East Anglia TWO Offshore Windfarm: Phase 4 Consultation
January 2019



Phase 4 Consultation commences for East Anglia TWO Offshore Windfarm

We, East Anglia TWO Limited, are writing to inform you of our Phase 4 Pre-application Consultation for the proposed East Anglia TWO Offshore Windfarm. This consultation ends at midnight on the **28 March 2019**.

East Anglia TWO Limited will consider relevant responses received to this consultation when preparing the final Development Consent Order application for the proposed East Anglia TWO project.

The consultation material and information on the locations where printed copies of the materials are available to view, can be found on the [project website](#).

Phase 4 Consultation Public Information Days

Phase 4 Consultation Public Information Days will be held at the following locations where experts will be on hand to discuss the proposed East Anglia TWO project with you and answer any questions that you may have.

Date	Town / Village	Address	Time
16/02/2019	Friston	Friston Village Hall, Church Road, Friston, Saxmundham, IP17 1PU	10am - 4pm
18/02/2019	Aldeburgh	Aldeburgh Church Hall, Victoria Road, Aldeburgh, IP15 5EA	2pm - 7pm
20/02/2019	Leiston	Sizewell Sports and Social Club, King George's Avenue, Leiston, IP16 4JX	2pm - 7pm
21/02/2019	Orford	Town Hall, Market Hill, Orford, Woodbridge, IP12 2HZ	2pm - 7pm
22/02/2019	Knodishall	Knodishall Village Hall, School Road, Knodishall, IP17 1UD	2pm - 7pm
23/02/2019	Thorpness	Thorpness Country Club, The Benthills, IP16 4NU	10am - 4pm
25/02/2019	Southwold	Stella Peskett Hall, Rights Road, Southwold, IP18 6BE	2pm - 7pm
27/02/2019	Friston	Friston Village Hall, Church Road, Friston, Saxmundham, IP17 1PU	2pm - 7pm
28/02/2019	Thorpness	Thorpness Country Club, The Benthills, IP16 4NU	2pm - 7pm
01/03/2019	Aldeburgh	Aldeburgh Church Hall, Victoria Road, Aldeburgh, IP15 5EA	2pm - 7pm
02/03/2019	Knodishall	Knodishall Village Hall, School Road, Knodishall, IP17 1UD	10am - 4pm
04/03/2019	Southwold	Stella Peskett Hall, Rights Road, Southwold, IP18 6BE	2pm - 7pm
05/03/2019	Leiston	Sizewell Sports and Social Club, King George's Avenue, Leiston, IP16 4JX	10am - 4pm

The proposed East Anglia ONE North project

East Anglia TWO is being developed in parallel with the proposed East Anglia ONE North Offshore Windfarm. Separate Development Consent Order applications will be submitted for each and pre-application consultation is also being carried out separately for each project.

You will receive separate correspondence informing you of the East Anglia ONE North project's Phase 4 Pre-application Consultation.

Responding to this consultation

Consultation responses should be submitted:

By post to:
 FREEPOST RTLY-SLGH-GK3E
 ScottishPower Renewables East Anglia TWO
 25 Priorygate, Peterborough, PE1 1JL

By email to:
ea2anglia@scottishpower.com

Please ensure that all comments are submitted to East Anglia TWO Limited before the consultation ends at midnight on **28 March 2019**.

If your response is also relevant to East Anglia ONE North please indicate this by addressing it to, or emailing it to East Anglia ONE North Limited as per the contact details on our East Anglia ONE North consultation correspondence or the [East Anglia ONE North project website](#).

We look forward to hearing from you.

Yours faithfully

East Anglia TWO Stakeholder Team

Appendix 7 Phase 4 Launch and PID Details Email



Phase 4 Public Information Days Commence

Phase 4 Consultation and our schedule of Public Information Days for the proposed East Anglia TWO Offshore Windfarm is underway.

Visit us at the following locations where you can find out more about our plans and how you can provide your feedback. Specialists from all aspects of the proposed East Anglia TWO project will be on hand to talk you through the proposals and will answer any questions that you may have.

Public Information Days
for East Anglia TWO and East Anglia ONE North
Offshore Windfarms

Phase 4 Consultation - To find out more come along to one of our events

Saturday 16th February	- Fritton Village Hall, Fritton, 10am-4pm
Monday 18th February	- Aldeburgh Church Hall, Aldeburgh, 2pm-7pm
Wednesday 20th February	- Stowell Sports & Social Club, Laken, 2pm-7pm
Thursday 21st February	- Town Hall, Orford, 2pm-7pm
Friday 22nd February	- Knodishall Village Hall, Knodishall, 2pm-7pm
Saturday 23rd February	- Thorpeness Country Club, Thorpeness, 10am-4pm
Monday 25th February	- Sheila Peckett Hall, Southwold, 2pm-7pm
Wednesday 27th February	- Fritton Village Hall, Fritton, 2pm-7pm
Thursday 28th February	- Thorpeness Country Club, Thorpeness, 2pm-7pm
Friday 1st March	- Aldeburgh Church Hall, Aldeburgh, 2pm-7pm
Saturday 2nd March	- Knodishall Village Hall, Knodishall, 10am-4pm
Monday 4th March	- Sheila Peckett Hall, Southwold, 2pm-7pm
Saturday 9th March	- Stowell Sports & Social Club, Laken, 10am-4pm

The proposed East Anglia ONE North project

East Anglia TWO is being developed in parallel with the proposed East Anglia ONE North Offshore Windfarm. Separate Development Consent Order applications will be submitted for each and pre-application consultation is also being carried out separately for each project. Our Public Information Days will contain information regarding both projects.

You will receive separate correspondence informing you of the East Anglia ONE North Phase 4 pre-application consultation.

Responding to this consultation

Consultation responses should be submitted:

By post to:
FREEPOST RTLY-RLGH-GKSE
ScottishPower Renewables East Anglia TWO
25 Priestgate, Peterborough, PE1 1JL

By email to:
eastangliatwo@scottishpower.com

Please ensure that all comments are submitted to East Anglia TWO Limited before the consultation ends at **midnight on 26 March 2019**.

If your response is also relevant to East Anglia ONE North please indicate this by addressing it, or emailing it to East Anglia ONE North Limited as per the contact details on our East Anglia ONE North consultation correspondence or the [East Anglia ONE North project website](#).


All consultation material and information on the locations where printed copies are available to view, can be found on the [project website](#).

We look forward to hearing from you.


Yours faithfully

East Anglia TWO Stakeholder Team

Appendix 8 Phase 4 Close Reminder Email



East Anglia TWO Offshore Windfarm: Phase 4 Consultation March 2019



Phase 4 Consultation Deadline Approaching

Phase 4 Consultation for the proposed East Anglia TWO Offshore Windfarm ends at midnight on 26 March 2019.

Please ensure that you have had time to review our material and have your say on the proposed development, particularly the environmental, social and economic effects of the project and the mitigation measures proposed to reduce impacts.

Details of how you can provide your feedback to us can be found below.

All consultation material and information on the locations where printed copies are available to view, can be found on the [project website](#).

The proposed East Anglia ONE North project

East Anglia TWO is being developed in parallel with the proposed East Anglia ONE North Offshore Windfarm. Separate Development Consent Order applications will be submitted for each and pre-application consultation is also being carried out separately for each project. Our Public Information Days will contain information regarding both projects.

You will receive separate correspondence informing you of the East Anglia ONE North Phase 4 pre-application consultation.

Responding to this consultation

Consultation responses should be submitted:

By post to:
FREEPOST RTLY-RLGH-GKSE
ScottishPower Renewables East Anglia TWO
25 Priestgate, Peterborough, PE1 1JL

By email to:
eastangliatwo@scottishpower.com

Please ensure that all comments are submitted to East Anglia TWO Limited before the consultation ends at **midnight on 26 March 2019**.

If your response is also relevant to East Anglia ONE North please indicate this by addressing it, or emailing it to East Anglia ONE North Limited as per the contact details on our East Anglia ONE North consultation correspondence or the [East Anglia ONE North project website](#).

We look forward to hearing from you.

Yours faithfully

East Anglia TWO Stakeholder Team

Appendix 9 Press Release – Phase 4 Update



PRESS RELEASE

Embargoed until 00:01, 27th March 2019

Consultation closes following extensive engagement

ScottishPower Renewables' Phase 4 Consultation on its East Anglia TWO and ONE North Offshore Windfarms closed at midnight on the 26th March.

The consultation saw extensive engagement with stakeholders including local Councils, residents and community groups and included 13 Public Information Days held at a range of locations across Suffolk, allowing people to discover more information on the proposals and speak to a range of technical specialists about the projects in depth.

Following the consultation, ScottishPower Renewables will be reviewing the feedback received and finalising its plans before submitting Development Consent Applications for the projects to the Government in October 2019.

David Walker, Development Director at ScottishPower Renewables, said: "We would like to thank everyone who provided feedback and attended our events throughout what has been a productive consultation period.

"We have received some 600 consultation responses, with key themes including traffic and transport, construction timetables and the impacts of our proposed substations. Every response is carefully reviewed and considered. Where possible suggestions will be taken into account and will help to shape our plans before submission.

"Our East Anglia TWO and East Anglia ONE North offshore windfarms could deliver significant economic benefits to the region, providing work for local businesses and lasting training and employment opportunities for residents. We are also looking at developing a community funding scheme to benefit the areas in which we will be working."

Phase 4 was based on a draft Environmental Statement, which sets out the proposed infrastructure and potential environmental impacts of the projects. It provided further information on the proposals, including the Preliminary Environmental Information Report (PEIR) and the key findings of the Environmental Impact Assessment, including detailed information on traffic, flooding and landscaping.

East Anglia TWO and East Anglia ONE North combined could provide enough clean energy to power the equivalent of 1.4 million homes*, helping to meet the UK's carbon reduction targets and tackle climate change.

The end of the consultation period follows the launch of the new joint government-industry Offshore Wind Sector Deal, which will see offshore wind reach the connected capacity of 30GW and deliver one-third of the UK's electricity by 2030. It is also expected that the number of jobs in the industry will rise to 27,000 under the new deal, with 6,000 of these predicted to be in the East.

- ENDS -

For further information please contact Sophie Fraser or Tom Harvey at Pier Marketing

Sophie T: 07469 244397 E: sophie@pier-marketing.com

Tom T: 07384 463501 E: tom@pier-marketing.com

Pier ScottishPower Renewables team:

Appendix 10 Phase 4 Thank You Email



Thank you for your responses to Phase 4 Consultation

ScottishPower Renewables would like to thank all those who took part in our Phase 4 Consultation on the proposed East Anglia TWO Offshore Windfarm.

The consultation saw extensive engagement with stakeholders, including local councils, residents and community groups and included 13 Public Information Days held at a range of locations across Suffolk, allowing people to discover more information on the proposals and speak to a range of technical specialists about the projects.

ScottishPower Renewables is now collating and reviewing the feedback received, to finalise our plans before submitting a Development Consent Order application for the project to the Government in October 2019.

David Walker, Development Director at ScottishPower Renewables, said: *"We would like to thank everyone who provided feedback and attended our events throughout what has been a productive consultation period."*

"We have received over 500 consultation responses, with key themes including traffic and transport, construction timetables and the impacts of our proposed substations. Every response is carefully reviewed and considered. Where possible suggestions will be taken into account and will help to shape our plans before submission."

"Our East Anglia TWO and East Anglia ONE North offshore windfarms could deliver significant economic benefits to the region, providing work for local businesses and lasting training and employment opportunities for residents. We are also looking at developing a community funding scheme to benefit the areas in which we will be working."

The end of the consultation period follows the launch of the new joint government-industry Offshore Wind Sector Deal, which will see offshore wind reach the connected capacity of 30GW and deliver one-third of the UK's electricity by 2030. It is also expected that the number of jobs in the industry will rise to 27,000 under the new deal, with 6,000 of these predicted to be in the East.

Subscribe to our mailing list by [registering your interest](#) to ensure that you are kept up to date with the project.

Get In Touch

Email us:
eastangliatwo@scottishpower.com

Write to us:
FREEPOST RTLY-RLGH-GKSE
ScottishPower Renewables East Anglia TWO
25 Priestgate, Peterborough, PE1 1JL

East Anglia TWO Stakeholder Team

Appendix 11 Feedback Methods Flyer

East Anglia TWO Offshore Windfarm
East Anglia ONE North Offshore Windfarm

Phase 4 Consultation

Relevant responses received from this consultation will be considered when preparing the Development Consent Order (DCO) application for the proposed East Anglia TWO and East Anglia ONE North projects.

Responding to the consultation

Consultation responses should be submitted by either:



Writing to us at the following address or using the Freepost envelope supplied:

Freepost RTLY-RLGH-GKSE
ScottishPower Renewables
East Anglia TWO and East Anglia ONE North
25 Priestgate
Peterborough
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Please ensure that all comments are submitted before the consultation ends at midnight on 26 March 2019.

If your response is relevant to both projects please indicate this by addressing it to both projects, or emailing it to both project mailboxes as detailed above.

Consultation responses may be made publicly available. However, ScottishPower Renewables will not share individuals' data (although ScottishPower Renewables may indicate the general area of an individual's location for context).

Find out more

You can find further information on the project websites:

www.scottishpowerrenewables.com/pages/ea_two_phase_4_consultation.aspx
www.scottishpowerrenewables.com/pages/ea_one_north_phase_4_consultation.aspx



East Anglia TWO Offshore Windfarm

Appendix 9.19

Phase 4 Consultation Key Feedback and the Applicant's Responses

Consultation Report

Applicant: East Anglia TWO Limited

Document Reference: 5.1.19

SPR Reference: EA2-DWF-ENV-REP-IBR-000210_009_19 Rev 01

Pursuant to: Section 37(3)(c) of The Planning Act 2008

Author: Royal HaskoningDHV

Date: October 2019

Revision: Version 1

Phase 4 Consultation				
Topic	Feedback	Stakeholders	Number of times feedback received	Action
Policy and Legislative Context	<p>National Planning Framework</p> <ul style="list-style-type: none"> • “The National Planning Framework promotes schemes that utilise renewable energy resources. This should be in tandem with energy efficiency measures particularly in any new development and should be consistent with the need to safeguard residential amenity the environment and the landscape” – the Applicant’s development proposed in Friston cannot meeting these criteria. • NPPF states that development in the AONB should only take place in exceptional circumstances. • Project ignores the local planning policy that the public were consulted on and confirmed. • The DCO system has been abused by the Applicant in the past (EA1/Bawdsey), they are likely to do it again. • The effects of the proposed development at Friston have been given insufficient consideration and as such the process to date is not compliant with NPS-EN1. • The fact that the Applicant has secured rights from The Crown Estate does not prevent the impacts being considered greater than the benefits (contrary to Paragraph 1.1.2 of EN-1). • In line with paragraph 2.5.33 of EN-3, it is the Applicant’s responsibility to demonstrate no adverse impacts on designated sites. 	Local Community Members; Suffolk Energy Action Coalition; National Trust	9	Chapter 3 Policy and Legislative Context of the Environmental Statement (ES) (Document Reference: 6.1), when read together with the Development Consent and Planning Statement (Document Reference: 8.2), provides an overview of the need for the project and sets out the planning context applicable to the proposed East Anglia TWO project. The two documents provide an assessment of how the proposed development accords with relevant national, regional and local planning policies and legislation. The ES as a whole assesses all impacts, in line with the scoping opinion and subsequent consultation, and provides the information required to enable the decision on development consent to be made.

Phase 4 Consultation				
Topic	Feedback	Stakeholders	Number of times feedback received	Action
	Government Renewable Energy Strategy <ul style="list-style-type: none"> Proposal is at odds with the Government's renewable energy strategy, which aims to preserve the world for future generations. 	Local Community Members	4	In order for the UK to achieve the reduction in emissions required by the EU UK Government set a target to produce 15% of UK energy from renewable sources by 2020. This includes a sub-target of 30% of electricity to be produced from renewable sources. With a total installed maximum capacity of up to 900MW, the proposed East Anglia TWO project alone has the potential to meet approximately 4% of the UK cumulative deployment target for 2030. For more information see Chapter 2 Need for the Project of the ES.
	Local Plan and Local Planning Policy <ul style="list-style-type: none"> No power installations in the local plan. Ignoring district and county council policies. The Suffolk Energy Coast Delivery Board master plan has not been consulted on. 	Local Community Members	3	Chapter 3 Policy and Legislative Context of the ES, when read together with the Development Consent and Planning Statement (Document Reference: 8.2), provides an overview of the need for the project and sets out the planning context applicable to the proposed East Anglia TWO project. The two documents provide an assessment of how the proposed development accords with relevant national, regional and local planning policies and legislation.

Phase 4 Consultation				
Topic	Feedback	Stakeholders	Number of times feedback received	Action
	<p>Marine Policy</p> <ul style="list-style-type: none"> In chapter 3 section 3.4.2.8 paragraph 83 the applicant makes reference to the East Inshore and Offshore Marine Plan and how the development is in line with it. Although the statement wording is correct, it would be beneficial to mention the exact policy being mentioned, in this case “Policy WIND2” as the reference given is for the whole East inshore and Offshore Marine Plan and not the specific statement that the development quotes. This should be amended. Use example template (from MMO) when considering the Marine Plans to demonstrate relevant marine plans and policies have been considered. 	MMO	2	<p>Noted, this paragraph has been amended and all policies from the East Inshore and Offshore Marine Plan are presented in Table 3.2 in Chapter 3 Policy and Legislative Context of the ES.</p> <p>Noted, this template has been considered when preparing the Development Consent and Planning Statement (Document Reference: 8.2) which has been submitted with the final Development Consent Order (DCO) application.</p>
Site Selection and Assessment of Alternatives	<p>Preliminary Environmental Information Report (PEIR) Methodology</p> <ul style="list-style-type: none"> As Natural England (NE) has been involved in the site selection process NE currently have no further comment on this chapter currently. However, NE believe that the Applicant has adopted a good systematic approach that has allowed for a thorough consideration of alternative options. 	Natural England (NE)	1	<p>The Applicant welcomes the positive feedback regarding the systematic approach that has allowed for a thorough consideration of alternative options.</p>

Phase 4 Consultation				
Topic	Feedback	Stakeholders	Number of times feedback received	Action
	<p>Substation location</p> <ul style="list-style-type: none"> Against Friston as a substation location. Concern over substation close to village. Concern over use of 250m buffer from residential property – 500m has been used for other projects. Some properties lie within 250m buffer at Grove Wood, Friston. Precedent set for impacts on other towns and villages. Not suitable for rural landscape. Unclear on why Suffolk was chosen. Substation site less than 50 m from a County Wildlife Site. Other developments would follow this and there would be industrialisation of this rural area – Eurolink and Nautilus have taken an interest in this same site. There is overdevelopment in this area. This will destroy a large greenfield site. Inadequate mitigation measures. Inadequate consultation /democratic process led to the decision to place the substations here. Impact on AONB. Given the amount of land in the surrounding area it seems unnecessary for the development to be so close to the village. Area supports the Protected East Suffolk and Coastal Area Environment. Proximity to the church. 	<p>Local Community Members; Snape Parish Council Meeting; Suffolk County Council (SCC) / Suffolk Coastal District Council (SCDC) (now East Suffolk Council); Church of St Mary the Virgin, Friston; Leiston-cum-Sizewell Town Council; The Hotel Folk Ltd; Suffolk Coast and Heath AONB Partnership; Suffolk Preservation Society; Friston Parish Council / Substation Action Save East Suffolk (SASES);</p>	765	<p>The location of the proposed East Anglia TWO substation (the onshore substation) and the National Grid substation and associated infrastructure is driven by the agreement with National Grid for a grid connection in the vicinity of Sizewell and Leiston, Suffolk. Further work was required to determine the suitability of identified land parcels for siting of substation infrastructure. Following the grid connection agreement, economic and efficiency principles were used to begin to define the onshore substation(s) site selection study area. Following guidelines as set out in Section 4.9.1.2.1 of Chapter 4 Site Selection and Assessment of Alternatives of the ES the Applicant had the following principles for site selection: the onshore substation(s) to be positioned as close to the existing National Grid overhead lines as possible to reduce the requirement for cabling; and the onshore substation and National Grid substation to be positioned as close as possible to each other to meet an efficient and economic system (co-location).</p> <p>The updated Onshore Site Selection Red Amber Green (RAG) Assessment report plus the work streams associated with understanding the potential impacts on the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB) and the Aldeburgh Road woodland crossing enabled the Applicant to enter a decision-making process with a view on the most appropriate substation zone. The Applicant is required to take a balanced view toward site selection and the</p>

Phase 4 Consultation				
Topic	Feedback	Stakeholders	Number of times feedback received	Action
	<ul style="list-style-type: none"> Will detract from the amenity. Will make the area a brownfield site suitable for further development. Due to its existing flood risk, the selection of the Friston site, should have been rejected before this Consultation commenced Only justification of location is proximity to overhead pylons and the willingness of a landowner to sell the Applicant a parcel of land. Pleased that the Applicant showed due regard for National Planning Laws by not choosing a site for the substations in the AONB, however, concerned that the Applicants chosen site at Grove Wood is not on a brownfield site. 	Darsham Parish Council; Suffolk Energy Action Coalition; Snape Maltings; Save Our Sandlings		decision is based on a range of factors including deliverability, legal requirements, planning policy, technical engineering constraints, technical assessments (such as planning policy, landscape and visual impacts and ecology) and with the benefit of knowledge gained on the Applicant's previous projects. The culmination of the various work streams as described in section 4.9.1.3 of Chapter 4 Site Selection and Assessment of Alternatives of the ES enabled the Applicant to decide that the substation zone northeast of Friston (Zone 7) as the selected zone to be taken forward. Further information within Chapter 4 Site Selection and Assessment of Alternatives details the guidelines, methodologies, processes and assessments used.
	Approval of substation location	Local Community Member	1	<p>The RAG Assessment process considered archaeology / heritage, ecology and nature conservation, hydrology and flood risk, engineering and design, community, landscape and visual, property and planning considerations in the comparison of possible substation zones.</p> <p>A target buffer of 250m from residential properties was applied following consultation with Suffolk Coastal and Waveney District Council at the July 2017 Site Selection Expert Topic Group. The onshore substation(s) site selection study area was subdivided into zones based on available space for co-location of the onshore substation and the National Grid substation,</p>
	<p>Substation should have been at Broom Covert, Sizewell/ close to Sizewell.</p> <ul style="list-style-type: none"> Better access routes. This option was not sufficiently pursued. 	Local Community Members; Suffolk Energy Action Coalition;	78	

Phase 4 Consultation				
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	<ul style="list-style-type: none"> Co-location of industry. Sites should be close together to benefit security arrangements. Should be put in Sizewell C area if this proposal falls through. No credible reason why not this location. This would have a shorter cable route. Local authorities suggested Sizewell is much better suited and would alleviate the need for the cable trenches. NG is now using Broom Covert site, so why won't the Applicant. Can use existing overhead transmission cables. Impact minimised in terms of screening and height. Suitable fields at Sizewell for projects. Area is already compromised. Infrastructure is already in place at Sizewell. Sizewell will be in place for another century. Use of Sizewell A as the site is now redundant and the infrastructure already exists. Further assessment should be undertaken in this regard given the level of industrial activity in the vicinity of Sizewell and the general acceptance of power lines and associated infrastructure as part of the landscape there. The decimation of currently unspoilt agricultural land at Friston should be compared against the intensification of an existing industrial facility in the Sizewell area from which rural communities are removed. 	Darsham Parish Council; Aldringham-cum-Thorpe; Suffolk Energy Action Coalition		<p>The Applicant received over 600 responses to Phase 3.5 consultation from members of the public, local interest groups and statutory stakeholders. This consultation highlighted concerns for the proposed substation impacts on the Suffolk Coast and Heaths AONB and drainage implications in relation to Sizewell Marshes nationally protected Site of Special Scientific Interest (SSSI), therefore Broom Covert, Sizewell was not taken forward.</p> <p>Therefore, it was the Applicant's position, based on extensive advice and stakeholder engagement that the Grove Wood, Friston site offers, on balance, the most appropriate option for substation development.</p> <p>Specific concerns relating to the site at Grove Wood, Friston were considered such as flooding and drainage, traffic and transport, landscape and visual impact and effects of the setting of heritage assets and mitigation measures have been set out where appropriate and set out in the relevant ES Chapters.</p> <p>Also, an Outline Landscape Mitigation Plan (OLMP) (presented in the Outline Landscape and Ecological Management Strategy OLEMS (Document Reference: 8.7) submitted with this DCO application) has been produced, through regular consultation with key stakeholders such as the Local Planning Authority and submitted with the DCO application and provides details of mitigation and landscape planting that will be undertaken to mitigate potential visual impacts.</p>

Phase 4 Consultation				
Topic	Feedback	Stakeholders	Number of times feedback received	Action
	Against substation at Broom Covert	EDF Energy	1	The selected location of the onshore substations has been chosen to avoid development in the national designated AONB.
	Substation should have been within the AONB <ul style="list-style-type: none"> Currently there are developments (substations as well as Sizewell) within the AONB. Could have been built there in exceptional circumstances such as: the presence of existing large-scale energy infrastructure; the presence of an existing HGV route; the proximity to the landfall for the offshore power cables, precedence set by Greater Gabbard and Galloper; that none of the available alternative inland sites are suitable. The NPPF does not bar development on the AONB. Infrastructure is already in place. There is no beauty to preserve at Sizewell. Alternative sites within the AONB have been discounted without proper assessment of whether adverse impacts can be mitigated. An analysis of whether the exceptional circumstances referred to in Paragraph 172 of the NPPF applies in a given case inevitably requires one to consider adverse impacts, and to weigh that against the public benefits of a scheme. A proper consideration of whether exceptional circumstances apply in this instance cannot be therefore be undertaken without a proper 	Local Community Members; Suffolk Energy Action Coalition	23	

Phase 4 Consultation				
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	consideration of the extent to which adverse impacts on the AONB can be mitigated.			
	Substations should not be within the AONB <ul style="list-style-type: none"> NPPF states that development in an AONB should only take place in exceptional circumstances. 	Aldeburgh Society; Local Community Members	15	
	Substation should have been close to the coast <ul style="list-style-type: none"> This would save in costs of cable route. Reduces damage to the environment. Would have reduced loss of land to only 20 Ha (rather than 124 Ha). Of the 8 sites considered as part of the site selection process, Friston is the furthest from landfall. Selecting an alternative site closer to landfall would dramatically reduce the visual impact of the development and its impact on the landscape. This does not appear to have been given sufficient weight during the site selection process. 	Local Community Members	13	
	Bawdsey to Bramford connection <ul style="list-style-type: none"> This should be re-considered. This site should have been used initially. Cable route should be upgraded. Further rural development is not acceptable as the Bawdsey to Bramford cable route and 	Local Community Members; Snape Parish Council Meeting; The Hotel Folk Ltd.;	133	In 2010, East Anglia Offshore Wind (a joint venture with the Applicant (the Applicant) and Vattenfall) signed grid connection agreements with National Grid for six 1.2GW offshore wind projects. The connection offers were based on the existing and contracted generation background at that time which included the capacity and proposed timing of Sizewell C amongst others. At that

Phase 4 Consultation				
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	<p>substations could and should have accommodated all the Applicant wind farm projects.</p> <ul style="list-style-type: none"> Remedial action could have been taken to ensure that Bramford could have been used. Would not have not required additional cable routes or substations if Bramford had been managed correctly. Changing from HVDC to HVAC meant there couldn't be further development along the Bawdsey to Bramford cable route. No acceptable reason presented for reducing capacity of cable route the Applicant should be held accountable for not using the Bawdsey to Bramford connection. No explanation as to how a lesser capacity of the cable route will be obtained with the route not being at Bawdsey to Bramford connection. 	Save Our Sandlings; Friston Parish Council / SASES		<p>time, the most economic and efficient connections (considering environmental and programme implications) were identified at Bramford for the East Anglia ONE, East Anglia TWO and East Anglia THREE projects. There was no available capacity near Sizewell to accommodate the East Anglia ONE North and East Anglia TWO projects at that time. In 2016, the Applicant took full ownership of the East Anglia ONE, TWO and THREE projects and subsequently identified that East Anglia TWO and East Anglia ONE North should progress to the development phase in 2017.</p> <p>The Applicant engaged with National Grid in early 2017 to determine connection options based on contracted background at that time and reflecting the projects' timescales and changed capacities. This resulted in the Connection and Infrastructure Options Note (CION) review process which confirmed that connections in the Sizewell area for East Anglia TWO and East Anglia ONE North would be the most economic and efficient while considering environmental and programme implications.</p> <p>Chapter 4 Site Selection and Assessment of Alternatives within the ES provides an explanation for the selection of a connection in the Leiston / Sizewell area, rather than connecting into Bramford.</p>
	Concern over realignment of National Grid lines and further industrialisation by National Grid and National Grid Ventures	Suffolk Preservation Society (SPS);	9	The Applicant has reviewed those projects to be included in the cumulative impact assessment in line with the Planning Inspectorate Advice Note 13 and

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	<ul style="list-style-type: none"> It is important that the masterplan takes into consideration the two potential National Grid Venture projects. At present the possible extensions to the National Grid substation in order to accommodate the National Grid Venture substation connections would involve the land currently shown to be utilised as a SuDs pond. Consideration would also need to be given to how additional cable routes and extensions to the National Grid substation would affect landscaping proposals. The assessment should evaluate common mode failure outage risk. 	Local Community Members; Theberton and Eastbridge Action Group on Sizewell (TEAGS); SCC; SCDC (now East Suffolk Council); Thorpeness Coastal Futures Group, Friston Parish Council / SASES		currently there is insufficient information regarding the National Grid Ventures schemes to include them within the cumulative impact assessment. See Chapter 5 Environmental Impact Assessment Methodology in the ES for the methodology adopted for the cumulative impact assessment screening exercise.
	<p>Landfall Location</p> <ul style="list-style-type: none"> Concern over landfall location. Landfall location in AONB. Should be far east as possible. Impact crossing SSSI. Impact on horses. Thorpeness not suitable. Incentive to use same access point to the grid. No development near Aldeburgh and Thorpeness. Landfall should not be at Sizewell/ Thorpeness. Concern over infrastructure at Thorpeness which is quite fragile. 	Save our Sandlings; Local Community Members; Leiston-cum-Sizewell Town Council; The Hotel Folk Ltd; TEAGS; Friston Parish Council / SASES; Thorpeness Coastal Futures	96	<p>Detailed coastal erosion studies have been undertaken, in consultation with the Local Planning Authority, in order to determine the most appropriate landfall location for the offshore cables. Details of this are provided in Chapter 4 Site Selection and Assessment of Alternatives of the ES.</p> <p>The Applicant has committed to undertaking Horizontal Directional Drilling (HDD) at the landfall area to avoid any interaction with the cliff, beach or intertidal areas. As such, there will be no impact on the cliffs, beach, sea defences or intertidal area, and the beach will remain open during the landfall works.</p>

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	<ul style="list-style-type: none"> Cables be brought onshore south of Thorpeness, between Thorpeness and Aldeburgh, where there are no cliffs, this would avoid damage Thorpeness and reduce costs of drilling. Should be at Sizewell. All proposed East Anglia offshore windfarms should make landfall in a single location. Impact on AONB during HDD 24 hour works. Concern over impact on local ethos and historical background. Unpredictable seabed – proven by uncovering of telephone cable, Gabbard and Galloper cables. Should be at Kessingland. Landfall at the Sizewell Gap Road Permanent degradation of ecologically rich landscape. Alternative suggestion to come ashore on already degraded land e.g. Port of Lowestoft or Orwell/Stour. Regenerate deprived areas which are already developed e.g. Lowestoft and Great Yarmouth. Site inaccessible to the community for several years. No existing infrastructure so everything will need to be built and installed. Geo-physically delicate area. Unstable cliffs and already problems arising for Galloper and Greater Gabbard cable exposures. No consideration of alternatives. 	Group; Sizewell Residents, Friston Parish Council / SASES		The landfall works area will be enclosed with appropriate fencing to ensure a safe working area is achieved and ensure the safety of adjacent land and recreational users.

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	<ul style="list-style-type: none"> All surface activity should be confined to the yellow hatched area marked Indicative transition Bay Area of Search. Sandy Lane track and its vegetation must be left untouched. 			
	<p>Landfall – unstable cliffs and coastal erosion</p> <ul style="list-style-type: none"> Recent death at the cliffs at Thorpeness. Not adequately assessed in the PEIR. Concern that coast will be damaged despite the Applicant's claim that the costal landfall area will be re-instated. Horizontal drilling will be damaging to area. No seismic tests have been conducted. Cliff consists of rare substance, Coralline Crag. Increased erosion rates. Effect on sediment dynamics further along the coast if cliff/sand dunes are damaged. Effects of vibration on the sand dunes. Movement and operation of heavy plant and machinery, drilling, vibration and construction activities in general will adversely impact the stability of, and will cause damage to, the Thorpeness cliffs, exacerbate and increase the existing threat of coastal erosion and ultimately the future of the village of Thorpeness itself. Unstable cliffs of Heritage Coast. Erosion of cliffs will require considerable expenditure to preserve the village in coming years. 	<p>Local Community Members; The Hotel Folk Ltd.; Aldringham-cum-Thorpe Parish Council; Save Our Sandlings; SCC; SCDC (now East Suffolk Council)</p>	49	<p>In order to assess the movement and stability of the shoreline and shallow subtidal areas, and the effects of coastal management plans over the next 50 years, a coastal stability study was commissioned. The study showed that the coastline's main uncertainty associated with the area is in terms of longer change in coastal processes, alongside change in sea levels related to climate change. It was considered that the available information allowed a good assessment of the area in terms of present-day trends of erosion, but that some caution has to be taken in extrapolating these trends into the future. The study was also able to quantify appropriate set back distances from the cliff line depending on where a future landfall location is chosen. This was proposed on a conservative precautionary approach. The Applicant has committed to setting back the landfall transition bays to the potential 100-year erosion prediction line. The environmental benefit of choosing HDD at the landfall removes any possible interaction with the Sizewell Beach SSSI and reduces potential risks associated with coastal cliff erosion in the Thorpeness area.</p>

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	<ul style="list-style-type: none"> SCDC have done a great deal of work on the problem of coastal erosion along the northern section of Thorpeness and the cliffs to the north. This part of the coastline is extremely fragile and is immediately adjacent to the proposed cable landing compound. Landfall at crumbling cliffs. It has not been established what damage to cliff stability will be caused by drilling activities at Thorpeness cliffs. A desktop study only has been performed with a review of only second party data. It is not known what the effect will be on the Coralline Crag, one of the recognised features of the AONB designation. Coralline Crag is mainly only found in East Anglia in the Aldeburgh to Orford area. It is a rare phenomenon in the world of geology. Altered surface drainage due to transition bays have the potential to cause an impact on the cliffs. 			
	<p>Size of the substation</p> <ul style="list-style-type: none"> Substation site is too large (35+ acres). Too big for the land available. Substation site is very constrained. Larger than the area of the village. Higher than highest building in the village. Out of proportion with the local area. Concern over increasing area of development. 	<p>Local Community Members; SPS; Church of St Mary the Virgin, Friston; Leiston-cum-Sizewell Town Council; Aldeburgh Society;</p>	157	<p>The footprint of each substation is necessary to accommodate the electrical equipment required to safely transmit the power from the offshore windfarm to the National Grid substation. A substation height reduction has been achieved on the East Anglia TWO substation resulting in the maximum building height being reduced to 15m. The maximum building height of the National Grid substation using Air-Insulated Substation (AIS) technology has been reduced from 13m to 6m (however this will be 16m for the option of Gas-Insulated Substation (GIS) technology).</p>

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	<ul style="list-style-type: none"> Largest buildings in village are windmill and church, substation dwarfs them. Every effort must be taken to reduce the footprint of the installations. Largest substation of its kind anywhere in the UK and Europe. 	Aldringham-cum-Thorpe Parish Council; SCC/ SCDC (now East Suffolk Council)		An OLMP (presented in the OLEMS (Document Reference: 8.7) submitted with this DCO application) provides details of landscape planting that will be undertaken to mitigate potential visual impacts. The Environmental Impact Assessment (EIA) provides details of both AIS and GIS to ensure that the visual impact has been properly assessed.
	<p>Cable route concerns, length and impact on AONB</p> <ul style="list-style-type: none"> Long, wide and disruptive cable route (6 miles). Impact on AONB and heathland. AONB is to provide permanent protection to areas of national value. 50m/ 75m wide trenches. Cable route impact on roads and fields. AONB designation ignored. Cable route close to Aldringham Court Care Home and Cold Fair Green Primary School. Will encourage further industrial development. Concern over time taken to construct cable corridor. Impact of cable route on attractiveness of holiday cottages. Impact on Sandlings Route through 6 miles of AONB would destroy footpaths and disrupt County Wildlife Site Cable impact on Aldringham Court Nursing Home – reducing garden. 	Local Community Members; Snape Parish Council Meeting; Leiston-cum-Sizewell Town Council; Save Our Sandlings, Friston Parish Council / SASES; Suffolk Coast and Heath AONB Partnership	366	<p>Cable corridor route selection considered a range of constraints and receptors including designated sites, ecology, heritage and proximity to properties. A full description of the cable corridor selection process is provided in Chapter 4 Site Selection and Assessment of Alternatives of the ES. The cable corridor route takes the most direct route to the onshore substation whilst taking account of constraints and landfall to the North of Thorpeness.</p> <p>Routeing across the woodland (and identified removal of trees) to the south of Aldringham Court Nursing Home as this is the only identified location where the cable route can cross Aldeburgh Road. The Applicant is committed to a reduced cable swathe to the south of Aldringham Court of 16.1m per project at this location to retain as many trees as possible at this location, reduce impacts on heritage setting on the Grade II listed building (Raidsend).</p>

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	<ul style="list-style-type: none"> Trenching will scar AONB landscape When cable corridor swathe is restored, only shrubs will be able to regrow and not mature trees. Local sandy soil is unsuitable for drilling. Setting precedent for similar designations to be ignored across the country. No justification as to why the AONB was selected. The AONB Partnership consider that for the development of underground cable routes to minimise the negative impacts on the nationally designated landscape the developer should justify why the cable routes should come through a nationally designated landscape and not to industrial areas to the north or south of the AONB to connect to National Grid transmission infrastructure. 			<p>The Applicant has committed to returning the landfall and cable corridor land to the condition it is prior to construction. Once the cable is installed underground, there will be no visible evidence of its presence other than cable marker posts at field boundaries.</p> <p>Effects of the construction of the onshore infrastructure on AONB special qualities are assessed in Appendix 29.3 Landscape Assessment of the ES and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment of the ES.</p> <p>Justification for the routeing of cable is tied to the requirement to connect to the overhead lines in the vicinity of Sizewell and Leiston (Section 4.7.4 in Chapter 4 Site Selection and Assessment of Alternative Consultation Responses of the ES), and the requirement of the landfall to avoid the offshore Coralline Crag geological outcrop so as to avoid interaction with the operations of Sizewell B (Section 4.8.3 of this in Chapter 4 Site Selection and Assessment of Alternative Consultation Responses of the ES).</p>
	<p>Cable route should be laid simultaneously with East Anglian ONE North</p> <ul style="list-style-type: none"> If done after each other there will be disruption twice, which will lead to further noise, traffic and impact on tourism. Concern over construction of two trenches taking up to 8 years to build. This will minimise disruption to the Sizewell Estate and its farming business. It would make more sense than either holding open the trench for a year or re-digging up the land. 	<p>Save our Sandlings, Local Community Members; Leiston-cum-Sizewell Town Council; Suffolk Coast and Heath AONB Partnership</p>	21	<p>The Applicant notes the comments made by the Suffolk Coast and Heath AONB Partnership. The Applicant has committed to two construction scenarios (parallel construction or sequential construction). Construction methodology for the onshore cable route is outlined in</p>

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	<ul style="list-style-type: none"> Long timescale of works if projects done at different times. While acknowledging that EA1N and EA2 are separate projects, the Applicant have set a precedent of installing two cable routes at the same time at the Bawdsey to Bramford cable route. A similar approach here would minimise the impacts on the AONB and residents. 			<p>Section 6.7.3.7 in Chapter 6 Project Description of the ES.</p> <p>The proposed East Anglia TWO project and proposed East Anglia ONE North project are being developed in parallel but they have been submitted as two separate DCO applications, therefore there are two potential scenarios: that both projects would progress in parallel (construction scenario 1) and that both projects would progress sequentially (scenario 2). This is described further in Chapter 6 Project Description of the ES.</p>
	<p>Cable route suggestions</p> <ul style="list-style-type: none"> Cable route should follow the least disruptive option to pass Hawsells Farm and keep away from the follies. Cable route and CCS location crossing B1353 towards Aldringham could look at other routes such as the small field adjacent to the Parrot. Cable route should be located at the top of the field, as far away as possible to Knodishall to minimise the impact on residents. Revert to HVDC as this would require a much narrower width of cabling. The southern boundary cable corridor route should be located some distance further north whilst still preserving the setting of the Grade II listed Aldringham Court. Underground cables under protected areas. Cable route should be away from people's land and houses and away from all the footpaths and AONB. Cables should be re-routed towards Lowestoft. 	<p>Local Community Members; Aldringham-cum-Thorpe Parish Council; SCC; SCDC (now East Suffolk Council); National Trust, Friston Parish Council / SASES</p>	27	<p>During Phase 4 consultation the Applicant was seeking views from stakeholders on the two route options to inform final selection as shown in Appendix 9.12 of the Consultation Report of the Proposed Onshore Development Area. The Onshore Cable Corridor Refined Area of Search is shown in Figure 4.6 of the ES was identified taking into account consultation.</p>

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	<ul style="list-style-type: none"> Cable Route Section 1a/b (north of Thorpe Vent Wood) – the eastern route option is preferred. Cable Route Section 2a – the route option south of Forty Acre Belt is preferred. Cable Route Section 2b – the eastern route option adjacent to Little Beauties Wood is preferred. Routes should be sited close to field boundaries. Should not cross the B1122. Use the existing Great Gabbard or Galloper windfarm caballing route. Use a shorter route. All land used by the Applicant including the cable landfall site, the onshore cable route and the site of the substations should be restricted to agricultural land. Request that the final siting of the cable corridor is carefully considered in order to lessen the impact on the community as well as the environment. There are a number of properties which abut the onshore development area and it is important that their quality of the life is taken into consideration. Width of cable route not clear. No evidence that the Developer carried out a formal site assessment of the Aldeburgh Road cable crossing point or that any alternative sites along the Aldeburgh Road were identified or considered. 			
	Cable route and other assets	Essex and Suffolk Water	1	Cable corridor route selection considered a range of constraints and receptors including designated sites,

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	<ul style="list-style-type: none"> Water network assets in Aldringham and Coldfair Green and strategic water mains running south and east across the north west section of the development area, these assets could be affected depending on preferred cable route. 			ecology, heritage and proximity to properties. A full description of the cable corridor selection process is provided in Chapter 4 Site Selection and Assessment of Alternatives of the ES. The cable corridor route takes the most direct route to the onshore substation whilst taking account of constraints and landfall to the North of Thorpeness.
	<p>Cable route depth</p> <ul style="list-style-type: none"> Cable route depth at 900mm is insufficient. 	Local Community Member	1	
	<p>Concern over the continental interconnectors following the Thorpeness – Friston route</p>	Local Community Member	1	Routeing across the woodland (and identified removal of trees) to the south of Aldringham Court Nursing Home as this is the only identified location where the cable route can cross Aldeburgh Road. The Applicant is committed to a reduced cable swathe to the south of Aldringham Court of 16.1m per project at this location to retain as many trees as possible at this location, reduce impacts on heritage setting on the Grade II listed building (Raidsend).
	<p>Cable route assessment</p> <ul style="list-style-type: none"> No evidence in the PEIR that the Applicant carried out a formal site assessment of the Aldeburgh Road crossing point. No evidence that any alternative sites along Aldeburgh Road were identified or considered. No formal assessment of the impacts of crossing Aldeburgh Road on the residential properties on Fitches Lane and Aldeburgh Road. No provision is made in the PEIR for the probability that other projects (like the interconnectors) would propose to utilise part or all of the same cable route. Unclear reasoning for showing two cable corridor routing options at the final stage of consultation (Volume 2 Part 1 Chapter 6). 	Local Community Members; Friston Parish Council / SASES; SCC, SCDC (now East Suffolk Council)	7	The ES includes a Cumulative Impact Assessment; however, the interconnectors were screened out as there was not enough information available. The Applicant would not seek to sterilise any opportunity for NGV projects.

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	<ul style="list-style-type: none"> Unclear whether impact on the Sandlings Special Protection Area (SPA) along the cable route would be minimised. Long term mitigation is possible but construction phase needs further discussion with local Councils. 			
	<p>Impact on countryside</p> <ul style="list-style-type: none"> Area is designated as countryside. Area of natural beauty. Impact on natural environment. Nationally protected landscapes. Impact on Suffolk Heritage Coast. Industrialisation of the Heritage Coast. Location is on agricultural land and not suited to such development Long recovery time. Permanent scarring. The AONB in and around Sizewell is important. The natural beauty of the agricultural land in and around Friston is important. 	Local Community Members; Aldeburgh Society; Suffolk Preservation Society; Therese Coffey	171	<p>Potential impacts of the project on a range of environmental topics (including landscape, ecology, socio-economics) are assessed as part of the EIA. Designated sites are considered in these chapters and are of key importance in the assessments.</p> <p>Chapter 4 Site Selection and Assessment of Alternatives of the ES provides rationale and justification for the selection of Grove Wood, Friston for the location of the onshore substations. The OLEMS (Document Reference: 8.7) and OLMP demonstrates adequate space for the required infrastructure and landscape screening.</p> <p>Assessment of potential impacts to landscape character associated with the onshore substations is contained within Chapter 29 Landscape and Visual Assessment of the ES.</p>
	Impact on Site of Special Scientific Interest (SSSI) and Special Protection Area (SPA)	Local Community Member	5	A detailed Method Statement would be developed for working within and / or in proximity to Sandlings SPA. As part of this, a Breeding Bird Protection Plan (BBPP)

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				would be enforced to ensure compliance with the Wildlife and Countryside Act 1981, by ensuring no disturbance to breeding birds. The BBPP will be produced for works within or within 200 m of the SPA and SSSI boundary. For more information see the Information to Support Appropriate Assessment Report (Document Reference: 5.3).
	<p>Concern about decision making regarding the substation location</p> <ul style="list-style-type: none"> Substation location should have been considered when the offshore windfarm site was chosen. Discrepancies in RAG methodology. RAG assessment criteria was to locate the structures away from centres of population. Concern over initial decision to bring power ashore in an AONB. The consultation on Broom Covert, Sizewell was a 'box ticking' exercise. Horlock Rules have not been followed. Proposals for alternative sites are a deliberate ploy to dissipate opposition by turning the local population on itself. The impacts of construction have not fully been considered. Early sites were disregarded too flippantly. The substation site was largely a National Grid decision. Not enough consideration for brownfield sites. Friston chosen as 'path of least resistance'. 	<p>Local Community Members; Suffolk Energy Action Coalition; Friston Parish Council / SASES; Aldeburgh Town Council</p>	97	<p>The RAG assessment process is a recognised tool for the comparison of substation zones in a site selection exercise. Parameters included within the RAG assessment were discussed and agree with SCC and SCDC (now East Suffolk Council) and other statutory stakeholders.</p> <p>The RAG assessment considered archaeology / heritage, ecology and nature conservation, hydrology and flood risk, engineering and design, community, landscape and visual, property and planning considerations (see Appendix 8.13 of the Consultation Report for a Summary of RAG Assessment Methodology).</p> <p>Applicant engaged with National Grid in early 2017 to determine connection options based on contracted background at that time and reflecting the projects' timescales and reduced capacities. This resulted in the Connection and Infrastructure Options Note (CION) review process which confirmed that connections in the Sizewell area for East Anglia TWO and East Anglia ONE</p>

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	<ul style="list-style-type: none"> Failures in scoping, consultation and discrepancies in the RAG methodology at the early stages have resulted in an unfair & inconsistent onshore site appraisal. Suitability of Friston site was not properly considered. Traffic light system was misleading and inaccurate. Failure to explain why the sites were chosen. Lack of transparency. Surface water flooding not considered in RAG assessment. It has been predetermined from the start. A larger area should have been considered at Phase 2. RAG methodology is overly simplistic model to address a scheme of this complexity and lacks rigour. The 23 criteria adopted to analyse the merits of each site are a mix of parameters (i.e. measurable quantities such as distance from OH grid) and attributes (i.e. subjective designations such as visual sensitivity). The resulting 'scoring' system is therefore flawed as it conflates subjective opinion with objective measurable data. In respect of the decision to locate the substations at Friston, the following points concerning the scoring of the RAG methodology: <ul style="list-style-type: none"> Landscape character and sensitivity to development: the LVIA carried out by the Applicant identifies the proposal's permanent adverse effect on the local 			<p>North would be the most economic and efficient while considering environmental and programme implications. Although the CION process confirmed the location for the connection, the final substation location was assessed through the updated Onshore Site Selection RAG Assessment report plus the work streams associated with understanding the potential impacts on the Suffolk Coast and Heaths AONB and the Aldeburgh Road woodland crossing. The Applicant then entered a decision-making process with a view on the most favourable substation zone. The Applicant is required to take a balanced view toward site selection and the decision is based on a range of factors including deliverability, legal requirements, planning policy, technical engineering constraints, technical assessments (such as planning policy, landscape and visual impacts and ecology) and with the benefit of knowledge gained on the Applicant's previous projects.</p> <p>Chapter 4 Site Selection and Assessment of Alternatives of the ES provides rationale and justification for the selection of Grove Wood, Friston for the location of the onshore substations. The OLEMS (Document Reference: 8.7) and OLMP demonstrates adequate space for the required infrastructure and landscape screening.</p> <p>Assessment of potential impacts to landscape character associated with the onshore substations is contained within Chapter 29 Landscape and Visual Assessment of the ES.</p>

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	<p>landscape. To characterise this impact as 'green' (low impact) cannot be supported by the evidence base;</p> <ul style="list-style-type: none"> ○ Opportunity to utilise existing screening: it is not accepted that the screening proposed will have adequately mitigated the development within 15 years; there will be a permanent and severe visual impact on the landscape; ○ Visual sensitivity to development: the development as proposed will have a permanent severe impact on certain defined viewpoints and cannot be characterised as low impact; ○ Presence of residential properties: it is not accepted that properties within 250m of the proposed development will be adequately screened. <ul style="list-style-type: none"> • Timescale absent from RAG assessment. • ATC understands the driver for the location of onshore infrastructure and cable runs is the specific connection offered by National Grid. Although this has been subject to a Connections and Infrastructure Note (CION) assessment, we believe the negative impact on this area has not been accurately assessed. 			<p>Assessment of potential impacts to designated heritage assets associated with the onshore substations is contained within Chapter 24 Onshore Archaeology and Cultural Heritage of the ES.</p> <p>Assessment of potential impacts to Public Rights of Way associated with the onshore substations is contained within Chapter 30 Tourism, Recreation and Socio-Economics of the ES.</p>

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	<p>Alternative approach methodology suggestions</p> <ul style="list-style-type: none"> An alternative to the RAG methodology, and preferable, approach would be to score against each criterion, with each criterion then weighted by a factor representing its value against the whole. It is suggested that this process is repeated again on this basis. The application of subjective "professional judgement" on the part of Royal Haskoning DHV should not replace an objective and transparent weighting system that could be measured and evaluated by third parties. <ul style="list-style-type: none"> For example, one of the criteria is "Presence of potentially contaminated land" which is assessed as "amber" if present and "green" if not. This appears to consider the criterion from the perspective of SRP's potential liability if acquiring such land, when in practice it might be more relevant to score it the other way, so that if present, the land could be assessed and if necessary, remediated as part of the redevelopment works, thereby having a positive impact on the local surroundings. Furthermore, the value attributed to this consideration should be markedly less than that attributed to "Presence of residential properties", given that the presence of contaminated land is typically far easier and cheaper to mitigate against 	Suffolk Energy Action Coalition	3	

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	than the presence of residential properties.			
	The Applicant has not evaluated alternative routes and solutions for bringing energy to shore	Local Community Members; Fisherman	28	The location of the proposed East Anglia TWO substation (the onshore substation) and the National Grid substation and associated infrastructure is driven by the agreement with National Grid for a grid connection in the vicinity of Sizewell and Leiston, Suffolk. Further work was required to determine the suitability of identified land parcels for siting of substation infrastructure. Following the grid connection agreement, economic and efficiency principles were used to begin to define the onshore substation(s) site selection study area. Following guidelines as set out in Section 4.9.1.2.1 of Chapter 4 Site Selection and Assessment of Alternatives of the ES the Applicant had the following principles for site selection: the onshore substation(s) to be positioned as close to the existing National Grid overhead lines as possible to reduce the requirement for cabling; and the onshore substation and National Grid substation to be positioned as close as possible to each other to meet an efficient and economic system (co-location). The updated Onshore Site Selection RAG Assessment report plus the work streams associated with understanding the potential impacts on the Suffolk Coast and Heaths AONB and the
	An alternative site should be considered <ul style="list-style-type: none"> Should have been on a brownfield site (away from AONB and villages). Between Sizewell and Ipswich. Lowestoft area (has sea and rail connections). Leiston airfield. Zone 4. Need a hub where all windfarm power should some ashore (co-located). Substation should be built further west away from the area. Bradwell power station. None of the sites considered were acceptable. There should be a single location nearer to existing development. Abandoned American air bases. 	Local Community Members; Snape Parish Council Meeting; Leiston-cum-Sizewell Town Council; Aldeburgh Society; Suffolk Coast and Heath AONB Partnership; Suffolk Energy Action Coalition; Snape Maltings;	213	

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	<ul style="list-style-type: none"> It is only cost preventing the use of brownfield locations. Move further towards open farmland away from villages. Should be at Kessingland. Substation should be away from the Heritage Coast, rather north or south. The Crown Estate should ensure only brownfield sites are used. Should be adjacent to existing power stations of Sizewell A and B Sandlings Should be outside Suffolk Coast and Heaths Area of Natural Beauty. Development should be in an area requiring regeneration. RAF Bentwaters or RAF Woodbridge should have been considered. Sandlings. Industrial port locations should have been considered. Smaller sites should be located in areas where they can be built into the land and well screen by sensitive landscaping. Insufficient consideration has been given to alternative locations as part of the onshore site selection process. No site beyond Friston was ever considered even if this could mean a more remote location and closer to better road access. 	Save Our Sandlings; Friston Parish Council / SASES		<p>Aldeburgh Road woodland crossing enabled the Applicant to enter a decision-making process with a view on the most favourable substation zone. the Applicant is required to take a balanced view toward site selection and the decision is based on a range of factors including deliverability, legal requirements, planning policy, technical engineering constraints, technical assessments (such as planning policy, landscape and visual impacts and ecology) and with the benefit of knowledge gained on the Applicant's previous projects. The culmination of the various work streams as described in section 4.9.1.3 enabled the Applicant to decide that the substation zone northeast of Friston (Zone 7) as the selected zone to be taken forward. Further information is within Chapter 4 Site Selection and Assessment of Alternatives of the ES which details the guidelines, methodologies, processes and assessments used.</p>

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	<ul style="list-style-type: none"> the Applicant should give further consideration to alternative sites available to the east and north of Friston, based on a more meaningful weighting of the criteria used in the RAG Assessment to measure the environmental, social and economic impacts of the proposed development. 			
	<p>Project Design Approval</p> <ul style="list-style-type: none"> The AONB Partnership acknowledge that the onshore development proposals have sought to avoid introducing major onshore development into the nationally designated AONB, i.e. the substations and overhead cables. The AONB Partnership acknowledge the benefit to the AONB landscape of undergrounding the necessary cables through the nationally designated area during the operational phase but have concerns about impacts during the construction phase. 	Suffolk Coast and Heath AONB Partnership	4	<p>The selected location of the onshore substations has been chosen to avoid development on and potential impacts in the national designated AONB.</p> <p>The acknowledged benefit of undergrounding the necessary cables through the AONB is welcomed. Landscape and visual effects of the construction of the onshore infrastructure on the AONB are assessed in Appendix 29.3 Landscape Assessment and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment of the ES.</p>
	<p>Offshore Substation / Offshore Ring Main</p> <ul style="list-style-type: none"> Use offshore substation. Offshore ring main for multiple offshore wind farms and one connection point and one landfall. This alternative has not adequately been considered. Reliance on report by National Grid in 2015 considering the viability of an integrated offshore 	Local Community Members; Snape Parish Council Meeting; TEAGS; Suffolk Coast and Heath AONB	83	The proposed East Anglia TWO project requires offshore electrical platforms, which are typical for offshore windfarms. These platforms will collect electricity generated by the wind turbines, which is typically generated at a voltage between 33 and 75kV and increase the electrical voltage to one suitable for exporting, typically between 100 and 400kV (High Voltage Alternating Current). Normally, offshore windfarm projects require both offshore electrical

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	<p>design does not remain an appropriate basis for failing to consider this option.</p> <ul style="list-style-type: none"> • Cable could then be routed further south or north and join the land in an area which is not part of the AONB. • Proposal should be reconsidered now that multiple windfarms exist. • Offshore ring main to allow direct connections to the 400kV power grid. • Use Island Hub and Spoke. • Reduces the need for multiple landfalls and 'gashes' through the landscape. • No explanation as to why the offshore platforms were not selected to be the substation. 	<p>Partnership; Suffolk Preservation Society; The Hotel Group Ltd.; Therese Coffey; Friston Parish Council / SASES; Aldeburgh Town Council.</p>		<p>platforms and onshore electrical substations. Offshore electrical substations collect electricity generated from the wind turbines and convert it into a format suitable to be exported to shore. Once onshore, the onshore substation then converts the electricity from a High Voltage Alternating Current format into a format that is suitable for exporting into the national electrical grid network.</p> <p>Following studies by National Grid in 2011 which identified potential savings from a co-ordinated offshore grid network, a workgroup was established to investigate issues and potential solutions. This included the Doggerbank, Hornsea and East Anglia offshore wind developers working with National Grid and with input from Ofgem and DECC.</p> <p>The published report confirmed that such an offshore network could, in theory provide significant investment benefits, however the volume of planned generation capacity and the timescales could not justify the anticipatory investment and the market, policies and regulations did not support such proposals. In particular:</p> <ul style="list-style-type: none"> - 1. The CfD auction regime meant that even consented offshore wind projects could not guarantee their investments would proceed to construction due to uncertainty of tariff award and timing. 2. The OFTO regime does not allow for coordination of connections and anticipatory investment cannot be planned or underwritten.

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				<p>3. National Grid responsibilities are limited to onshore connection points and associated reinforcement (which could include offshore point to point links but not OFTO windfarm links).</p> <p>4. The Planning Inspectorate DCO process and National Policy Statements (NPSs) do not allow for the coordination or consenting of any strategic or anticipatory investments.</p> <p>5. Equipment technology including DC switchgear has not been commercially developed and therefore there is no current means of practically implementing any interlinked offshore grid networks and projects. The conclusions in this Offshore Transmission Co-ordination Project report from 2012 remain valid today.</p>
	<p>Location of Construction Consolidation Sites (CCS)</p> <ul style="list-style-type: none"> Concern over location south-east of B1069. Concern over CCS at the landfall. Landfall CCS to be placed as far west as possible. CCS near Crown Land Cottages should only be accessed via the haul road. Concern over construction compounds. CCS will impact attractiveness of holiday cottages. CCS located on Cable Route Section 1b and 2a have not been sited near field boundaries or roads, further consultation with the landowner is essential. 	<p>Local Community Members; SCC; SCDC (now East Suffolk Council); Suffolk Coast and Heath AONB Partnership; NE</p>	15	<p>Positioning has taken into consideration ecology, archaeology and land use interactions as per PEIR and has incorporated feedback received at Phase 4 consultation.</p> <p>Following Phase 4 consultation, five possible locations have been identified for onshore cable route CCSs within the onshore development area these are:</p> <ul style="list-style-type: none"> Cable route Section 1 (landfall to SPA crossing) is proposed to be facilitated by a CCS immediately south of Sizewell Gap Road to the west of Home Farm. Cable route Section 2 (SPA crossing to Aldeburgh Road) is proposed to be facilitated by a CCS south of the junction between Sizewell

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	<ul style="list-style-type: none"> The CCS area of search of cable route section 2b includes to the west an area of pasture subject to HLS management options which is unsuitable for a CCS. SCC and SCDC request careful consideration is given to the location of the CCSs to ensure they are also sensitively sited. The drawings provided in the Chapter 6 illustrate the positioning of some CCSs in close proximity to residential properties which the Councils would request that the Applicant avoid. Section 22.3.2, Table 22.4 The location strategy for access routes, CCS and jointing bays will be to site them near to field boundaries or roads as far as practical, this should include a commitment to position site project infrastructure outside designated sites as far as practical. The AONB Partnership consider that the developer should pay regard to the purposes of the nationally designated AONB when locating and designing the proposed Construction Consolidation Sites. 			<p>Gap Road and King George's Avenue, to the south of Grimsey's Lane.</p> <ul style="list-style-type: none"> The crossing of the Hundred River and cable routeing through the woodland area to the east of Aldeburgh Road would be facilitated by a CCS immediately south of Thorpeness Road. The cable routeing to cross Aldeburgh Road and the woodland area to the west of Aldeburgh Road would be facilitated by a CCS immediately south of Fitches Lane (southwest of the woodland area). Cable route sections 3 and 4 are proposed to be facilitated by a CCS west of the B1069 Snape Road crossing. <p>Overall the Applicant has reduced the size of the CCS sites by 60% since PEIR. The CCS sites at Landfall, Sizewell Gap East and West have all reduced from 18,400m² to 7,040m². The Hundred River and Fitches Lane CCS's have reduced to 3000m² and Snape Road West CCS has reduced to 16,500m². The Snape Road East CCS has now been replaced with only a Plant Laydown area of 900m². This is a total reduction from 145,900 m² to 61,660m².</p> <p>Proposed CCSs will be located according to the construction activities they are required for. Function and locations of CCS are outlined Section 6.6 and 6.7 in Chapter 6 Project Description of the ES.</p>

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	Interaction with East Anglia ONE North <ul style="list-style-type: none"> These developments should not be considered to take place at the same time. SCC and SCDC feel that as the projects are expected to stand completely independent of one other, each project should have a masterplan design in place in the event only one project is granted a DCO or implemented and the other is not. 	Local Community Members; SCC; SCDC (now East Suffolk Council)	5	The substation location will be interchangeable in the DCO. The most eastern location could be taken for the East Anglia ONE North substation in the event that East Anglia TWO is not taken forward.
	Concern of development in Aldeburgh <ul style="list-style-type: none"> Concern over industrial buildings and pylons in Aldeburgh. 	Local Community Member	2	There will be no buildings or pylons at Aldeburgh as part of East Anglia TWO, this was only included for use of the roundabout which has now been removed from our order limits
	Concern over NSIP Process <ul style="list-style-type: none"> Concern that NSIP process is against the interest of those most affected without any checks and balances once planning permission is granted. 	Local Community Member	1	Should East Anglia TWO be taken forward there will be a number of planning requirements which the Applicant will need to discharge to the satisfaction of the Local Planning Authorities before construction can commence
	Offshore infrastructure <ul style="list-style-type: none"> Against offshore turbines and cables in the proposed area. 	Southwold Fisherman's Association; Harwich Fisherman's Association; Local	3	The Crown Estate Round 3 Zones were the subject of the Offshore Energy Strategic Environmental Assessment (OESEA) undertaken in 2008/2009. The OESEA was prepared to assess the implications of further rounds of offshore windfarm leasing in the UK Renewable Energy Zone and the territorial waters of England and Wales, as well as the implications of other

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		Community Member		<p>industry activities. The assessment covered ecological, physical and human environmental factors including heritage and seascape and landscape effects.</p> <p>Zone Appraisal and Planning (ZAP) was introduced by The Crown Estate as a way of managing how development was taken forward across individual zones. The ZAP process outlined above identified a broad area for the proposed East Anglia TWO project as being an area with a relatively low number of development constraints, both technical and environmental. It was considered that the ZAP process did not highlight any major constraints within the East Anglia TWO windfarm site that would prevent development. As such this site was chosen by the Applicant to be taken through the consenting process.</p>
	<p>Wind Turbine Layout</p> <ul style="list-style-type: none"> The indicative details provided in the PEIRs indicate that the turbines for both projects would occupy the full site area whether 75 x 250 metre turbines or 60 x 300 metre turbines. SCC and SCDC request that the Applicant consider possible alternative arrangements for the layout of the turbines, in particular those of EA2 in order to comply with Government policy and seek to minimise the harm caused. 	SCC; SCDC (now East Suffolk Council)	1	<p>The East Anglia TWO windfarm has a revised site layout, as described in section 28.3.3, of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p>

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	Offshore Cables <ul style="list-style-type: none"> Every effort should be made to maximise the length of cables that are buried and maintain burial over time. Eastern IFCA support the decision to use HDD at landfall as embedded mitigation to avoid impacts on sensitive intertidal habitats. Eastern IFCA support the offshore cable being buried where possible. 	Eastern Inshore Fisheries and Conservation Authority (IFCA)	3	<p>Support form IFCA relating to cable installation methodology noted. Cables will be buried as far as possible using techniques most suitable for the ground conditions in the particular installation area.</p> <p>In areas where cables are unable to be buried due to ground conditions or because of cable crossings, appropriate protection measures will be used which will be implemented through the Scour Protection and Cable Protection Plan</p>
	Decommissioning of offshore infrastructure <ul style="list-style-type: none"> Large rusting structures sticking up all across the east coast and North Sea, when wind turbines become obsolete. Claim that it will all be returned to its original condition on completion is unrealistic. 	Local Community Member	2	<p>It is assumed that all project infrastructure above sea bed level would be removed during decommissioning, for example, monopiles or pin piles would be cut 1-2m below the seabed. Decommissioning of offshore infrastructure is covered in Chapter 6 Project Description of the ES. However, it is anticipated that the detail will be agreed with the relevant authorities at the time of decommissioning and be subject to separate licensing based on best available information at that time. Furthermore, a Decommissioning Plan detailing all site reinstatements and restoration will be produced post-consent but before the project is constructed.</p>
	Interaction with future plans <ul style="list-style-type: none"> Aldringham-cum-Thorpe Parish Council are working with SCDC and Orwell Housing and others on a feasibility study for the provision of Affordable Housing on the field to the north of the B1153, which is currently included in the area 	Aldringham-cum-Thorpe Parish Council	4	<p>The Applicant has undertaken a robust site selection process and is aware of Aldringham-cum-Thorpe Council's future plans. This consultation response is noted.</p>

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	<p>potentially required by the Applicant. Aldringham-cum-Thorpe Parish Council wish that no actions by the Applicant to impact on this.</p> <ul style="list-style-type: none"> Plans are underway for a new Community Centre on the Sports Grounds adjacent to the area required by the Applicant and again Aldringham-cum-Thorpe Parish Council does not wish that any works and activities to be carried out by the Applicant to impact on this proposal. Plans have been produced to provide additional units at the Almshouses, adjacent to the land required by the Applicant, again Aldringham-cum-Thorpe Parish Council would not wish any works and activities to be carried out by the Applicant to impact on these proposals. It is essential that any access road for the construction period and longer term to the transition pits is provided in such a way that it does not compromise the future plans of Aldringham-cum-Thorpe. 			
	<p>Protective Provisions</p> <ul style="list-style-type: none"> Appears from the Consultation documentation that protective provisions may still be required for NGL offshore infrastructure. NGL continues to make a technical objection at this stage. This is in order to reserve NGL's position and NGL's right to identify and assess further general and specific key issues and resultant requirements and protections based on such further detailed proposals, before NGL is 	EDF Nuclear Generation; Network Rail; National Grid	4	Noted.

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	<p>able to withdraw its reasonable technical objection.</p> <ul style="list-style-type: none"> • Network Rail have standard protective provisions which may need to be included in the DCO. • Where the Promoter intends to acquire land, extinguish rights, or interfere with any of NGET's & NGG's infrastructure, both will require appropriate protective provisions in an acceptable form to be included in the DCO. In addition, NG requires further discussion on the impact to its apparatus and rights and compliance with relevant standards for works proposed within close proximity of its apparatus. 			
	<p>Onshore Development Area</p> <ul style="list-style-type: none"> • Area of Sizewell Halt (SK160394) included in your proposed onshore development area. This area forms an important part of our proposals, therefore, we seek the omission of this area from your project proposal to ensure that it remains available to supports the delivery of the Sizewell C Project. • EDF note the area of the Broom Covert site (SK160397) included in your proposed onshore development area. Again, this area forms an important part of our proposals; and we seek the omission of this area from your project proposals to ensure that it is available to support the delivery of the Sizewell C Project. 	EDF Nuclear Generation	4	<p>The area of Sizewell Halt (SK160394) has been removed from the onshore development area in response to consultation comments and further refinement of the project design. The onshore development area is shown on Figure 6.2 in Chapter 6 Project Description of the ES.</p> <p>The area of the Broom Covert site (SK160397) has been removed from the onshore development area in response to consultation comments at Phase 3.5 Consultation and further refinement of the project design. The onshore development area is shown on Figure 6.2 in Chapter 6 Project Description of the ES.</p>

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	<ul style="list-style-type: none"> EDF note the area of land south of Sizewell Gap road is included in your proposed onshore development area. NNB Genco SZC has an interest in this land as it is necessary to support the delivery of Sizewell C. Again, we seek the omission of this area from your project proposals to ensure that it is available to support the delivery of the Sizewell C Project. EDF note Sizewell Gap road is included within your proposed onshore development area. This road is critical in accessing the Sizewell C site. We seek confirmation that your proposals would not have any impact on the NNB Genco SZC's use of this road in the construction and operation of Sizewell C. 			<p>This area is required for the delivery of the East Anglia TWO project and is therefore included within the onshore development area and DCO order limits. The Applicant will continue to liaise with EDF Energy on this matter.</p> <p>The Applicant is committed to working with EDF Energy to develop a way forward that will not impact the construction and operation of Sizewell C, particularly with regard to land south of Sizewell Gap Road, through the construction of the East Anglia TWO project.</p>
	<p>Project Design</p> <ul style="list-style-type: none"> NGET is currently in discussions with the promoter about the proposed substation and diversions required to facilitate the Scheme. NGET is concerned that the draft DCO should include sufficient land within the red line boundary to achieve the proposed temporary and permanent diversions of the overhead lines and for the connection works. It is essential that sufficient limits of deviation are provided to allow for the scheme development and that the correct land rights are assigned to the relevant plots. 	National Grid	1	<p>The Applicant has worked with National Grid to agree a suitable onshore development area to facilitate the proposed temporary and permanent diversions of the overhead lines and for the connection works. Further details of the refinement process for the extent of the onshore development area are provided in Section 4.10 of Chapter 4 Site Selection and Assessment of Alternatives in the ES.</p>

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Environmental Impact Assessment Methodology	<p>Further Assessment</p> <ul style="list-style-type: none"> It is recognised that the “Rochdale Envelope” approach will be adopted where the detail of certain aspects will not be determined in detail but within controlled parameters to allow for flexibility. However, it is very difficult to comment on a number of aspects of the proposal which the National Trust are concerned about when important issues such as the number of wind turbines, the layout configuration, type of foundations for the turbines, dredging for cable laying have not yet been determined and further assessments need to be carried out. It is important that the public has sight of all detailed assessments in order to fully consider matters of concern. It must also be ensured the mitigation hierarchy (avoid, mitigate, compensate) is followed, and residual impacts are compensated for, and that such compensation is secured through a legal agreement. The Trust would welcome discussions with SPR on matters where it considers there would be residual effects on the seascape and the AONB. Post consent monitoring plans should also be developed which should include triggers for action and funding to deliver those actions. 	National Trust	2	<p>Since submitting the PEIR various updates to the project design have been made as detailed in Chapter 6 Project Description of the ES, and topic specific chapters and assessment have been updated in this ES (Chapters 7 – 30).</p> <p>The PEIR took the form of a draft ES and has been made available online, at public information events and local libraries for members of the public to view and provide comments. The approach to considering mitigation is presented in section 5.6.7 of Chapter 5 Environmental Impact Assessment Methodology of the ES and discussed in each technical chapter where relevant (Chapters 7-30).</p>

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	Cumulative Impacts <ul style="list-style-type: none"> Nautilus and Eurolink Interconnector Projects are at early stage of development therefore unable to provide SPR with a detailed description, proposed route and environmental information which could be used to consider cumulative impacts as part of EA2 proposal. However, National Grid Ventures will continue to engage with SPR throughout the development of our projects. 	National Grid Ventures	1	Noted, this has been taken account of in section 5.7 of Chapter 5 Environmental Impact Assessment Methodology of the ES.
	Scoping Responses Location <ul style="list-style-type: none"> NE would advise that the scoping responses in table 6.1 should be provided in an annex. 	NE	1	All consultation tables in the ES have been compiled within appendices.
Project Description	Project Description PEIR Baseline <ul style="list-style-type: none"> The Marine Management Organisation (MMO) notes that the worst case scenario and total volumes for drill arisings are inconsistent at times between chapters. In chapter 6 it is stated that the estimated drill arisings for jacket Piles was 1080m³ per pile (Section 6.5.4.1.4 paragraph 53) and 7953m³ per pile for monopiles (section 6.5.4.4.4. paragraph 102). No other estimates are given for other type of foundation in this chapter. However, in Chapter 9 table 9.2 (Impact 2) the drill arisings for the turbines (based on 60 x 300m turbines) was 47,713m³. It does not mention 	MMO	1	<p>Monopile drill arisings should be 7,952.16m³ and this has been updated in Chapter 6 Project Description of the ES. No estimates for drill arisings for other foundation types are given because it is only monopiles and pin piles that potentially require drilling.</p> <p>The 47,712.94m³ figure is based upon the assumption of 10% of 60 wind turbine foundations requiring drilling.</p> <p>Text in sections 6.5.4.1.4 and 6.5.4.4.4 in Chapter 6 Project Description of the ES have been updated for clarification.</p>

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	which foundation type this is based on, however the numbers from chapter 6 do not seem to be relevant here, as 60 monopiles at 7953m ³ is far greater than the given estimate of 47,713m ³ , and the same can be said for the jacket piles. These calculations and inconsistencies should be clarified upon and future documents amended to show the correct information.			
	<p>PEIR Methodology</p> <ul style="list-style-type: none"> Section 6.7.3.10.3 outlines the process and procedures to be applied to open cut watercourse crossings. It is stated that detailed method statements will be prepared for each crossing, but that the exact methodology would be decided by the works contractor. For this approach to be acceptable, it must be ensured that an outline structure of key principles and requirements is agreed and forms part of any permission granted. We would be particularly concerned about the Hundred River crossing (as a main river). 	Environment Agency	1	Noted. A proposed methodology for the watercourse crossing of the Hundred River is outlined in the Outline Code of Construction Practice (OCoCP) (Document Reference: 8.1).
	<p>PEIR Impacts</p> <ul style="list-style-type: none"> Sections 6.7.8.8; 6.7.10.1 & 6.7.10.2 all refer to the use of either mains foul drainage or a septic tank. In respect of any foul drainage requirements, septic tanks may not be acceptable in certain locations depending on ground conditions or if the location is close to mains sewer. Mains should be the first preference. It should also be confirmed that there is mains 	Environment Agency; National Grid	2	<p>Noted the preference for mains connections and the requirement to review mains capacity during construction and operational phases.</p> <p>Noted comment from National Grid.</p>

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	<p>capacity available to receive all flows arising during the construction and operational phases of the scheme.</p> <ul style="list-style-type: none"> NG would request that the potential impact of the proposed scheme on NGET's existing assets including any proposed diversions is considered in any subsequent reports and as part of any subsequent application. 			
	<p>PEIR Cumulative Assessment</p> <ul style="list-style-type: none"> Given the amount of electricity coming ashore from other offshore wind energy projects and the increased generation from Sizewell C, the DCO application and accompanying ES will need to address the in-combination impact on the 400 kV transmission network in the wider strategic area i.e. including the potential for reinforcement and new lines in both Norfolk and Suffolk. 	Norfolk County Council	1	<p>A new National Grid substation and National Grid overhead line realignment works (together referred to as the National Grid infrastructure) are required to connect the East Anglia TWO onshore substation to the National Grid transmission system. The National Grid substation will be located to the north of the East Anglia TWO onshore substation, and the modifications to the existing overhead lines will take place within the National Grid overhead line realignment works area. The existing overhead lines comprise of four 400kV circuits, two of which are supported by a northern pylon line and two on a southern pylon line, each running parallel to each other.</p> <p>The Applicant has reviewed those projects to be included in the cumulative impact assessment in line with the Planning Inspectorate Advice Note 13 and currently there is insufficient information regarding addition requirements to reinforce the existing network or for new overhead lines. See Chapter 5 Environmental Impact Assessment Methodology of the ES for the methodology adopted for the cumulative impact assessment screening exercise.</p>

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	<p>PEIR Calculations</p> <ul style="list-style-type: none"> Calculations in Chapter 6 and subsequent chapters should be reviewed and corrected as necessary. For example, the MMO notes the estimated drill arisings per monopile is stated as 7953m³ in section 6.5.4.4.4. paragraph 102, however in Chapter 7, table 7.3, the estimated drill arisings for the same size monopile is 7952m³. Subsequent chapters should be reviewed to ensure the correct figures are used in calculations. In Table 6.11 Monopile Dimensions, the maximum diameter of a monopile for a 300m wind turbine is identified as 15m. Although the foundation type in Chapter 9 table 9.2 (Impact 2) is not identified, if monopile then the figure is inconsistent with that in Chapter 6 as the diameter of the turbine foundations for 300m wind turbines is identified as 13m, not 15m. In the same paragraph of Chapter 9 table 9.2 (Impact 2), the total drill arising as a result of turbine foundations should be recalculated as worst case total drill arising for 53 monopiles, or jacket pin piles, will be far greater than the given estimate of 42,146m³. This figure, 42,146m³, is also referenced Chapter 7, paragraph 30, and Chapter 8, table 8.2. 	MMO	2	<p>This has been corrected to 7952.16m³ in Section 6.5.4.4.4 in Chapter 6 Project Description of the ES and table 7.3 in Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES.</p> <p>The maximum diameter for monopiles is 15m and this has been updated across chapters. The 42,146m³ figure is based upon the assumption of 10% of 53 wind turbine foundations requiring drilling. Text in Chapter 6 Project Description sections 6.5.4.1.4 and 6.5.4.4.4 in Chapter 9 Benthic Ecology of the ES Table 9.1 has been updated.</p>

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	<p>PEIR Clarification</p> <ul style="list-style-type: none"> Clarification is required regarding the details of the material processing laboratories used. Chapter 6 table 6.1 details comments from the MMO that contaminant analysis should be undertaken by a MMO dredge material testing certified laboratory, but the laboratories used have not been mentioned. Confirmation if the cables are expected to last for the operational life of the two schemes? If not, can they be replaced or repaired? Will there be no above ground infrastructure post construction? 	MMO; NE	3	<p>Section 8.4.2 of Chapter 8 Marine Water and Sediment Quality of the ES has been updated to specify that contaminant analysis was undertaken by an MMO accredited laboratory. Contaminant analysis was undertaken by SOCOTEC. Testing certificates are available upon request.</p> <p>The Applicant can confirm that the cables are expected to last for the operational life of the two schemes (with ongoing maintenance and checks). The possibility to replace or repair cables without trenches is dependent on whether the cables are installed via a ducting or direct lay method. Currently, both methods are proposed for both projects. See Section 6.7.3.7 in Chapter 6 Project Description of the ES for further detail.</p>
	<p>Cable and scour protection figures</p> <ul style="list-style-type: none"> Further evidence needs to be presented to support the figures relating to cable and scour protection. 	NE	1	<p>A reduction in the worst case assumptions for export cable protection that were presented in the PEIR has occurred in light of this comment and in reference to realistic values from the East Anglia ONE project. The reduction is from 10 to 5% requiring protection due to unsuitable ground conditions. Furthermore, analysis of geological data in the East Anglia TWO windfarm site confirmed the potential for rocky areas and so an assumption of up to 10% of inter-array and platform link cables is considered to be justified.</p> <p>Text added to each foundation type section on justification for scour protection calculations in Chapter 6 Project Description of the ES.</p>

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	<p>Project Design</p> <ul style="list-style-type: none"> No concerns about tower type (jacketed, monopile, etc) or foundation type but ask that there is a 3m clear depth of water around visible parts of the structure and suggest that identical structures are used throughout each field. Recommend avoiding use of concrete mattresses as far as possible, in order to prevent potential impacts on sediment and water quality associated with the degradation of the fronds (plastic) over time. If fronded mattresses are proposed, the potential impacts on sediment and water quality should be included in future assessments and supported using existing data/evidence available. The MMO requests clarification regarding the piling that will take place. It is currently unclear if piling will take place simultaneously or not for the installation of WTGs or other offshore platforms. This should be clarified in the Environmental Statement. If simultaneous is proposed, then underwater noise modelling for impacts to fish should be based on this scenario. Clarification is required regarding if more than one pile will be installed per 24hrs and assess Cumulative Sound Exposure Levels (SEL_{cum}) over the duration of the activity within a 24hr period as the NMFS intend in their 2018 guidance. The Applicant in the consultation for both projects have made no commitment to what port(s) will act as the load out port or where their operations and 	<p>Cruising Association; MMO; Waveney District Council; SCC/SCDC (now East Suffolk Council) National Grid Norfolk County Council</p>	15	<p>East Anglia TWO will comply with existing guidance on under keel clearance including that contained within MGN 543 as per section 14.3.3 (embedded mitigation) of Chapter 14 Shipping and Navigation of the ES.</p> <p>Supporting information on the use of plastic fronded mattresses is provided in section 8.3.2.2 of Chapter 8 Marine Water and Sediment Quality of the ES. The specification to which the plastic material is produced ensures it does not degrade within marine environments and has an extremely high tensile strength (i.e. it has to be cut, it does not break or tear under reasonable force (SPR 2019)).</p> <p>The use of fronded mattresses will be decided post-consent, as detailed in the Construction Method Statement ('Scour Protection Management and Cable Protection') secured under the requirements of the draft DCO.</p> <p>As detailed in section 6.5.15.2.1 in Chapter 6 Project Description of the ES, there will be no concurrent piling within the East Anglia TWO windfarm site for wind turbines and offshore platforms. There will also be no concurrent piling between the proposed East Anglia TWO and East Anglia ONE North windfarm projects.</p> <p>There is potential for more than one pile to be installed in a 24 hour period. The Cumulative Sound Exposure</p>

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	<p>maintenance (O&M) facilities will be located. Waveney District Council, SCC and SCDC would seek for these to be located within the NALP geography to ensure we gain maximum economic benefit and further indirect and induced employment opportunities.</p> <ul style="list-style-type: none"> Clarification is required regarding if the intention is to designate the export cable corridor as disposal site and accordingly make note of any overlapping existing sites. It should be noted that a disposal site will only be required if material is considered “waste” (brought to the surface). A disposal site is not normally required for plough dredging or jetting techniques. The current consultation does not detail the use or extent of construction or operational site floodlighting, if this is to be used then further details should be provided; the location, height, design, sensors and luminance of all site floodlighting and the mitigation measures used will be necessary to; <ul style="list-style-type: none"> a) Limit obtrusive glare to nearby residential properties, b) Minimise sky-glow. Drilling or excavation works should not be undertaken if they have the potential to disturb or adversely affect the foundations or “pillars of support” of any existing tower. These foundations always extend beyond the base area of the existing tower and foundation (“pillar of support”) 			<p>Levels (SEL_{cum}) modelling of pin piles assumed one pin pile to be installed over 199 minutes (7,210 strikes), as stated in Table 4-3 of Appendix 11.4 Underwater Noise Assessment.</p> <p>Noted regarding the port location.</p> <p>The worst case scenario is that material will be brought to the surface on board a dredger vessel and then released back into the water column as overflow from the vessel. The intention is therefore to designate both the export cable corridor and windfarm site as disposal sites. There is currently overlap with the East Anglia THREE cable corridor which is an existing designated disposal site (HU212). Discussion is also provided for closed sites NS111, TH026 and open site TH057. Please refer to paragraphs 82 and 83 in Section 8.5.1.3 of Chapter 8 Marine Water and Sediment Quality of the ES.</p> <p>Further information will be provided in the Disposal Site Characterisation Documents which will be submitted under the requirements of the draft DCO.</p> <p>No operational site floodlighting is included for the East Anglia TWO or East Anglia ONE North substation. Lighting requirements include security lighting, repair lighting and motion-sensor car-park lighting as per Section 6.7.8.14 in Chapter 6 Project Description of the ES.</p>

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	<p>drawings can be obtained using the contact details above</p> <ul style="list-style-type: none"> There are wider grid connection issues in respect of the 400kV network which runs between Norfolk and Suffolk. It is considered that as part of any the DCO application and accompanying Environmental Statement there needs to be clarification on whether there is likely to be any requirement in the wider area for either: <ul style="list-style-type: none"> (a) reinforcement of the existing 400 kV network; or (b) new overhead lines (400kV). Statutory electrical safety clearances must be maintained at all times. Any proposed buildings must not be closer than 5.3m to the lowest conductor. National Grid recommends that no permanent structures are built directly beneath overhead lines. National Grid require that no permanent / temporary structures are to be built over our cables or within the easement strip. Any such proposals should be discussed and agreed with National Grid prior to any works taking place. Ground levels above our cables must not be altered in any way. Any alterations to the depth of our cables will subsequently alter the rating of the circuit and can compromise the reliability, efficiency and safety of our electricity network and requires consultation with National Grid prior to any such changes in both level and construction being implemented. 			<p>The Applicant is working closely with National Grid Electricity Transmission both to develop the design of the National Grid infrastructure and to ensure all onshore infrastructure is sited and constructed in line with the required standards.</p> <p>The Applicant has reviewed those projects to be included in the cumulative impact assessment in line with the Planning Inspectorate Advice Note 13 and currently there is insufficient information regarding addition requirements to reinforce the existing network or for new overhead lines. See Chapter 5 Environmental Impact Assessment Methodology of the ES for the methodology adopted for the cumulative impact assessment screening exercise.</p> <p>The DCO process will enable the Local Planning Authorities to sign-off the conditions of the DCO only when satisfied. The design of substation infrastructure can evolve and change when greater certainty regarding the project is obtained through detailed design post-consent. This includes potential review by the Design Council or Shape East.</p>

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	<ul style="list-style-type: none"> The substations should be an exemplar in terms of innovative renewable infrastructure substation design. 			
	<p>Project Design Clarifications</p> <ul style="list-style-type: none"> To more fully understand how visitors would be affected it would be helpful to understand how much of the cable corridor within the AONB would be an active construction site at any one time. Will the ducting and cable be laid in sections and backfilled so that construction activities move forward, or will be whole 3km route within the AONB be excavated at the same time? The onshore components of the EA2 project will also support the East Anglia One North scheme. From a landscape perspective it is of course preferable, if the electricity for both schemes has to be brought ashore within the AONB, for this to be the case because a single construction project limits the duration and extent of construction works within the designated area. It appears, but we would like confirmation, that the undergrounded infrastructure put in place for EA2 would not have to be exposed again for any alterations and upgrading for EA One North. It would also be helpful to have confirmation that the cables are expected to last for the operational 	NE	5	<p>Cables trenches will be excavated and cables laid in within section and backfilled so that multiple sections can be in active construction at the same time. Further detail is provided in Section 6.7.3.7 in Chapter 6 Project Description of the ES.</p> <p>The excavations for the proposed East Anglia ONE North project would not require exposing the underground infrastructure put in place for the proposed East Anglia TWO project. See Section 6.7.3.7 in Chapter 6 Project Description of the ES for further detail.</p> <p>The Applicant can confirm that the cables are expected to last for the operational life of the two schemes (with ongoing maintenance and checks). The possibility to replace or repair cables without trenches is dependent on whether the cables are installed via a ducting or direct lay method. Currently, both methods are proposed for both projects. See Section 6.7.3.7 in Chapter 6 Project Description of the ES for further detail.</p>

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	<p>life of the two schemes. If that isn't the case could they be replaced or repaired without reopening the trench? This appears to be the case given that they would be contained within underground ducts through which the cables could be drawn.</p> <ul style="list-style-type: none"> "We note that the onshore construction phase will last for three to four years and would welcome clarification of whether: <ul style="list-style-type: none"> four years applies to any of the works within the AONB or whether only the construction of the substations and alterations to overhead cables outside the AONB would go beyond three years; and the time scale referred to includes both the undergrounding and full reinstatement of the cable corridor (reinstating arable and pasture land cover and replanting hedges) or just the burying and refilling of the trench and removal of fencing and other construction elements from the site. 			<p>None of the onshore construction phase will last for three to four years within the AONB. See Section 6.9 in Chapter 6 Project Description of the ES for the onshore programme. Landfall, cable Section 1 and cable Section 2 fall within the AONB.</p> <p>The Applicant can confirm that the timescales referred to include both the undergrounding and full reinstatement of the cable corridor.</p>
	<p>Alternating Current (AC)/ Direct Current (DC) usage</p> <ul style="list-style-type: none"> AC and DC should be fully explored, DC would reduce the easement (land) requirements. 	Local Community Member	1	The most efficient and economic connection for East Anglia TWO is AC. DC technology is more appropriate for projects which are further away from shore.

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	<p>Joint bays/ Link Boxes</p> <ul style="list-style-type: none"> Joint bays/ link boxes should be located in field margins only. 	Local Community Member	1	Buried jointing bays will be constructed at intervals along the onshore cable route (to allow cable pulling and jointing at a later stage). The precise location of the jointing bays will be determined during detailed design. For the purposes of a worst case assessment of impacts, each of the environmental impact assessment chapters dealing with onshore infrastructure has assumed a worst case of 19 jointing bay locations per project, approximately every 500m.
	<p>GIS / AIS National Grid Substation</p> <ul style="list-style-type: none"> The utilisation of GIS technology could allow for greater space to be made available for mitigation. Based on the current information available the Councils consider there are visual benefits in relation to the delivery of a GIS option when compared to an AIS option. SPS would expect that Gas Insulated options are advanced, which have a considerably smaller footprint (140m x 120m as opposed to the Air Insulated option at 140m x 325m) and provide a “wrapping” that is more visually palatable. Whilst the additional 3m increase in height compared to the air insulated variant must be carefully offset against the smaller footprint, on balance the Gas Insulated variant is preferable in terms of reduced bulk and a simpler silhouette. 	SCC; SCDC (now East Suffolk Council); Suffolk Preservation Society	3	The OLMP, (presented in the OLEMS (Document Reference: 8.7) submitted with this DCO application), presents a Rochdale Envelope scheme for an appropriate planting scheme that is designed to mitigate the effects of the projects. The DCO process will enable the Local Planning Authorities to sign-off the conditions of the DCO only when satisfied. The design of the Landscape Mitigation Plan can evolve and change when greater certainty regarding the project is obtained through detailed design post-consent. This includes the potential adoption of a GIS National Grid substation.

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	Maintenance of infrastructure <ul style="list-style-type: none"> Maintenance and inspection infrastructure should be kept to a minimum and located and designed to minimise any adverse impacts on the AONB. 	Suffolk Coast and Heath AONB Partnership	1	Noted. Maintenance and inspection infrastructure for the landfall is outlined in Section 6.6.3.2 in Chapter 6 Project Description of the ES; with cable route maintenance and inspection infrastructure outlined in Section 6.7.2.2 in Chapter 6 Project Description of the ES
	Disposal Site Designation <ul style="list-style-type: none"> It should be noted that new disposal site designations cannot overlap open disposal sites and that a disposal site will only be required if the material is considered a waste product; a disposal site is not normally required for plough dredging/jetting techniques. In light of this, it should be confirmed whether it remains necessary to designate the export cable corridor as a disposal site and if the boundaries of the disposal site(s) have been amended to avoid overlap with existing open sites. 	MMO	1	Noted that plough dredging / jetting techniques do not require a disposal licence. There may be a requirement for backhoe dredging (see Chapter 6 Project Description of the ES, section 6.5.10.15) in the offshore cable corridor which may require disposal of sediment and therefore it is the intention of the Applicant to seek to designate the offshore cable corridor as a disposal site. The Site Characterisation Report (Offshore Cable Corridor) (Document Reference: 8.16) sets out the request for approval to designate a shared disposal site (encompassing the East Anglia TWO northern offshore cable corridor route option and East Anglia ONE North offshore cable corridor), in the event that the East Anglia TWO northern route option is chosen resulting in both projects sharing a cable corridor.
Marine Geology, Oceanography and Physical Process	PEIR Table <ul style="list-style-type: none"> Table 7.4 “Summary of Realistic Worst Case Scenarios for Wind Turbine Foundations.” The ‘Whole Windfarm Site’ column should attempt some estimation of area. It currently just repeats text from ‘Individual Wind Turbine’ column. This seems to be an error. 	NE	1	Table 7.3 (of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES) has been updated for all type of effects with areas. Due to the nature of the effect and unsuitable metric, ‘Blockage’ has not been updated with an area.

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	PEIR Baseline <ul style="list-style-type: none"> Potential impacts have been assessed using suitable modelling studies. Data sources have been listed in Table 7.4.2, however, other data sources are missing and should be fully referenced e.g. suspended sediment concentrations. To provide a more detailed baseline, approximate regional suspended sediment concentrations can be obtained from the Cefas Suspended Sediment Climatology model. Noted in section 7.6.1.4, paragraph 197 (EA1N), that further information will be provided regarding the extent of sand wave levelling following further geophysical surveys. It is expected that subsequent documents submitted will be updated with the latest data acquired to support a thorough assessment of the works. The interpretation of the results against Action Levels and effects levels is appropriate. It would also be beneficial, although not mandatory, to interpret the levels against background levels (e.g. OSPAR background concentrations and background assessment concentrations values). 	MMO	3	<p>Changes have been made to paragraph 131 of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES and references added. An additional paragraph (132) has also been added regarding the Cefas data.</p> <p>Information regarding the extent of sand wave levelling will be provided as part of the agreed Construction Method Statement which will be a pre works requirement as secured under the conditions of the draft DML.</p> <p>Noted.</p>
	PEIR Impact <ul style="list-style-type: none"> The MMO believes the wording in Section 7.7.3 Paragraph 336 needs amending for stricter accuracy. It can be said that the predicted changes to tidal and wave regime may not be detectable and therefore be judged as 	MMO; Environment Agency; NE	27	<p>Paragraph 336 of Chapter 7 Marine Geology Oceanography and Physical Processes (now 338) has been updated accordingly.</p> <p>Chapter 6 Project Description of the ES section 6.5.10.15 and the Site Characterisation Report (Windfarm Site) (Document Reference: 8.15) and the</p>

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	<p>insignificant, however it is not appropriate to use this to justify the automatic assumption that there will be no effect. It is therefore recommended the assessment should indicate instead that there is no known mechanism for this to cause significant effect in the sediment system.</p> <ul style="list-style-type: none"> When assessing the impact of disposal, installation of cable and scour protection, the Environmental Statement (ES), and subsequent consent, should detail the impact in both volume and area. Volumes and areas of disposal should also be further broken down into types of disposal (sand, drill arisings, rock, mud, etc.) wherever possible. Considering impacts; we agree with the conclusion of 'no change' in respect of 7.6.1.8 Impact 8 (Changes to Suspended Sediment Concentrations and Coastal Morphology during construction at the Landfall). We also agree in respect of operational impacts that Impact 7 (Morphological and Sediment Transport Effects due to Cable Protection Measures for Export Cables) & Impact 8 (Morphological Effects due to Cable Protection Measures at the Export Cable Landfall) present low/negligible impact and no impact on coastal flood and erosion risk management interests, as stated in sections 7.6.2.7 & 7.6.2.8. The EA have reviewed this chapter in respect of cable landfall. The EA welcome the commitment referenced at 7.3.2.6, to use horizontal directional 			<p>Site Characterisation Report (Offshore Cable Corridor) (Document Reference: 8.16) provide detailed information on the construction activities (e.g. dredging and cable laying) which interact with the sediment, including the likely volumes affected and the fate of sediment.</p> <p>Greater detail on the anticipated volumes of disposal and anticipated nature of sediment has been provided in sections 9.3.2.4.2.3 and 9.3.2.4.2.4 of Chapter 9 Benthic Ecology of the ES and further detail provided in Chapter 6 Project Description of the ES section 6.5.10.15. The worst case assumptions have been incorporated into the assessments in sections 9.6.1.2, 9.6.1.6 and 9.6.1.5 in Chapter 9 Benthic Ecology of the ES.</p> <p>Noted.</p> <p>Noted.</p> <p>Section 10.5.4 in Chapter 10 Fish and Shellfish Ecology of the ES discusses designated sites in relation to the offshore development area, including the Marine Conservation Zone (MCZ).</p> <p>Text has been added to section 9.5.5.2 of Chapter 9 Benthic Ecology of the ES which references the assessment carried out for East Anglia THREE. There is no pathway for impact with the East Anglia TWO project.</p>

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	<p>drilling (HDD) for coastal landfall installation to negate potential impacts on flood and coastal erosion risk management interests.</p> <ul style="list-style-type: none"> There needs to be a greater consideration of the impact of development on the nearby Orford Inshore proposed MCZ (pMCZ). As a pMCZ this site is now a material consideration and although there is no overlap with the development area it should be factored into the impact assessment and a separate MCZ assessment carried out to rule out any significant indirect affects upon the interest features of the site. Include Orford Inshore pMCZ: <ul style="list-style-type: none"> Table 7.11 needs to include Orford Inshore pMCZ and should be considered further in the assessment. 7.5.9 Designated Sites - Orford Inshore pMCZ needs to be considered further in this section. Need to consider the impact of increased sedimentation on the subtidal mixed sediment feature of Orford Inshore pMCZ. Table 7.35 - Orford Inshore pMCZ should be considered here. 7.11 Para. 344 (EA2), Para. 345 (EA1N) Further consideration of the Orford Inshore pMCZ is required. Although the cable corridor does not overlap with any designated sites for sea bed features the Applicant acknowledges the cable corridor is adjacent to sand banks which are a supporting 			<p>The MCZ has been included in Table 7.11 of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES. A new paragraph (138) has been added to Section 7.5.9 of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES which considers the impact of the development on designated features of the Orford Inshore MCZ. The East Anglia THREE assessment is used to screen out further consideration on the MCZ.</p> <p>Based upon the East Anglia THREE rMCZ assessment impacts upon the site were screened out (see Section 7.5.9 of Chapter 7 Marine Geology, Oceanography and Physical Processes).</p> <p>New paragraph (138) has been added to Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES which considers the now designated Orford Inshore MCZ based on the assessment undertaken for East Anglia THREE.</p> <p>Sandbanks have been considered and paragraph 137 of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES has been updated accordingly to signpost to this assessment. These features have been considered within the assessment of effects on the 'Suffolk' Natura 2000 site. Impacts from cable installation are concluded as minor adverse to negligible significance (paragraph 221 of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES).</p>

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	<p>feature of the Outer Thames Estuary SPA. These sandbanks need to be mapped and the impact of cable installation on them needs to be considered further.</p> <ul style="list-style-type: none"> • Para. 168 (EA2 and EA1N) This value is notably less than worst case scenario for EA2, is it not possible to repeat the model based on the EA2 scenario? What is this value likely to be? • The worst case scenario of up to 10 % of the cables requires cable protection seems large. How was this estimate reached? (i.e. what is the estimate that up to 10 % of the length of cables would be unburied based on?). • For other foundation types, where the scour potential involves smaller volumes of sediment release due to scour processes, the design would, where feasible to do so, allow for local scour around the piles to minimise the scour protection footprint that is introduced on the sea bed. – The introduction of scour protection should be minimised as far as possible. • Has the potential release of bentonite into the intertidal area been considered during HDD? • 7.6.3. Para. 318 (EA2), Para. 317 (EA1N) Export cables would be left in situ, but what about cable protection? There should be a plan in place to consider removing this. 			<p>The reference to East Anglia ONE modelling was to demonstrate the principle that has been applied to the qualitative assessment. There is no intention to repeat the modelling since the effects are not envisaged to directly impact the identified receptor groups. This is now paragraph 170 in Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES.</p> <p>Worst case cable protection has been refined to 5%. This reduction was based upon experience of cable installation on East Anglia ONE. Paragraph 49 of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES has been updated accordingly.</p> <p>Noted. The Applicant is committed to minimising scour protection where possible.</p> <p>The landfall is described in Sections 7.3.2.6 and 7.3.3 of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES, the HDD pop-out location will be in water depths greater than 5m with respect to LAT and to the south of the outcrop of Coralline Crag, away from the intertidal. Any risk of intertidal break outs occurring will be minimised by adopting industry best practice during installation.</p> <p>Appropriate spill plan procedures would be implemented in order to appropriately manage any unexpected discharge into the marine environment, these will be included in the Project Environmental Management Plan (PEMP) (Marine Pollution Contingency Plan (MPCP),</p>

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				<p>secured under the requirements of the draft DCO and to be agreed post-consent.</p> <p>The PEMP will include the requirement for personnel to undergo training to ensure that MPCP requirements are understood and communicated (see embedded mitigation in section 8.3.3 of Chapter 8 Marine Water and Sediment Quality of the ES)</p> <p>It is assumed that cable protection will be left in situ. This may be revisited at decommissioning.</p>
	<p>Clarify assumptions</p> <ul style="list-style-type: none"> Due to proximity of the East Anglia ONE windfarm site to the 'non designated sand banks' receptor group and also the Galloper Offshore Windfarm site, wave height reductions of up to about 5% were observed under the largest storm events considered at these locations. These were not considered to be significant impacts by the East Anglia ONE assessment (either alone or cumulatively with Galloper). Changes under lesser magnitude events were not noticeable at the 'non designated sand banks' receptor group or the Galloper site. What is the assumption of no significant impact based upon? In areas of active sediment transport, any linear protrusion on the sea bed may interrupt bedload sediment transport processes during the operational phase of the proposed project. There is unlikely to be any significant effect on 	NE	2	<p>The threshold change in wave height for no significant effect upon the baseline wave regime was agreed at 5% by Cefas as part of the Expert Topic Group and subsequent wave modelling briefing note that was submitted in November 2017. MMO provided a response to this briefing note on the 15th November 2017 where they agreed with the approach.</p> <p>1m is considered low in relation to the height of sand waves (where present) and these features would pass over the cable protection. In other areas of sea bed, any entrapment of sediment would be limited and sediment transport would occur by ramping over the cable protection with only local and limited scale effect.</p>

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	suspended sediment processes since armoured cables or cable protection works are relatively low above the sea bed (a maximum of 1m), except in areas where the cable crosses other sub-marine infrastructure (e.g. pipelines and cables) where it may extend to a height of up to 4m. Where has the assumption that 1 m is low and will not have a significant effect on sediment transport come from? Is there a reference for this?			
	<p>PEIR Cumulative</p> <ul style="list-style-type: none"> 7.7.3 para 339 What evidence is this conclusion based on? 	NE	1	The rationale for this conclusion is set out in paragraphs 335 – 338 of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES.
	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> To mitigate the effects on marine geology, oceanography and physical processes, a minimum separation of 800m has been defined between adjacent wind turbines within each row and a minimum spacing of 1,200m has been defined between rows in order that the potential interactions between adjacent wind turbines are minimised. – What are the distances of 800 m and 1,200 m based on? Is there some research that has been done which shows that these distances allow for the continuation of natural physical 	NE	2	Paragraph 55 of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES has been updated. Minimum wind turbine separation is not considered to be mitigation but is part of the wider project design requirements.

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	processes, but positioning turbines closer together may interrupt these natural systems?			
	<p>General Assessment Comments</p> <ul style="list-style-type: none"> Concern that the Geology at Thorpeness has not be sufficiently studied. Requirement to assess the risk of destabilisation from the use of HDD under granular cliffs and present avoidance or mitigation options if a significant impact is found. The Applicant identified that the coastline's main uncertainty is in terms of longer change in coastal processes and therefore has committed to setting back the landfall transition bays to the potential 100 year erosion prediction line. It is stated the ducts would be installed with a setback distance of a minimum of 85m from the cliff top. The Councils welcome a precautionary approach to uncertainty over erosion risk in all aspects of design. The depth of HDD at landfall must take account of both shoreline variability and tolerance in vertical alignment during installation. Results of further geophysical investigations must be shared with the local Councils. 	Local Community Member; SCC; SCDC (now East Suffolk Council); National Trust; Suffolk Coast and Heath AONB Partnership	14	<p>Requirement to assess risk of destabilisation from the use of HDD has been noted.</p> <p>Construction methods such as HDD have been incorporated into the appraisal of constraints and engineering feasibility study. This feasibility study has considered destabilisation risks and has been informed by previous project experience. This is described further in the site selection process presented in ES Chapter 4 Site Selection and Assessment of Alternatives.</p> <p>The setting back of the landfall transition bays to the potential 100-year erosion prediction line has been noted.</p> <p>Depth of the HDD at landfall has been noted.</p> <p>Approach to able route option assessments to date noted.</p> <p>Method used to assess cumulative impacts on coastal processes from windfarm groups is satisfactory has been noted.</p>

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	<ul style="list-style-type: none"> The approach to cable route option assessments to date so far has been objective and robust. The method used to assess cumulative impacts on coastal processes from windfarm groups is satisfactory. Design information that will impact coastal processes is not known or not shared with the public (no. of turbines, foundations etc.) Monitoring of long-term change is difficult. Evidence needed to show that the timeframes and nature of geomorphological change have been properly assessed, evaluated and presented. Climate change should be considered for the longer-term change and how the development will interact with this. The Applicant should be required to demonstrate that their proposals will not adversely impact on the Coralline Crag or soft cliffs, recognised features of the AONB designation. 			<p>A worst case scenario of the design has been detailed and described in section 7.3 of Chapter 7 Marine Geology, Oceanography and Physical Processes - 'Scope'.</p> <p>With regards to shingle and sand movement, in the absence of significant impacts, monitoring is not required.</p> <p>Effects of the development on the coast have been assessed in detail. These assessments have been summarised in section 7.6 of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES. They are supported further by the assessment of coastal processes in Appendix 4.6 Coastal Processes and Landfall Site Selection for ES Chapter 4 Site Selection, which considers the history and current status of local sediment transport and coastal erosion along the cliffs.</p> <p>Climate change has been considered in terms of setback distance at the cliff and burial depth for cables. This will be further refined through the engineering design.</p> <p>This forms the 'Rochdale Envelope' which allows a project description to be broadly defined, within a number of agreed parameters, for the purposes of a consent application.</p>

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				<p>An early site investigation report has been appended (Appendix 4.6 Coastal Processes and Landfall Site Selection) for ES Chapter 4 Site Selection. This is a desk based assessment which carefully considers the history and status of the Coralline Crag and Sizewell cliffs. This has been factored into the selection of an optimum location for the landfall at the southern end of the offshore cable corridor at the coast. An early site investigation report has been appended (Appendix 4.6 Coastal Processes and Landfall Site Selection) for ES Chapter 4 Site Selection and Assessment of Alternatives. This is a desk based assessment which carefully considers the history and status of the Coralline Crag and Sizewell cliffs. This has been factored into the selection of an optimum location for the landfall at the southern end of the offshore cable corridor at the coast. Chapter 7 Marine Geology Oceanography and Coastal Processes of the ES further assesses the potential impact on both the Coralline Crag and Sizewell cliffs. It is likely that the HDD pop-out location will be to the south of the outcrop of Coralline Crag (see section 7.6.2.7 of Chapter 7 Marine Geology, Oceanography and Physical Processes). Hence, there will be no interruption of the circulatory sediment transport pathways between the coast and Sizewell Bank.</p>

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	<p>Coastal erosion</p> <ul style="list-style-type: none"> Impacts to cliffs and Coralline Crag. Erosion to the Thorpeness/ Sizewell Coastline. At Sizewell there has already been exposure of Gabbard and Galloper cables. At Gabbard cable there have been 'freespans' which have developed and there has been trouble with the company responsible for the repair/solution. Problems with mega currents around Ness. Seek further information regarding coastal processes associated with the cable landing point. Concerns over the potential for HDD to create vibration that may cause local destabilisation of the coastal cliffs above. During decommissioning all cabling and ducting in the nearshore area should be removed. 	Local Community Members; SCC; SCDC (now East Suffolk Council); Fisherman	11	<p>Impacts to coastal processes have been assessed within the EIA. Where significant impacts were identified, mitigation will be implemented to reduce impacts as far as possible. Cable corridor routeing for the export cable have avoided near shore geological formations and sandbanks thought to be important to local coastal processes.</p> <p>The Applicant has committed to undertaking HDD at the landfall area to avoid any interaction with the cliff, beach or intertidal areas. As such, there will be no impact on the cliffs, beach, sea defences or intertidal area, and the beach will remain open during the landfall works.</p> <p>SCC and SCDC (now East Suffolk Council) have been engaged and consulted regarding the cable landing point. Further information on the cable corridor and how coastal processes may be affected is in Appendix 4.6 Coastal Processes and Landfall Site Selection for Chapter 4 Site Selection and Assessment of Alternatives of the ES.</p>
	<p>Sea bed impacts</p> <p>Impacts on the sea bed.</p>	Local Community Member	2	<p>Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES assess impacts on the sea bed during construction, operation and decommissioning.</p>

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	Beaches Impact on the beaches.	Local Community Member	2	The Applicant has committed to undertaking HDD at the landfall area to avoid any interaction with the cliff, beach or intertidal areas. As such, there will be no impact on the cliffs, beach, sea defences or intertidal area, and the beach will remain open during the landfall works
	Cumulative Impacts <ul style="list-style-type: none"> Concern over the EA offshore wind arrays and the proposed nuclear power station at Sizewell C and two interconnectors to Belgium and the Netherlands by National Grid Ventures. Impacts on geomorphology, sediment migration and coastal processes. 	National Trust	1	<p>A cumulative assessment with other major infrastructure is provided in Section 7.7, Table 7.38 of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES. Sizewell C was scoped out of cumulative assessment. based on minimal marine works for that project (see section 17.3.3, 17.5.8 and 17.6 of Chapter 17 Infrastructure and Other Users and Section 3 of Appendix 4.6 Coastal Processes and Landfall Site Selection) and cable corridor siting south of Sizewell.</p> <p>Galloper and Greater Gabbard were scoped in and cumulatively assessed.</p> <p>The National Grid Ventures interconnectors are not on the Planning Inspectorate Register of Applications and are therefore not considered in line with Planning Inspectorate Advice Note 17 Cumulative Effects Assessment.</p>

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	Suggested Mitigation <ul style="list-style-type: none"> The landfall location is situated at a point on the coast with a very fragile cliff frontage. Therefore, it is essential that the cable ducts and the transition bays associated with the joining of the onshore and offshore cables are installed with a suitable setback distance to allow for natural coastal erosion. The proposed cable ducts from the transition bays out to sea must be of sufficient depth so that the vibration caused by the HDD drilling and work associated with their installation and with subsequent operation do not affect the fragile cliffs. Monitoring and mitigation for coastal processes should be robust, cover construction, operation and decommissioning and be secured through a legal agreement. 	Aldringham-cum-Thorpe Parish Council; National Trust	3	<p>Set back at cliff and burial of cables has been considered. This will be further refined through the engineering design. Worst case scenarios have been assumed within the assessments as defined in Section 6.3 of Chapter 6 Project Description.</p> <p>An assessment of coastal processes and considerations for landfall has been appended (Appendix 4.6 Coastal Processes and Landfall Site Selection) for ES Chapter 4 Site Selection. This is a desk based assessment which carefully considers the history and status of the Coralline Crag and coastal erosion.</p>
	Outline Management Plan <ul style="list-style-type: none"> National Trust wishes to be one of the stakeholders consulted on the Management Plans. In Section 7.3.4. that Outline Management Plans will be submitted with the DCO application and will contain key principles to provide the framework for any monitoring that may be required. It is recommended that future monitoring regarding bathymetric surveys should include pre and post- construction surveys of sufficiently wide 	National Trust; MMO	2	<p>Pre and post-construction bathymetric surveys will be conducted as part of the agreed In Principle Monitoring Plan (Document Reference: 8.13). This will be a pre-works requirement as secured under the requirements of the draft DML.</p> <p>A worst case assessment is presented in the ES and supporting DCO documents. The purpose of consent discharge conditions is to allow for best and latest available scientific information to be provided prior to the commencement of construction. It also allows for</p>

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	area, to ensure that changes to bedforms such as sand waves are within the spatial and temporal range presumed in the Environmental Impact Assessment (EIA).			finalisation of the project design. The relevant competent authorities will be consulted on these plans.
Marine Water and Sediment Quality	<p>PEIR Sampling Methodology</p> <ul style="list-style-type: none"> The MMO has noted that in section 2.3 of appendix 9.2 that the seabed sediment samples were collected with a Hamon grab, after failure with a Day grab. The use of a Hamon grab disturbs the sediment significantly during collection and is not considered appropriate for collection of contaminant samples. It is therefore recommended that further samples be taken with appropriate grab sampling techniques in areas of fine sediment and analysis be carried out for all determinants using an MMO certified laboratory. As the project involves disposal of sediments appropriate sampling and chemical analysis are essential for the MMO to agree to designation of a disposal site and that the sediments are appropriate to be disposed offshore. Clarification is requested regarding the details of the material processing laboratories used. Chapter 6 table 6.1 details comments from the MMO that contaminant analysis should be undertaken by a MMO dredge material testing certified laboratory, but the laboratories used have 	MMO	2	<p>The Day grab was planned to be the primary sampler, however, after a failed sample at the first station (B04) due to presence of coarse material, the decision was made to change to the Hamon grab. Hamon grab was maintained for the rest of the sampling campaign in order to maintain sampling consistency and comparison of results.</p> <p>Hamon grab has been successfully used in the past as part of the sampling strategy for East Anglia ONE to verify Cefas monitoring data. The results of the sampling for East Anglia TWO are consistent with other projects in the region and all samples are well within Cefas action Level 2. Risks are therefore minimal.</p> <p>It was agreed during the Expert Topic Group with MMO and Cefas on 21/06/19 that further sampling with a day grab is not required.</p> <p>Section 8.4.2 of Chapter 8 Marine Water and Sediment Quality has been updated to specify that contaminant analysis was undertaken by an MMO accredited laboratory. Contaminant analysis was undertaken by SOCOTEC. Testing certificates are available upon request.</p>

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	not been mentioned. Please clarify this issue and amend the document accordingly.			
	<p>PEIR Impacts</p> <ul style="list-style-type: none"> Horizontal Directional Drilling (HDD) has been suggested as a possible construction method and in in chapter 8, section 8.6.1.5 the water quality impacts have been acknowledged. However, the MMO requests clarification if any sediment (particle size) or contaminant samples have been taken in the proposed HDD sites. It is expected that in the full Environmental Statement sediment particle size analysis should be carried out in these areas, and if fine sediment is discovered there is the potential requirement for contaminant sampling. In Chapter 8 and 9 the realistic worst case scenario for drill arisings (Tables 8.2 and 9.2 respectively) is said to be 60 x 300m turbines with a result in 47,713m³ drill arisings being generated by the turbines alone. However, in Chapter 10 the table detailing worst case scenarios for drill arisings (Table 10.2) states that 53 x 300m turbines will result in a total of 47,713m³. It seems unlikely that 7 less wind turbines will cause an identical total of drill arisings. No other context is given relating to foundation types used, but it the opinion of the MMO that an error has been made here and requests clarification and amendment 	MMO; NE	5	<p>Details of the particle size analysis (PSA) from sampling of the offshore cable corridor is presented in section 8.5.3.1 of Chapter 8 Marine Water and Sediment Quality. None of the samples closest to the HDD site (B01, B02, B16, B15 and B25) contain any fine sands or silts (Appendix 9.2 Benthic Ecology Sampling Strategy of the ES). B01 and B15 are the closest to the HDD site and these are 1.13km and 0.6km away respectively. The particle sizes were classified using the Folk scale as either slightly gravelly sand or medium sand, suggesting that this area is of low risk for storing contaminated sediments.</p> <p>The worst case scenario is associated with 60 x 300m foundations (53 is a typo) and assumes that 10% of these foundations would require installation by drilling which is how the 47,713m² figure has been derived.</p> <p>It is acknowledged in section 8.4.3 of Chapter 8 Marine Water and Sediment Quality that the Canadian sediment quality guidelines are more stringent than Cefas Action Levels. The potential impact of the remobilisation of contaminated sediments on benthic receptors is assessed in section 9.6.1.3 of ES Chapter 9 Benthic Ecology. The potential impact was assessed as negligible. Therefore, it is not considered that there is an elevated risk.</p>

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	<p>regarding this inconsistency between chapters regarding drill arisings.</p> <ul style="list-style-type: none"> Three sample locations (C05, C07 and C16) exceed the more stringent Canadian Probable Effect Levels (PELs) for arsenic. Although the Applicant asserts that these elevated levels of arsenic are typical of the region, and do not exceed CEFAS Action Level 2, a concentration above PEL proposes “adverse effects may be expected in a wider range of organisms.” Does the Applicant consider there is an elevated risk in these areas from the adverse effects from arsenic? Although table 8.16 (not table 8.17) highlights the interactions between the impacts there is not any conclusions on what the impacts interacting with each other will be? 			Table 8.17 is presented in section 8.9 of Chapter 8 Marine Water and Sediment Quality. The worst case impacts assessed within the chapter takes these interactions into account and therefore the conclusions from the impact assessments are considered conservative and robust.
	<p>PEIR Cumulative Impact</p> <ul style="list-style-type: none"> Table 8.15 - It would be worthwhile including in the text how aggregate dredge areas been considered in the cumulative impacts assessment? Similarly, what about the interconnector cables due to make landfall within a similar area? 	NE	2	<p>There are currently no aggregate dredging areas within the offshore development area. The closest dredging area is Southwold East which lies 3km west of the windfarm site (3.4km to the south of the offshore cable corridor northern route and 3.6km to the north of the southern route). (see Figure 17.5 in Chapter 17 Infrastructure and Other Users of the ES). Consideration has therefore been given but this was not carried through to the cumulative impact assessment due to the distance from the site.</p> <p>Section 8.6.1.5 of Chapter 8 Marine Water and Sediment Quality of the ES assesses deterioration in water quality at the export cable landfall. Impacts are</p>

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				assessed as minor adverse. As shown in Figure 17.1, of Chapter 17 Infrastructure and Other Users of the ES there are no other cables associated with other projects making landfall at the proposed East Anglia TWO landfall site.
	<p>Project Design</p> <ul style="list-style-type: none"> The Applicant are considering the use of plastic fronds for cable protection. The MMO would recommend avoiding their use as far as possible, in order to prevent potential impacts on sediment and water quality associated with the degradation of the fronds (plastic) over time. If fronded mattresses are proposed, the potential impacts on sediment and water quality should be included in future assessments and supported using existing data/evidence available. Although Galloper OWF has now been fully constructed does their disposal site (TH057) pose any risk to the success of the cable installation in this area, particularly if large amounts of sediment have been deposited along the export cable route? 8.6.1.1. Para. 105 bullet point 2 (EA2 and EA1N) Is there an opportunity to organise drilling so plumes do not interact at all? 	MMO; NE	3	<p>Supporting information on the use of plastic fronded mattresses is provided in section 8.3.2.1 of Chapter 8 Marine Water and Sediment Quality.</p> <p>The specification to which the plastic material is produced ensures it does not degrade within marine environments and has an extremely high tensile strength (i.e. it has to be cut, it does not break or tear under reasonable force (SPR 2019)).</p> <p>The use of fronded mattresses will be decided post-consent, as detailed in the Construction Method Statement which will be provided prior to construction for approval by the MMO under the requirements of the draft DCO.</p> <p>Up to 1,000,000m³ of sediment may be removed in the offshore cable corridor as a result of sand wave levelling. This is the worst-case scenario (section 8.3.2 of Chapter 8 Marine Water and Sediment Quality) and this has factored in potential sediment disposed during Galloper OWF construction. Cable crossings with both Galloper and Gabbard will be required in any case, therefore sediment from Galloper disposal is considered to pose a significant risk to the success of cable installation.</p>

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				<p>No significant impacts are predicted, therefore this is not considered to be necessary. The assessment (section 7.6.1.1.1) in ES Chapter 7 Marine Geology, Oceanography and Physical Processes concluded no likely cumulative effect from plumes interacting due to plumes not persisting in the water column for a sufficiently long time.</p> <p>Modelling was undertaken conservatively with all sediment being dispersed, whereas in actual fact it is likely larger clasts will settle rapidly (section 8.6.1.2 of Chapter 8 Marine Water and Sediment Quality).</p>
	<p>Consultation of Disposal Site Characterisation Document</p> <ul style="list-style-type: none"> It is noted that a Disposal Site Characterisation document will be provided with the application. The MMO would suggest that this document could be provided to the MMO for review prior to the application. This would allow identification of any issues regarding disposal locations and volumes before the examination process and thus reduce consenting risks to the application. 	MMO	1	<p>Noted. The Disposal Site Characterisation Documents will be provided to MMO for approval on under the requirements of the draft DCO.</p>
Benthic Ecology	<p>PEIR Figures</p> <ul style="list-style-type: none"> When characterising the overall former East Anglia Zone, reference is made to the figures in Chapter 9 – Benthic Ecology – Figures. However, apart from Figure 9.17, these figures only display results from a small portion of the former East 	NE	4	<p>Additional figures have been included (Figures 9.4b – 9.12b of Chapter 9 Benthic Ecology of the ES) to provide the context of the offshore development area within the former East Anglia Zone.</p> <p>Noted and plate updated.</p>

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	<p>Anglia Zone, the area that includes the East Anglia Two development area and as such it is not possible to visualise and confirm the statements made in the text regarding the East Anglia Zone, or put the results from the East Anglia Two development into context.</p> <ul style="list-style-type: none"> Legend in Plate 9.3 is not complete. The communities present within the northern coastal section of the Outer Thames Estuary SPA (see Figure 9.12). Figure 9.12 refers to Sabellaria reef distribution, so it is not clear to which Figure this refers to and it would be beneficial to see data regarding coastal communities, which is currently lacking. 			Reference should be to Figure 9.14 of Chapter 9 Benthic Ecology of the ES – updated. Since the PEIR, Multivariate Analysis incorporating grab sample data from the offshore cable corridor has been undertaken to characterise the coastal communities. See Appendix 9.4 Benthic Statistical Analysis Report and section 9.5.2.3 of Chapter 9 Benthic Ecology of the ES.
	<p>PEIR Latin Spelling</p> <ul style="list-style-type: none"> Nemotoda should be Nematoda. 	NE	1	Nematoda noted and text updated.
	<p>PEIR Survey</p> <ul style="list-style-type: none"> NE advises that the sufficient survey effort should be undertaken to characterise the seabed pre-construction including identifying potential areas of Sabellaria spinulosa reef. Geophysical surveys have already been committed which NE welcome however additional ground truthing (e.g. DDV camera surveys) are needed to further understand if mitigation measures are fit for purpose. Even for EA1 it is proving difficult to avoid all areas of Sabellaria Spinulosa reef within the area. Therefore, the avoidance mitigation 	NE	2	<p>Clarification text has been added to section 9.3.3.2 of Chapter 9 Benthic Ecology of the ES which further details the anticipated nature of the pre-construction surveys.</p> <p>There were errors in this table. These have been corrected and the table has been simplified.</p>

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	<p>measure may not be fit for purpose especially if there is no space within the redline boundary. Rather than doing Annex I surveys to inform the application the Applicant propose: Pre-construction geophysical surveys will be undertaken to identify the potential areas of Sabellaria reef, any areas to be avoided (i.e. by micro-siting of cable routes and turbine foundations) will then be agreed with the MMO in consultation with NE and secured through the Monitoring Plan and Annex 1 Mitigation Plan. This would therefore leave MMO open to having to make significant risk based decisions post consent with limited options to minimise the impacts to an acceptable level.</p> <ul style="list-style-type: none"> Table 9.5 shows that the EA2 array sidescan sonar (SSS) survey provided complete coverage of the array and the northern cable corridor. However, there is also the cable corridor SSS survey with complete coverage of the offshore cable corridor. Does this then include the Northern and Southern cable corridor? Has the Northern cable corridor been surveyed twice (2017 and 2018)? This is not clear. Also, the number of grab samples is stated to be 65 within the North cable corridor but looking at Figure 9.1 about half of the 65 sampling stations are exclusively within the south corridor. This table needs further clarification or amendment. 			

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	<p>PEIR Baseline</p> <ul style="list-style-type: none"> Faunal data from the EA 2 offshore cable corridor grab samples have only been included in the current PEIR as number of individuals and number of species. Community data has not been included and as such there is no data on the biotopes present on the cable corridor besides the small area of the cable corridor already covered by the East Anglia Offshore Wind Zonal Environmental Appraisal (ZEA). Also, there is no further indication if these data are going to be integrated at the Environmental Statement (ES) stage. Current impact sensitivity and recoverability assessment is conducted based on the biotopes identified on the ZEA. Considering that on the cable corridor close to the coast there is an area of sediment dominated by silty sediments, biotopes identified in this area will most likely differ from those identified in the ZEA where sediments were dominated by sand and gravel. As such the sensitivity analysis and conclusions drawn from that analysis might be based on an incomplete picture and therefore need to be reassessed including the full data set. The following analyses of the infaunal communities of the former East Anglia Zone uses 654 samples; 643 from the ZEA surveys, 49 from the East Anglia THREE and former East Anglia FOUR surveys and 39 samples from the East 	NE	7	<p>As was stated in paragraph 137 of the PEIR chapter, multivariate analysis has been conducted for the ES and a report has been produced (see Appendix 9.4 Benthic Statistical Analysis Report) and the relevant information has been updated / added to sections 9.5 and 9.6 of Chapter 9 Benthic Ecology of the ES. Also, Figures 9.4a and b of Chapter 9 Benthic Ecology of the ES have now been produced which display the biotopes present throughout the offshore development area and within the context of the former East Anglia Zone respectively.</p> <p>This was an error. This has now been updated to 852 samples following the collation of the full suite of data used in the multivariate analysis.</p> <p>Location incidences in bullet points in section 9.5.2.2 of Chapter 9 Benthic Ecology of the ES have been updated following multivariate analysis.</p> <p>Table 9.12 has been deleted and Figure 9.7 has been updated following completion of the multivariate analysis. See Table 3.2 of Appendix 9.4 Benthic Statistical Analysis Report of the ES for an equivalent table to Table 9.12.</p> <p>This table has been deleted following completion of the multivariate analysis. See Table 3.2 of Appendix 9.4</p>

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	<p>Anglia ONE offshore cable corridor survey. These numbers don't add up, requires further clarity.</p> <ul style="list-style-type: none"> Inconsistencies exist between table 9.12 and text regarding occurrences of faunal groups in the EA 2 windfarm area: <ul style="list-style-type: none"> Table 9.12 Text in page 57 Group M - (27 locations); Group M - (27 locations); Group N - (1 locations); Group N - (5 locations); Group O - (1 location); Group O - (1 location); Group Q - (6 location) Group Q - (1 location). Data for faunal groups in cable corridor seen in figure 9.7 is not consistent with what is presented in table 9.12. Some groups displayed in the figure are not marked as present in the table (e.g. G, H or P). Table 9.12 Faunal group J has no number of stations, but it was observed in the Former East Anglia Zone. According to Table 9.12 SS.SSa.IFiSa should have also been considered (biotope listed within faunal group M). This is also relevant for the following sections since reference to this table is done. On the other hand, the biotope SS.SMx.CMx appears twice in the table. Fish while it is stated in paragraph 139 that many fish species (including sandeels) were recorded within the epifaunal data; these have been 			<p>Benthic Statistical Analysis Report of the ES for an equivalent table.</p> <p>Table 9.14 has been updated to include relevant information for SS.SSa.IFiSa and duplicate SS.SMx.CMx has been removed.</p> <p>Fish species were indeed removed from the multivariate analysis, the characterisation of these groups was included in error. Bullet points in section 9.5.3.1 of Chapter 9 Benthic Ecology of the ES have been updated.</p>

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	removed from this analysis, as fish are not considered part of the benthic community for the purposes of this assessment. If fish were included in the multivariate analysis it is not explained why. If only some fish species were removed than this is not clearly stated either.			
	<p>PEIR Methodology</p> <ul style="list-style-type: none"> Results from the side scan sonar survey carried out in 2018 (Bibby HydroMap 2018) show that there is no evidence of Sabellaria reef in the offshore cable corridor. Minor or relict patches of Sabellaria were found at a number of sample locations (10) (see Appendix 9.2) however nothing which constitutes a reef was identified. Ground truthing of SSS data (e.g. DDV camera) was not conducted. Grab samples would not successfully be able to confirm the presence of Sabellaria reef. As such there is little confidence based on SSS and grab samples alone that Sabellaria reef is not present in the area. However, the Applicant has adopted a precautionous approach and the presence of Sabellaria reef has not been ruled out. Further to this NE welcomes that a detailed pre-construction geophysical survey will identify any areas of Sabellaria reef which are required to be avoided in agreement with the MMO in consultation with NE and secured through the Monitoring Plan and Annex 1 Mitigation Plan. 	NE	1	Acknowledged, text in section 9.5.5.1.1 of Chapter 9 Benthic Ecology of the ES has been updated.

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	<p>PEIR Impacts</p> <ul style="list-style-type: none"> The MMO notes that decommissioning only considers impacts due to the loss of habitat (turbines), however the complete removal of the structures in relation to deep depressions left in the seabed and how long recovery of associated habitats and communities needs to be considered. This should be amended in future documents. Consideration should also be made to whether the habitat and communities will return to baseline conditions after decommissioning has taken place. Where possible evidence of such recovery should be referenced. This should be amended in future documents. The MMO has noted some inconsistencies in Chapter 9 paragraph 203 (202 and 203 for 1N) regarding animal habituation and tolerance of smothering. Paragraph 204 (203 for 1N) states that sediment deposits are likely to be 10s of centimetres to a few metres high. Under the Marine Evidence based Sensitivity Assessment (MARESA) which supersedes MarLIN, light and heavy smothering should be assessed separately. Light smothering is considered as up to 5cm and most species will be able to adapt via vertical migration. Heavy smothering is considered up to 30cm of fine materials, and most species will be unable to adapt. It is therefore recommended that in impact assessments for smothering both light 	MMO; NE	13	<p>An assessment of the potential effects of deep depressions being left in the sea bed following complete removal of structures has not been undertaken. During decommissioning, piled foundations will be cut to 1 to 2m below the sea bed and allowed to naturally backfill (see Chapter 6 Project Description of the ES). Given that these are not 'deep depressions' no further assessment has been undertaken. Any impact of cutting piles 1-2m below the sea bed is envisioned to be less than that during construction (see section 9.6.1 of Chapter 9 Benthic Ecology of the ES).</p> <p>Text in section 9.6.1.2 updated to differentiate between light and heavy smothering criteria. Table 9.13 has been updated to show sensitivities of benthic communities to heavy smothering. Assessment based on heavy smothering which represents the worst case.</p> <p>Text has been added to section 9.6.1.2 in Chapter 9 Benthic Ecology to indicate that sediment released during construction would be primarily associated with sea bed preparation for wind turbines and offshore platforms which would make up a relatively short period of the overall 27 month construction window.</p> <p>A linear fit was applied to data available for current operational wind turbine noise, as this was considered to be a method of estimating operational wind turbine noise that would lead to the highest, and thus worst case, estimation of source noise level from the larger 300m wind turbine. This resulted in an estimated source level</p>

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	<p>and heavy should be assessed and be assessed separately.</p> <ul style="list-style-type: none"> There is a lacking in temporal scale in the predicted sediment plume described in Chapter 9 paragraph 204 (203 in 1N). A plume of 10s of mg/l is predicted for up to 6hrs. Extended periods of SPM above background levels may indirectly affects the benthos (e.g. phytoplankton growth and benthic egg and larval survival). With the expected construction period lasting 27months with either the presence or absence of EA1N construction, both scenarios need to be assessed for these potential impacts. Cefas has developed monthly suspended sediment climatologies which can be accessed via the Cefas data hub. Clarification is required regarding section 9.6.2.6, paragraph 267, as it is not clear if the turbines and environmental conditions at EA1N are comparable to the previous windfarms that are being used to broadly inform the likely significance of noise. The following paragraph is noted in appendix 11.3 'The considered turbine size for (operational noise) modelling at this wind farm is larger than those for which data is available. EA2 and EA1N are also in greater water depths, and as such, estimations of a scaling factor must be conservative to minimise the risk of underestimating the noise.' This suggests that the previous wind farm may not be a suitable comparison. Similarities and differences should be made clear in the ES to demonstrate 			<p>of 164 dB SPL_{RMS}, 18 dB higher than the 6 MW wind turbine, the largest for which noise data currently exists. The alternative method of using a logarithmic fit (with an increase of 3 dB per doubling of power output) to data would lead to a source level of 151 dB SPL_{RMS}. A more extreme and unlikely 6 dB increase per doubling of power output would lead to 156 dB SPL_{RMS}. Taking into consideration the above, the method of using a linear fit estimate is considerably higher than alternatives and is a highly precautionary approach. Additional text has been added to section 9.6.2.6 of Chapter 9 Benthic Ecology for clarification.</p> <p>Text has been added to section 6.6.1 of Chapter 6 Project Description of the ES stating that the Coralline Crag will be avoided by the HDD and the export cable routeing. Figure 7.7 of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES shows areas suitable for HDD punch out, i.e. it shows how the Coralline Crag will be avoided during HDD process.</p> <p>Text on the potential impact of sediment disposal has been added to section 9.6.1.1 of Chapter 9 Benthic Ecology. Please note that the impact of deposition / disposal of dredged sediment is also considered in section 9.6.1.1 of Chapter 9 Benthic Ecology.</p> <p>Yes, the wording has been updated.</p> <p>Acknowledged, text in section 9.6.1.1.1 of Chapter 9 Benthic Ecology updated.</p>

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	<p>the turbines and environmental conditions at EA1N are comparable to previous wind farms.</p> <ul style="list-style-type: none"> The MMO has noted that Chapter 9 paragraph 198 (EA2) and section 9.6.1.1.2, para 197 (EA1N) states that the export cable corridor has been re-routed to avoid Coralline crag. However, in chapter 7 figure 7.7 Coralline Crag has been identified within the nearshore area of the export cable. This should also be acknowledged and assessed for impact on the benthic communities associated with the feature. Impacts including: increases and persistence in Suspended Particulate Matter (SPM) and smothering due to trenching around the Horizontal Directional Drilling (HDD) punch-out point and export cable installation. This should be amended for future documents. The impact of deposition / disposal of sediment from dredging has been considered as the following: sand wave levelling / pre-sweeping activities associated with the export cable would result in the removal and disposal of sediment which would result in a temporary increase in suspended sediment concentrations. The impact of disposing of dredged sediment has other implications besides a temporary increase in suspended sediment concentrations. This has been addressed only within Increased Suspended Sediment Concentrations and Associated Potential Smothering of Benthic Receptors. Disposal of sediment also has the potential to 			<p>This is a rounding error. For clarity, text in bullet points section 9.6.2.2 of Chapter 9 Benthic Ecology has been updated but the number of vessel trips left at 58 on the assumption that this would be the maximum number of trips in any particular month. However, over the course of a year, as a worst case, it has been assumed that there could be up to 687 vessel trips to the site.</p> <p>The 657 trips in paragraph 272 (new paragraph 288) was an error and has been corrected to 687.</p> <p>Text has been updated in section 9.6.2.2 of Chapter 9 Benthic Ecology to include total disturbance footprint for each maintenance activity as well as average disturbance over the anticipated frequency of occurrence.</p> <p>Acknowledged, Table 9.19 has now been updated.</p> <p>The worst case impacts assessed within the chapter take these interactions into account and therefore the impact assessments are considered conservative and robust. It is therefore not considered necessary to conduct a separate assessment of the potentially synergistic impacts.</p>

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	<p>cause habitat change if the sediment on the disposal site and the sediment disposed are not of the same type. A clearer separation of the impacts of disposal of sediment would be welcome.</p> <ul style="list-style-type: none"> • Impact 6: Permanent habitat loss resulting from seabed preparation. Shouldn't this be permanent habitat change rather than loss? • While seabed preparation for the worst case turbine, offshore platform and meteorological mast foundation option (four-legged jacket with suction caissons) and for inter-array and platform link cable installation covers a relatively large area (6,208,999m²) any direct effects such as injury or mortality to benthic individuals from project construction activities would only occur on a temporary basis and therefore direct impacts would be limited. The magnitude of effect is therefore considered to be low. It is wrong to state that mortality to benthic organisms is temporary – requires rewording. • Up to 58 anchored vessel visits per month placed temporarily on site to maintain wind turbines. This is inconsistent with what is in table 9.12 and other sections of the text: Vessels using anchors also have potential to impact on the benthos and so up to 687 trips to the site per annum for work vessels has been assessed. (58 x 12 = 696). Moreover Paragraph 272: During operation vessel activity (up to 657 trips per annum). 			

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	<ul style="list-style-type: none"> 9.6.2.2 Para. 244 (EA2) Para. 242 (EA1N) Assessment of impacts of events that are anticipated to occur every five year is done providing average impacted areas per year. This is misleading since it will not happen in that way, a bigger area will be impacted every five years. It would be preferable to see the total impacted area, stating this would happen every five years and then if needed for further calculations the average per year can be provided as well. Potential Interaction between impacts Operation: The two halves of the matrix should be mirrored images and that is not the case e.g. Increased suspended sediment x Physical disturbance is different from Physical disturbance x Increased suspended sediment. Hard to know which is the correct assessment. Interactions: Potential interactions are presented as a table of yes or no, however those categorised as yes have not been further assessed. Also regarding operations it is not clear on some cases if there is or not an interaction (see comment above). 			
	<p>Consistent use of impact assessment terminology</p> <ul style="list-style-type: none"> Table 9.13 - Recoverability has been categorised as both medium and moderate which are equivalent terms, better to use one or the other. Similarly, both terms medium and moderate have also been used to categorised sensitivity, although in tables 9.10 and 9.11 (page 45) where 	NE	1	The usage of both 'medium' and 'moderate' was to reflect the terms used in the original references from which these classifications were obtained, however it is acknowledged that for clarity and consistency it is easier if these are the same. Table 9.14 of Chapter 9 Benthic Ecology of the ES has been updated.

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	sensitivity is described the term medium has not been included, just moderate.			
	<p>PEIR Clarity on assumptions</p> <ul style="list-style-type: none"> A few of the assumptions that could be easily justified are not clarified (e.g. disturbance from jack-up vessels is assumed to be 3000 m²; vessel trips for maintenance repair 687 per year). It is therefore difficult to understand on what these assumptions are based on and if they are adequate. 	NE	1	3,000m ² per jack-up vessel operation is based the footprint of the spud-cans. Text has been added to section 9.3.2.3.5 of Chapter 9 Benthic Ecology of the ES.
	<p>PEIR Cumulative assessment</p> <ul style="list-style-type: none"> It would be useful to know which projects were scoped out for cumulative impact assessment and why. 	NE	1	As stated in section 9.7 of Chapter 9 Benthic Ecology of the ES, all projects that are not planned to be constructed at the same or similar time or which are greater than 50km from the offshore development area were screened out of the cumulative impact assessment.
	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> The potential for sand wave levelling (pre-sweeping) has been assessed as a potential strategy for cable installation to ensure the cables are installed at a depth below the seabed surface that is unlikely to require reburial throughout the life of the project. A final decision on this would be made post-consent, following acquisition of high-resolution geophysical data to inform final project design. The worst case scenario is defined from EA1 considering it is similar in extent and it is in 	NE	5	<p>Additional assessment text has been added to section 9.6.1.5 in Chapter 9 Benthic Ecology of the ES.</p> <p>Text updated in sections 9.3.3.4, 9.3.3.6, 9.3.3.8 and 9.3.3.9 to specify the plans through which the embedded mitigation commitments will be secured.</p> <p>Encouragement of species colonisation has been noted.</p> <p>Micrositing of wind turbine foundations will also be carried out. Clarification text added to section 9.6.1.1.2 of Chapter 9 Benthic Ecology of the ES.</p>

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	<p>the same area. Whilst NE supports options that reduces the likelihood of rock armouring being used, NE believe that sandwave levelling would need further consideration in the application in relation to potential impacts to supporting habitats for the Outer Thames Estuary SPA that were not considered by the EA1 project. But NE agree the size and scale of levelling could be informed by the EA1 preconstruction surveys, until detailed post construction surveys are available.</p> <ul style="list-style-type: none"> • Several commitments are included in this section, such as Sediment would not be disposed of within 50 m of known Sabellaria reef. How are these embedded mitigation measures proposed to be secured? This has been specified for marine non-native invasive species: These commitments would be secured in the Project Environmental Management Plan (PEMP), but that is the only case. • The use of anti-fouling paint might be minimised on subtidal surfaces, to encourage species colonisation on the structures. This has not been discussed in the mitigation measures section 9.3.3. • Any areas of Sabellaria reef in the offshore cable corridor identified via a detailed pre-construction geophysical survey which are required to be avoided (i.e. by micro-siting of cable routes and turbine foundations) will be agreed with the MMO in consultation with NE and secured through the Monitoring Plan and Annex 1 Mitigation Plan. NE 			

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	welcomes the approach however notes that it refers to the cable corridor only where turbines are not anticipated, should this apply to the whole development area instead? Furthermore, this geophysical survey should be ground truthed (e.g. DDV camera surveys).			
	Impacts on protected features <ul style="list-style-type: none"> Eastern IFCA support and strongly encourage the decision to use micro-siting within the identified offshore cable corridor for known areas of <i>Sabellaria spinulosa</i> reef. 	Eastern IFCA	1	Micro-siting of the offshore cable route has been noted.
	Impacts on Benthic Ecology <i>BIO1 and MPA1</i> <ul style="list-style-type: none"> Any activity that disturbs the seabed has the potential to have negative impacts on habitats and biodiversity. Aspects of offshore wind farm construction, operation and decommissioning that this community is sensitive to include temporary disturbance to and/or loss of habitat and changes in water quality. 	Eastern IFCA	2	Noted.
	Project Design <ul style="list-style-type: none"> What is the maximum cable depth of 5 m based on? 1 - 2 m is the usual quoted cable burial depth for offshore windfarms. What is the reasoning for disturbance of the sea bed down to a sediment thickness of 5 metres? 	NE	16	Maximum cable burial depth has now been reduced to 3m based on realistic experience from the under construction East Anglia ONE project.

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	<p>Further information on cable laying activities, how sea bed levelling would take place and where sediments are to be deposited should be provided pre-consent rather than post-consent. There could be habitats of conservation importance (NERC 2006) within array and along the export cable corridors which should be avoided. Therefore, for NE to be able to sufficiently assess the impacts from sandwave clearance and for it to be permitted in the DML the worst case scenario needs to be assessed including methodology, volumes, location of deposition and potential impacts. NE requires more detail on the volume and sediments to be removed.</p> <ul style="list-style-type: none"> • 'The applicant is committed to burying offshore export cables where possible (between 0.5m to 5m), therefore reducing the need for surface cable protection. A detailed offshore export cable installation study will be carried out post-consent to inform the potential for offshore export cable burial throughout the offshore cable corridor'. As mentioned previously, what is the maximum depth of 5 m based on? 1-2 m is the usual quoted maximum depth for cable burial associated with offshore windfarms. However, in such a dynamic area such as the southern north sea, a 5 m burial depth is probably needed especially in areas of sandwaves. • Where percentage areas affected have been calculated, these are based on a total windfarm site area of 255 km² and an offshore cable 			<p>The maximum depth of cable installation has been reduced from 5 to 3m following review of East Anglia ONE experience. Further detail on cable laying activities and the volume of sediment affected has been provided in Table 9.1 of Chapter 9 Benthic Ecology and in section 6.5.10.15 of Chapter 6 Project Description of the ES with further detail / assessment on the disposal of sediments provided in sections 9.6.1.5 and 9.6.1.6 of Chapter 9 Benthic Ecology. Furthermore, a Site Characterisation Report (Windfarm Site) (Document Reference: 8.15) and Site Characterisation Report (Offshore Cable Corridor) (Document Reference: 8.16) have been submitted with the DCO application which sets out the proposed disposal volumes, the disposal locations and potential impacts.</p> <p>Worst case burial depth has been refined to 3m. Paragraph 61 of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES has been updated to provide rationale for maximum 3m cable burial depth. Minimum cable burial depth is 0.5m however this may vary depending on outcome of pre commencement geophysical surveys.</p> <p>Clarification has been added to Chapter 6 Project Description of the ES.</p> <p>This was an error and has been recalculated. Chapter 9 Benthic Ecology of the ES section 9.3.2.3 and other relevant chapters.</p>

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	<p>corridor area of 123 km². The project description has no reference to an offshore cable corridor of 123 km² but only to a cable corridor maximum area of 180 km². It is explained, that it is the northern route, but there is no reference to this area in the project description chapter. The fact a smaller area is considered to calculated percentage of affected areas is more precautions, and welcome.</p> <ul style="list-style-type: none"> • Boulder clearance around wind turbine foundations – 600 boulders of up to 300 mm diameter = 180 m². The numbers do not add up 180m² /600 boulders is an area of 0.3 m² per boulder, but coincidently (or not) 0.3 m is the diameter of the boulders. 600 boulders with a diameter of 300 cm occupy an area of 42.4m². This requires further clarity. • Drill arisings are included within Increased suspended sediment. Consideration needs to be given to the possibility of drill arisings needed to be disposed of and not just as increased suspended sediment since not all drill arisings will be entering the water column. This also has implications with disposal of potential contaminated sediments. • As noted in section 9.3.2.4.2.3 it is difficult to accurately estimate the volumes of sediment likely to be affected during cable installation however it would be much less than that affected during foundation installation. Therefore, this figure has not been calculated. Just because the volumes of 			<p>Inclusion of an assessment in section 9.6.1.6 of Chapter 9 Benthic Ecology, on the potential impact of the disposal of spoil material generated from drilling.</p> <p>Worst case estimates for the volume of sediment interaction from cable installation have now been included (see section 9.3.2.4.2.4 of Chapter 9 Benthic Ecology) and the volumes have been incorporated into the relevant assessments.</p> <p>The majority of the reference 687 vessel trips involved in the maintenance of the proposed East Anglia TWO project would be from Crew Transfer Vessels (CTVs) which do not routinely anchor to the sea bed. Therefore, an assessment of these vessels anchoring has not been undertaken. It should also be noted that the potential disturbance footprint from jack-up vessels performing maintenance was already incorporated into the assessment, see Table 9.2 operational impact 2 and section 9.6.2.2 of Chapter 9 Benthic Ecology the disturbance estimates for which have sufficient redundancy to accommodate any rare occasions when a CTV would need to anchor.</p> <p>It is assumed that all cable protection would be left in-situ. Text in Table 9.2 decommissioning impact 1 of Chapter 9 Benthic Ecology and relevant text in Chapter 6 Project Description has been amended. Additionally, the worst case scenario for export cable protection has reduced from 10 to 5% of the cable requiring protection</p>

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	<p>sediment likely to be affected during cable installation are likely to be much less than during foundation does not justify the removal from the assessment.</p> <ul style="list-style-type: none"> It is difficult to estimate the area of disturbance as the size of vessel anchors varies however a worst case of 687 trips to the site by work vessels has been assessed. Some estimate should be used for the area impacted by anchors since it has been included in other ESs for other offshore windfarm projects. Also, it is a requirement from NPS EN-3: Habitat disturbance from construction vessels' extendible legs and anchor (see page 35). The removal of cable protection would be agreed with the relevant authority at the time. It has been assumed that cable protection associated with cable crossings would be left in-situ. Unless NE are mistaken, this doesn't take into account the 10% of cable protection required along the export cable lengths. And whilst it is recognised that rock armouring at cable crossings is least likely to be removed at decommissioning consideration should be given to the removal of cable protection more generally and the need to return the seabed to its pre impact state. Especially in areas that are supporting habitats for protected features. The Applicant is considering several different sizes of wind turbine between 250 and 300m blade tip height for the proposed East Anglia TWO project. To achieve the maximum 900MW 			<p>due to ground conditions which is based on East Anglia ONE experience.</p> <p>Clarification text has been added to section 9.3.2.1 of Chapter 9 Benthic Ecology of the ES. The worst case scenario is based on wind turbines with a blade tip height of between 250 and 300m, therefore the worst case is based on either 60 x 300m or 75 x 250m wind turbines. This is reflected in the worst case calculations in Table 9.2.</p>

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	installed capacity there would be between 75 (250m) and 48 (300m) turbines. The remainder of the document refers to up to 60 x 300m turbines. This requires further clarification.			
Fish and Shellfish Ecology	<p>PEIR Baseline</p> <ul style="list-style-type: none"> The MMO finds the current assessment for the characterisation of sandeel and its habitats to be inadequate. Further to the comments below, these comments should be considered and amendments made as to how sandeels are assessed in the Environmental Statement: 5.1.1. Characterisation of sandeel habitats has been based on broad scale data and publications, rather than the data available from the array and export cable corridor surveys. The limitations of using such data sets have not been factored in. This should be amended. 5.1.2 Sandeels have spatial dependency on a specific substrate, therefore paragraph 150 (154 in EA1N) in Chapter 10 is inaccurate. It is recognised that sandeels show site fidelity to areas of the seabed and do not tend to travel to spawn. Therefore Sandeels should not be included in Table 10.19. 5.1.3. The map by Jensen et al. (2011) is a broad scale map of the southern North Sea, and whilst it is an excellent tool for indicating the presence of sandeel habitats, the resolution is too low to be able to quantify habitat loss/disturbance on a site-specific basis. When Jensen et al. (2011) mapped 	MMO; NE	16	<p>Characterisation of sandeel habitat has now been undertaken based on Particle Size Analysis (PSA) data from benthic surveys undertaken in the offshore cable corridor and East Anglia TWO windfarm site. These data have been analysed to provide an indication of the suitability of the offshore development area in terms of potential for provision of habitat for sandeels (see Appendix 10.2 Fish and Shellfish Ecology Technical Appendix and Figure 10.2.3 in Chapter 10 Fish and Shellfish Ecology of the ES).</p> <p>Paragraph 150 of Chapter 10 Fish and Shellfish Ecology of the ES has now been amended to reflect the spatial dependency of Sandeels on a specific substrate. However, sandeels are still included in Table 10.18 (in Chapter 10 Fish and Shellfish Ecology of the ES) as this table presents pelagic spawning areas which is of relevance to sandeel.</p> <p>Characterisation of sandeel habitat has been undertaken based on PSA data as described above and added to the assessment (see Appendix 10.2 Fish and Shellfish Ecology Technical Appendix) and Figure 10.2.4 in Chapter 10 Fish and Shellfish Ecology of the ES.</p>

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	<p>sandeel foraging habitat in the North Sea he found that areas varied greatly in size from 1 to 4023km². This indicates that habitats may be both widespread and localised. It is recommended to focus on identifying areas of suitable substrate and conditions, rather than scale of area.</p> <ul style="list-style-type: none"> 5.1.4. In relation to Chapter 10 paragraph 264, the MMO does not find the reasoning surrounding the decision to consider the East Anglia Two area unimportant for sandeel fisheries to be sufficient. Whilst the Danish fleet may not target sandeels in the area, this could be due to geographical location compared to the location of Dogger Bank. This needs to be reassessed and amended (paragraph 267, in Section 10.6.2.1.1 in EA1N). 5.1.5. It is MMOs opinion that IBTS trawls (otter and beam) are not considered suitable survey gear to adequately sample sandeel species. In the PEIR it states this as meaning the area is of comparatively low importance in the context of the sandeel assessment area 1r. Regardless, catches of sandeel in the area can only provide information on presence, however this method does not provide information about abundance and distribution. In EA1N Paragraph 266, in Section 10.6.2.1.1, should be reviewed and updated accordingly (along with equivalent in EA2) It is recommended that survey data should be presented by gear type if possible to ensure the 			<p>Paragraph 264 has been amended to also take account of suitable sandeel habitat shown in Figure 10.2.4 in Chapter 10 Fish and Shellfish Ecology of the ES.</p> <p>Noted. The limitations of bottom trawl gear to adequately target some species, including sandeels, are recognised in Appendix 10.2 Fish and Shellfish Ecology Technical Appendix.</p> <p>The conclusion that the offshore development area supports sandeels in relatively low numbers, is supported by the results of the IBTS, but also by the distribution of sandeel fishing activity (derived from VMS data as discussed in Chapter 13 Commercial Fisheries), known sandeel fishing grounds (Jensen et al 2011) and the fact that the offshore development area does not overlap with high intensity sandeel spawning and/or nursery grounds (Ellis et al 2010).</p> <p>The location of high intensity spawning / nursery grounds, the distribution of sandeel fishing grounds and fishing activity, as well as data from the IBTS, all suggest that within Sandeel Assessment Area 1r, key sandeel areas are located north of the offshore development area, particularly around the Dogger Bank.</p> <p>Survey data have been presented by gear type in Section 10.2.1.2 in Appendix 10.2 Fish and Shellfish Ecology Technical Appendix of the ES.</p> <p>Further information regarding the assessment of commercial importance has been included within section</p>

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	<p>assessment is based upon appropriate gear to the species concerned (e.g. trawling is not considered an appropriate means for characterisation of edible crab/lobster).</p> <ul style="list-style-type: none"> The MMO notes that there is some inconsistency in the Technical Appendix with regard to how commercial importance has been determined. Appendix 10.1 (sections 10.1.7.1 and 2) states that the edible crab has landing values between 2012 and 2016, however also states that the lobster had significant landing values and is commercially important in the same area. However, the landing contributions of lobster are lower than that of the edible crab. Further context and clarification as to the methods used to determine commercial importance has been determined. In relation to the above comment, there is a similar inconsistency regarding brown shrimp. In Appendix 10.1 Section 10.1.7.3 states that brown shrimp are not considered commercially important, however the landings information shows that brown shrimp contribute 6.88% which is 11 times more than lobster. Again, clarification on the methods used to determine commercial importance should be provided. Recent research suggests that bass spawning grounds may be moving further north (EEA, 2016), and a number of local fishermen have suggested that bass may be spawning around the Orford Inshore pMCZ. Spawning in bass is 			<p>10.2.1.6 of Appendix 10.2 Fish and Shellfish Ecology Technical Appendix of the ES. With regards to the commercial importance of lobster this was an error and has been amended.</p> <p>Further information regarding the assessment of commercial importance has been included within section 10.2.1.6 of Appendix 10.2 Fish and Shellfish Ecology Technical Appendix. With regards to the commercial importance of Brown Shrimp, this was an error and Section 10.2.7.3. of Appendix 10.2 has been amended.</p> <p>Comment regarding the northwards movement of bass breeding grounds noted, this is reflected in section 10.2.2.6 in Appendix 10.2 Fish and Shellfish Ecology Technical Appendix which discusses seabass habitat in relation to the offshore development area. Historic seabass areas with respect to the offshore development area are presented in Figure 10.10. and seabass spawning ground in relation to the worst case Temporary Threshold Shift (TTS) impact range for pin pile installation are presented in Figure 10.43. Potential impacts on seabass are considered throughout the impact assessment in section 10.6.</p> <p>Comment regarding Smelt - noted, Section 10.5.1 of Chapter 10 Fish and Shellfish Ecology has been updated to reflect this.</p>

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	<p>demersal, and therefore should be considered as part of the fisheries chapter, as well as any potential nursery grounds that may be impacted by the works.</p> <ul style="list-style-type: none"> 'Smelt <i>Osmerus eperlanus</i> has been observed to shoal in estuaries including the lower tidal reaches of the Waveney and Yare (Colclough and Coates 2013)' - Smelt are also known to spawn and shoal in the Alde-Ore Estuary. 			
	<p>PEIR Methodology</p> <ul style="list-style-type: none"> The MMO realises that given to the best method of surveying sandeel distribution and population can take several years, is expensive and can be highly disruptive for the sandeel population, it is instead recommended that the EIA characterise sandeel habitat by following the method described in Marine Space (2013) which uses broad scale sediment data and site-specific PSA data. The data collected in the Particle Size Analysis (PSA) surveys should be used to inform the characterisation of sandeel habitat and provide a more robust assessment of impacts in relation to disturbance and loss of sandeel habitat. The MMO recommends that, relating to the above, it would be an idea for the locations of grab samples used for PSA data to be presented in mapped form for the array and export cable corridor to allow the reader to assess the adequacy of sample area covered. 	MMO	8	<p>Noted. Characterisation of sandeel habitat has been undertaken based on PSA data as described above and added to the assessment (see Appendix 10.2 Fish and Shellfish Ecology Technical Appendix of the ES) and Figure 10.2.4.</p> <p>Noted. Characterisation of sandeel habitat has been undertaken based on PSA data as described above and added to the assessment in Chapter 10 Fish and Shellfish Ecology of the ES (see Appendix 10.2 Fish and Shellfish Ecology Technical Appendix of the ES) and Figure 10.2.4.</p> <p>Given the sandy nature of the sediment across the offshore development area, preferred and marginal sandeel habitat has been identified across the majority of the offshore development area, with unsuitable areas identified at discrete locations along the offshore cable corridor (Appendix 10.1, Figure 10.2.4 in Chapter 10, Fish and Shellfish Ecology of the ES).</p>

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	<ul style="list-style-type: none"> 5.4. The MMO notes that given new evidence that has come to light, the use of a fleeing animal model for fish is not suitable in assessing impacts. It is therefore recommended that a stationary receptor model should be used instead in the impact assessments. Reasons for this are highlighted below: 5.4.1. Observed reactions to loud noise and vibrations include: schooling more closely; moving to the bottom of the water column; swimming away and burying in substrate (Popper et al, 2014). This however, is not the same as fleeing which would require a fish to flee directly away from the source over the distance shown in the modelling. Currently no known scientific evidence to support this assumption. 5.4.2. An assumed swim speed of 1.5ms⁻¹ is not unrealistic, but it is over simplifying and it overlooks factors such as fish size, mobility, biological drivers and philopatric (stays in one place or returns to the same place) behaviour. These factors may cause an animal to remain/return to the area of impact. This is particularly relevant to herring, as they are benthic spawners which are specific to location due to its substrate needs. 5.4.3. Eggs and larvae have little to no mobility, which makes them vulnerable to barotrauma and developmental effects. Therefore, they should also be assessed and modelled as a stationary receptor, as per the Popper et al. (2014) 			<p>It should be noted that the habitat classification on which the above analysis is based (Marine Space 2013) relies on sediment composition only rather than evidence of sandeel usage of the area. Therefore the presence of suitable sediment does not necessarily imply that sandeels are significantly abundant in a particular area.</p> <p>Noted, mapped locations of grab samples are presented in Figure 10.2.2 in Appendix 10.2 Fish and Shellfish Ecology Technical Appendix of the ES.</p> <p>Additional noise modelling has been undertaken taking a stationary animal approach. This is presented in Appendix 10.3 Stationary Modelling Assessment and also Appendix 11.4 Underwater Noise Assessment of the ES.</p> <p>It should be noted that the stationary animal model assumes that, when exposed to any noise from piling, the fish do not react in any way to reduce their exposure to noise, which will remain at the highest level modelled in the water column. It is considered unrealistic to assume that, whether the fish reacts specifically to the noise or not, it would remain at the position of highest noise level for the hours of piling. The outcomes of the modelling considering a stationary animal scenario therefore represent a highly conservative worst case. Eggs and Larvae have been included in Table 10.19 in Chapter 10 Fish and Shellfish Ecology of the ES.</p>

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	<p>guidelines. Table 10.23 should also include the values for eggs and larvae as a receptor group.</p> <ul style="list-style-type: none"> 5.4.4. Swimming speed, rather than fleeing speed was used in the assessments in Hirata K, 1999. This is not empirical evidence that fish will flee from the source. Further to the above comments (ID 32), If the fleeing was assumed correctly, the predicted Temporary Threshold Shift (TTS) impact ranges for fish are 27km for monopoles and 29km for pin piles, this is a concern as the herring spawning grounds are located only 4.4km to the south towards the English Channel (Chapter 10 paragraph 346) and Chapter 10 paragraph 205 acknowledges that the impact ranges associated with the potential TTS onset have the potential to overlap with the herring spawning grounds to the southeast. It is further stated on page 13 of Appendix 11.3 that “basing the assessment on a stationary (zero flee speed) receptor is likely to greatly overestimate the potential risk to fish species, especially when considering the precautionary nature of the parameters already built into the cumulative exposure model’. However, the MMO believes that basing the assessment on a fleeing receptor is likely to underestimate the potential risk to fish species. 			<p>As discussed in section 10.6.1.4.5.1 in Chapter 10 Fish and Shellfish Ecology of the ES impact criteria for potential mortality / potential mortal injury in eggs and larvae are similar to those described for fish species with a swim bladder not involved in hearing (210 dB SELcum or >207 dB SPLpeak), the modelled impact ranges for this category have been used to provide an indication of the potential impacts on fish eggs and larvae.</p> <p>Additional noise modelling has been undertaken taking a stationary animal approach. This is presented in Appendix 11.4 Underwater Noise Assessment and summarised in section 10.6.1.4 in Chapter 10 Fish and Shellfish Ecology of the ES.</p> <p>It should be noted that the stationary animal model assumes that, when exposed to any noise from piling, the fish do not react in any way to reduce their exposure to noise, which will remain at the highest level modelled in the water column. It is considered unrealistic to assume that, whether the fish reacts specifically to the noise or not, it would remain at the position of highest noise level for the hours of piling. The outcomes of the modelling considering a stationary animal scenario therefore represent a highly conservative worst case.</p> <p>Eggs and Larvae have been included in Table 10.19 in the chapter. As discussed in section 10.6.1.4.5.1, impact</p>

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				criteria for potential mortality / potential mortal injury in eggs and larvae are similar to those described for fish species with a swim bladder not involved in hearing (210 dB SELcum or >207 dB SPLpeak), the modelled impact ranges for this category have been used to provide an indication of the potential impacts on fish eggs and larvae.
	<p>PEIR Impacts</p> <ul style="list-style-type: none"> The MMO notes that usually it is known that monopoles result in greatest spatial impact range for noise and vibration. Therefore it would normally be noise contours for monopoles, based on a stationary receptor that should be present in map form, as per those plotted for pin piles in (Figure 10.34-10.44). Please could you confirm that the impact ranges for pin piles are greater than the impact ranges for monopoles and provide clarification as to why? Noise and vibration on the nearby Downs Herring spawning grounds (ID 35) - MMO is of the opinion that the applicant should present 10 year IHLS data (2008-2018) in the form of a heat map which should be overlaid with the mapped noise contours for monopiles based on a stationary receptor. This will provide a better understanding of the potential extent of noise penetrating into the Down spawning grounds, making a more robust 	MMO; NE	13	<p>As discussed in section 2.1.1 of Appendix 11.4 Underwater Noise Assessment of the ES, the noise modelling has been updated to include a stationary animal model as presented in Appendix 10.3 Stationary Modelling Assessment of the ES. As shown in Figures 10.34 to 10.45 and in Table 10.22 in Chapter 10 Fish and Shellfish Ecology of the ES, the pin pile impact ranges are larger for fleeing animals due to the strike rate used (40 strikes per minute see Table 4.3 in Appendix 11.4 Underwater Noise Assessment, compared to 30 strikes per minute for monopiles). The ranges calculated for fleeing animal are highly dependent on the noise received when it is closer to the pile; a faster strike rate means it experiences a higher noise dose when the receptor is close to the pile and the noise levels are higher.</p> <p>The stationary animal results (see Appendix 10.3 Stationary Modelling Assessment and Figure 10.3.1 to 10.3.12 of Chapter 10 Fish and Shellfish Ecology of the</p>

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	<p>assessment. This should be considered and added to the Environmental Statement.</p> <ul style="list-style-type: none"> The MMO does not agree that Fish with Swim Bladder Involved in Hearing presented in Chapter 10 table 10.31 should be considered low value/sensitivity for the impacts of underwater noise during piling. Fish which hear like this are considered most acoustically sensitive and are susceptible to barotrauma (acknowledged in point 160 of EA2 Ch.10 and 164 of EA1N). Request further clarification on why herring (a fish with a swim bladder involved with hearing) has been assigned a “medium” sensitivity for the impact of physical disturbance/temp loss of seabed habitat, spawning and nursery grounds, but “low” for noise. This should be corrected, and the residual impacts amended. The MMO does not agree with the conclusion that “based on the known spawning grounds of herring, there is low potential for the underwater noise associated with the construction of East Anglia TWO to impact on the herring during spawning, and therefore there is little potential for cumulative impact on herring spawning with other projects.” (Chapter 10 paragraph 346). Figure 10.39 shows there is a partial overlap of the 186bD (SELcum) TTS contour with the spawning ground (based on pin piles at 2400kJ hammer energy). It is therefore recommended by the MMO that the potential impacts on spawning herring should be further explored, and the assessment 			<p>ES) are larger for monopiles as a higher number of strikes were used (8850 strikes for monopiles (Table 4.2 in Appendix 11.4 Underwater Noise Assessment) compared to 6760 for pin piles). As the stationary animal modelling assumes that the receptor stays in the same place throughout piling, the strike rate is not important, and the number of strikes dictates the differences in impact ranges. close to the pile and the noise levels are higher.</p> <p>10 year IHLS has been mapped against noise contours from the stationary animal scenario for pin piles (as described above these result in the greatest spatial impact range) and can be seen in Figure 10.45 in Chapter 10 Fish and Shellfish Ecology of the ES. It should be noted that the peak larval abundance associated with the Downs Stock is further south from the East Anglia TWO windfarm site, towards the English Channel.</p> <p>The sensitivity of Fish with Swim Bladder Involved in Hearing has been amended in section 10.6.1.4.and in Table 10.30 in Chapter 10 Fish and Shellfish Ecology of the ES.</p> <p>The sensitivity of Herring in Table 10.30 of Chapter 10 Fish and Shellfish Ecology of the ES is assigned as ‘medium’ for both underwater noise and physical disturbance and temporary loss of seabed habitat, spawning or nursery grounds during intrusive works.</p>

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	<p>should be based on a stationary receptor. It is also worth noting that the spawning ground may be subject to other noise and non-noise pressures, e.g. shipping, so it is not just limited to other 'projects' as such.</p> <ul style="list-style-type: none"> It is recommended that the received levels of the single strike sound exposure level at the spawning grounds are modelled and presented in addition to enable a more thorough assessment of the risk of potential impact. Previous comments on herring, noise modelling and sandeels need to be addressed prior to the cumulative and inter-related impact assessments being revisited and updated. Inadvertent removal of shellfish should be considered in regards to the potential use of a suction dredger during ground preparation. This may impact local recruitment/stock levels and therefore should be present within the Environmental Statement (ES). It is recommended that Scallops (<i>Pecten maximus</i> and <i>Aequipecten opercularis</i>) are included in the assessment in section 10.5.6, table 10.17. This is due to its increased commercial importance. This should be present in the Environmental Statement (ES). Further consideration needs to be given to the impact of sandwave clearance, cable installation and protection on the supporting habitat sandbank features for the Outer Thames Estuary Special Protection Area with respect to the fish prey 			<p>Additional noise modelling has been undertaken taking a stationary animal approach. This is presented in Appendix 11.4 Underwater Noise Assessment and summarised in Appendix 10.3 Stationary Modelling Assessment of the ES.</p> <p>The National Oceanic and Atmospheric Administration (NOAA) criteria recommend thresholds based on the Peak Sound Pressure Level (SPL_{peak}) and the SEL_{cum}, not the Single Strike Sound Exposure Levels (SEL_{ss}) as presented in Appendix 11.4 Underwater Noise Assessment Tables 6.4 and 6.5.</p> <p>Both the cumulative and inter-relationships sections have been updated reflecting any changes to project alone impacts in section 10.6 in Chapter 10 Fish and Shellfish Ecology of the ES.</p> <p>Physical disturbance and temporary loss of habitat during construction is assessed in section 10.6.1.1 in Chapter 10 Fish and Shellfish Ecology of the ES, this includes any machinery which may be used for ground preparation works (including suction dredgers). Potential impacts on shellfish discussed in section 10.6.1.1.1 in Chapter 10 Fish and Shellfish Ecology of the ES.</p> <p>Scallops have been included in Table 10.16 in Chapter 10 Fish and Shellfish Ecology of the ES and in section</p>

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	<p>populations of red throated diver and common tern.</p> <ul style="list-style-type: none"> • 'Laboratory studies have established that herring eggs are tolerant to elevated SSCs as high as 300mg/l and can tolerate short term exposure at levels up to 500mg/l (Kjørboe et al. 1981). These studies concluded that herring eggs suffered no adverse effects from suspended sediment concentrations in excess of the maximum levels expected from mining, dredging and similar operations. Herring eggs have been recorded to successfully hatch at SSCs up to 7000mg/l (Messieh et al. 1981)'. – This reference is very old (nearly 40 years). Is there any more recent evidence to show herring tolerance to elevated SSCs. Also what does the Kiorboe et al. paper define as 'short-term' exposure? (This paper has been missed off the references list, can it please be added)? • The monitoring of lesser sandeel behavioural reactions to seismic surveys has shown behavioural reactions to noise source levels of 210 dB at 1 µPa (and therefore similar to piling), but with no increase in mortality or injurious effects at this level. Normal behaviour was seen to resume following the survey (Hassel et al. 2004). The results of this study indicates that the effects of such noise levels are likely to be short term, localised and constrained to behavioural level impacts only; with no long-term effects likely. – This study was over a 2.5 day time period, piling 			<p>10.1.7.5 of Appendix 10.2 Fish and Shellfish Ecology Technical Appendix of the ES.</p> <p>This is discussed in section 10.5.4 of Chapter 10 and also in Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES. Sandbanks have been considered and paragraph 137 of Chapter 10 has been updated accordingly to signpost to this assessment. These features have been considered within the assessment of effects on the 'Suffolk' Natura 2000 site. Impacts from cable installation are concluded as minor adverse to negligible significance (paragraph 221 chapter 10).</p> <p>An extensive literature review has been conducted which has not found any new studies with regards to effects of suspended sediment concentrations (SSCs) on herring eggs. Best practice guidance will be followed at the time of construction which will account for any new research which may have been conducted. Kiorbie et al (1981) exposed the eggs to silt (at day 2, 4 and 6 after fertilisation) kept in suspensions for 2 hours and then allowed to settle. This reference has now been added to the list.</p> <p>An extensive literature review has been conducted which has not found any studies to date which specifically look at impact from piling or seismic surveys over a comparable time period from piling. Carroll et al (2017) summarise and review existing studies and whilst</p>

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	at the site will last for a lot longer than this. Has any work been done that looks at impact of noise over a more comparable time frame?			research with regards to pile driving in freshwater environments has been conducted, Carroll et al (2017) warn that extrapolation of these findings other environments (i.e. marine) requires caution. Best practice guidance will be followed at the time of piling which will account for any new research which may have been conducted.
	Consistency in impact assessment criteria <ul style="list-style-type: none"> ‘Furthermore, crab and lobster are considered to be tolerant to increased SSCs so have a low sensitivity’ – This contradicts paragraph 140 which gives a medium sensitivity to increased SSCs. 	NE	1	Noted, this has been amended to medium and Table 10.31 (Chapter 10 Fish and Shellfish Ecology of the ES) has been updated.
	PEIR Cumulative Assessment <ul style="list-style-type: none"> It is the MMOs opinion that the cumulative impact assessment should acknowledge that the broad areas of the Southern North Sea are considered to be sandeel habitat, and many areas are already impacted by anthropogenic activities and that many areas may not provide suitable habitat due to physical parameters such as substrate or water depth. 	MMO	1	Section 10.7.1 in Chapter 10 Fish and Shellfish Ecology of the ES has been updated.
	PEIR Mitigation <ul style="list-style-type: none"> Due to the uncertainty caused by the use of fleeing model and the proximity to an important 	MMO	3	As discussed in section 10.6.1.4.5.2 of Chapter 10 Fish and Shellfish Ecology of the ES, whilst the East Anglia TWO windfarm site is 4.4km from the herring spawning ground (Downs Stock) data from the IHLS shows that

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	<p>spawning ground. The MMO considers that mitigation in the form of a piling restriction during the herring spawning period may be justified.</p> <ul style="list-style-type: none"> • Might be appropriate to consider additional mitigation, such as seasonal piling restrictions to avoid the spawning months (November-January inclusive), but the MMO believe a decision surrounding this potential mitigation should not be made until the appropriate revised model can be reviewed. • The issues surrounding the sandeel habitat should also be resolved before mitigation measures surrounding this area can be agreed. It should also be noted that sandeel is a significant prey animal and that this may have implications for acceptability of impact on other receptors. 			<p>the main important area for herring spawning is located further to the south towards the English Channel (Figure 10.45). Furthermore, it is unlikely that maximum hammer energies would reach 100% and therefore the area of overlap of piling impact with the Downs Stock would be considerably smaller than 7.49%, as presented in Chapter 10 Fish and Shellfish Ecology of the ES.</p> <p>Additional noise modelling has been undertaken taking a stationary animal approach. This is presented in Appendix 11.4 Underwater Noise Assessment and summarised in section 10.6.1.4 3 in Chapter 10 Fish and Shellfish and Ecology of the ES. Potential mitigation measures with regards to piling are discussed in section 10.3.3 in Chapter 10 Fish and Shellfish and Ecology of the ES.</p> <p>(Regarding solving Sandeel habitat issues before agreeing mitigation measures) Noted, PSA data from benthic surveys undertaken in the offshore cable corridor and the East Anglia TWO windfarm site have been analysed to provide an indication of the suitability of the offshore development area in terms of potential for provision of habitat for sandeels (see Figure 10.2.4 in Appendix 10.2 Fish and Shellfish Ecology Technical Appendix of the ES).</p>
	Project Design	NE	1	It should be noted the minimum burial depth is 1m, which is based on current best practice, the Applicants experience (through their parent company SPR) from

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	<ul style="list-style-type: none"> 'For the purposes of impact assessment it is appropriate to adopt a worst case approach. However, it is of note that EN-3 guidance (paragraphs 2.6.75 and 2.6.76) states that "EMF during operation may be mitigated by use of armoured cable for interarray and export cables which should be buried at a sufficient depth. Some research has shown that where cables are buried at depths greater than 1.5m below the seabed impacts are likely to be negligible (CMACS, 2004)" Therefore, once installed, operational EMF impacts are unlikely to be of sufficient range or strength to create a barrier to fish movement'. – Based on this statement NE advise that the minimum burial depth for the development be 1.5 metres, not 0.5 m. 			the East Anglia ONE project (which has achieved burial depths of 0.5-1m along most of the cable length), and engineering limitations based on the department for Business Enterprise and Regulatory Reform review of cabling techniques and environmental effects applicable to the offshore windfarm industry report. (BERR 2008).
	<p>Underwater Noise and Vibration</p> <ul style="list-style-type: none"> Noise and vibration impact on fish. Fish exposed to piling noise are more likely to move to the bottom of the water column – this should be changed to reflect the true nature of fish behaviours. 	Local Community Member	2	The potential impact of operational underwater noise is discussed in section 10.6.2.4 of Chapter 10 Fish and Shellfish Ecology of the ES. The assessment concludes a minor adverse impact to fish and shellfish as a result of noise and therefore no additional mitigation has been proposed.
	<p>Habitat disturbance/loss</p> <ul style="list-style-type: none"> Eastern IFCA recommends that the MMO considers the value of undertaking a regional study to examine potential overall impacts of offshore activities in the Southern North Sea. 	Eastern IFCA	1	Consideration has been given in this assessment to fish species with known spawning and nurse grounds in areas relevant to the project (Table 10.10 and Table 10.12 in Chapter 10 Fish and Shellfish Ecology of the ES).

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				Fish species which are of importance as prey to marine mammals, including herring, sole and sandeels have been considered in the impact assessment within Chapter 10 Fish and Shellfish Ecology of the ES (Table 10.16). Potential impacts of the project on marine mammals are discussed in Chapter 11 Marine Mammals of the ES.
	<p>Impacts of Electromagnetic Fields (EMF)</p> <ul style="list-style-type: none"> Eastern IFCA holds concerns about the proliferation of marine electricity cables off the East Anglian coast and the potential – but very poorly understood – impacts of electromagnetic fields on marine life. There are appreciable gaps in the scientific literature as to the potential effects of EMF emissions from subsea cables on marine fauna. As such, there are uncertainties in the Applicant's ability for determining the level of impact on fish and shellfish ecology. 	Eastern IFCA	2	<p>The assessment of the potential impact of electromagnetic fields (EMFs) on fish and shellfish species is based on the worst case scenario identified for the project (Table 10.2 in Chapter 10 Fish and Shellfish Ecology of the ES) and taking account of best available information.</p> <p>In the context of the assessment of EMFs it is important to note that from the results of post-consent monitoring conducted to date, there is no evidence to suggest that EMFs pose a significant threat to elasmobranchs at the site or population level, and little uncertainty remains (MMO 2014b) (section 10.6.2.6.1 in Chapter 10 Fish and Shellfish Ecology of the ES).</p> <p>Consideration has been given in the cumulative assessment to the potential impact of EMFs associated with the project and other developments in the wider area on sensitive receptors (section 10.7 in Chapter 10 Fish and Shellfish Ecology of the ES).</p> <p>As described in Table 10.2 in Chapter 10 Fish and Shellfish Ecology of the ES, cables will be buried where</p>

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				possible to a minimum depth of 0.5m and protected where cable burial is not feasible.
	<p>Cumulative Impacts</p> <ul style="list-style-type: none"> Concerns about the cumulative impacts on seabed habitats from the planned offshore activities in the Southern North Sea, particularly in relation to sandeels as they are an important prey species for Harbour porpoise. All cumulative effects associated with the combined impact of all cited projects should be considered. This is particularly important in the inshore waters of the Southern North Sea, which contains extensive development areas for offshore wind farm development and aggregate extraction. 	Eastern IFCA	4	<p>Consideration has been given in the cumulative assessment to the potential for other projects and activities in the Southern North to result in cumulative impacts on fish and shellfish receptors, including sandeels (section 10.7, Chapter 10 Fish and Shellfish Ecology of the ES).</p> <p>In addition, PSA data from benthic surveys undertaken in the offshore cable corridor and the East Anglia TWO windfarm site have been analysed to provide an indication of the suitability of the offshore development area in terms of potential for provision of habitat for sandeels (see Appendix 10.2 Fish and Shellfish Ecology Technical Appendix of the ES).</p> <p>Consideration has been given in the cumulative assessment to the potential for other projects and activities in the Southern North to result in cumulative impacts on fish and shellfish receptors (Section 10.7, Chapter 10 Fish and Shellfish Ecology of the ES).</p>
Marine Mammals	<p>PEIR Baseline</p> <ul style="list-style-type: none"> Clarification is required regarding Table 6.12 (Appendix 11.3). It summaries the estimated unweighted source levels for the different construction noise sources considered which 	MMO	2	Subacoustech have used their own internal datasets to estimate the unweighted source levels within the underwater noise modelling (Appendix 11.4 Underwater Noise Assessment of the ES), but the data within this are not formally published, and so cannot be directly

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	<p>appeared based on various data sets but none are referenced. This should be amended.</p> <ul style="list-style-type: none"> Minor error regarding table 11.2 of Chapter 11. It is noted as stating the worst case parameters for marine mammal receptors for UXOs should be (the type and size) up to 700g. This should be 700kg. Please amend this. 			<p>referenced. This data is included due to the lack of available published data and the limited nature of that which is available.</p> <p>Error in table 11.2 of Chapter 11 - noted and updated.</p>
	<p>PEIR Data</p> <ul style="list-style-type: none"> As SCANS surveys are only one seasonal snapshot in time, they are not appropriate for density estimates. Other datasets used to provide a baseline are not recent, are ad-hoc data or are not dedicated marine mammal surveys. 	Whale and Dolphin Conservation (WDC)	2	<p>Acknowledged. The assessments for harbour porpoise have used the East Anglia TWO site specific density estimate, as derived from the site specific surveys (see Appendix 11.2 Marine Mammal Information and Survey Report of the ES for more information on how the site specific density was derived), to assess impacts, as well as the density estimate as reported by the SCANS-III survey (Hammond et al. 2017).</p> <p>Potential impacts have been based on the highest site specific survey density estimates and the SCANS-III survey density estimate throughout the assessment, as a precautionary approach to assessing impacts. All currently publicly available data has been referred to including surveys have been undertaken / currently underway at other offshore wind farm sites, for example, Norfolk Vanguard and Norfolk Boreas.</p>
	<p>PEIR Methodology</p> <ul style="list-style-type: none"> MMO agreed with the approach taken to proposed mitigation i.e. through Site Integrity Plan and stated that they will be working on potential management measures. Project team agreed to 	Marine Mammals Expert Topic Group (TWT, NE and MMO); Eastern IFCA,	12	<p>Noted regarding approach to proposed mitigation.</p> <p>Assessments were conducted based on the current Statutory Nature Conservation Body (SNCB) advice which states that effects within the Southern North Sea (SNS) SAC (Special Area of Conservation) should be</p>

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	<p>review proposals and discuss further where relevant.</p> <ul style="list-style-type: none"> Concern over evidence base for advice given by SNCBs on the advised displacement of harbour porpoise. WDC agrees that high definition aerial surveys are suitable for surveying for marine mammals, and are pleased to see that the methodology used is suitable for collecting marine mammal data. However, only a buffer of 4 km around EA2 and EA1N was used when undertaking the surveys, we feel this is inadequate to assess the numbers of marine mammals that could be impacted by the development, given the distances at which construction noises can disturb porpoises, these distances are highlighted below. Disagreement over underwater noise management thresholds. This is not based on strong science. Management approach used in Germany should be adopted. Concerns regarding the use of seasonal areas for underwater noise disturbance assessments. This approach will result in only half of the site being protected during half of the year. The current seasonal distribution of harbour porpoise may change over time due to natural factors or due to displacement from offshore wind farm development and therefore, it is essential that mitigation is deployed to ensure the protection of the whole site to safeguard site integrity. With the acknowledged gaps in understanding of harbour 	WDC, The Wildlife Trusts / Suffolk Wildlife Trust; MMO		<p>assessed against the wider population. As outlined within the Conservation Objectives of the site (JNCC and NE 2019), it is not advised to use the SNS SAC site population estimate in any assessments of effects of plans or projects, as these need to take into consideration population estimates at the Management Unit (MU) level (JNCC and NE 2019).</p> <p>An additional assessment was completed and provided to the Expert Topic Group based on the estimate that the SNS SAC could support 29,384 harbour porpoise (SCANS-III data for 17.5% of the UK North Sea MU) alongside the PEIR for information.</p> <p>The baseline survey methodology with 4km buffer was agreed with NE prior to the surveys commencing. This follows a standard procedure for most offshore windfarms. The area allowed the transects covering the East Anglia TWO site (and 4km buffer zone) to be conducted in one day which is important in reducing the potential for double-counting animals that have moved from one part of the survey area to another during long survey periods. In addition to the survey data, data from other nearby offshore wind farm surveys, SCANS and other surveys were also reviewed to provide additional information on the wider area (see section 11.4.2 of Chapter 11 Marine Mammals of the ES).</p> <p>Acknowledged regarding underwater noise management for disturbance impacts.</p>

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	<p>porpoise use of the Southern North Sea SCI, it would be consistent with the Precautionary Approach to deliver whole site mitigation.</p> <ul style="list-style-type: none"> • Eastern IFCA support the outcome of the assessment relating to the conservation objectives for the Harbour and Grey seal arising from changes in prey resources in The Wash and North Norfolk Coast SAC. • A site-based population assessment on the impact of the development on the SNS SCI should be carried out. • It should be noted that the NOAA criteria recommend thresholds based on the Peak Sound Pressure Level (SPL_{peak}) and the SEL_{cum}, not the Single Strike Sound Exposure Levels (SEL_{ss}) as presented in Appendix 11.3 tables 6.4 and 6.5. • The underwater noise assessment (Appendix 11.3) should also include a plot showing the predicted received sound levels with range, for a single strike sound exposer level. This will streamline the process of comparing predictions with any future construction noise monitoring data collected for compliance purposes. • The MMO has concerns surrounding Paragraph 308 of chapter 11 which states “mitigation, outlined in section 11.3.3, would ensure no harbour porpoise, grey seal and harbour seal were in the potential impact range for PTS from the first strike of the soft-start and therefore reduce the risk of PTS”. It is the opinion of the MMO that any proposed mitigation may reduce 			<p>All mitigation included in order to negate effect of PTS within the Marine Mammal Mitigation Protocol (MMMP) (Document Reference: 8.14) for piling and Unexploded Ordnance (UXO) will be undertaken at all times of the year.</p> <p>The assessment on seasonal areas follows the most recent advice from the SNCBs.</p> <p>Acknowledged regarding the assessment in relation to conservation objectives.</p> <p>Single Strike Sound Exposure Levels (SEL_{ss}) is appropriate for the assessment of noise from UXO detonations as this is a ‘single pulse’ noise source; there is only one detonation to consider. In this case, the SEL_{cum} value would be the same as the SEL_{ss}. As stated within Appendix 11.4 Underwater Noise Assessment of the ES, an assessment in respect of SEL is considered preferential at long range as it takes into account the overall energy and the smoothing of the peak is less critical. However, it should be noted that assessments using the SPL_{peak} criteria has also been completed.</p> <p>Text in section 11.6.1.3.2.2 now paragraph 313 of Chapter 11 Marine Mammals of the ES has been updated and states, as suggested: “<i>Mitigation, as</i></p>

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	<p>the number of marine mammals in the area, there is no guarantee that the area will be free of marine mammals. It is recommended that this statement is amended to reflect this.</p> <ul style="list-style-type: none"> The case law supports an approach which looks at both the site-level population and the favourable conservation status within the species natural range (see e.g. Commission v Spain C 404/09). Commission Guidance (Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive 92/43/EEC", European Commission, 2000, ISBN 92-828-9048-1) states at 2.3.2 that while favourable conservation status for species is defined by reference to its "natural range", the assessment of favourable conservation status at site level "will always be necessary". For the purposes of appropriate assessment, the focus is on the impact of the plan or project on the integrity of the site (for example, where article 6(4) is engaged, the damage to the site must be precisely identified (see Commission v Greece C43/10 at 114)). WDC are pleased that it is recognised that the impacts from piling include both physiological and behavioural impacts on marine mammals. WDC note that INSPIRE modelling has been used to predict underwater noise levels from the construction of EA2 and EA1N. Whilst WDC feel this is model will be helpful in the assessment, the model has been found to under predict noise levels (Spiga, 2015) which can potentially lead to 			<p><i>outlined in section 11.3.3, would reduce the risk of PTS from a single maximum hammer energy applied"</i></p> <p>In addition, no offshore wind farm could commence piling without an agreed MMMP in place with the relevant regulator.</p> <p>Assessments were conducted based on the current SNCB advice and the Conservation Objectives for the site. As outlined in the Conservation Objectives of the site (JNCC and NE 2019), it is currently not advised to use the SNS SAC site population estimate in any assessments of effects of plans or projects, as these need to take into consideration population estimates at the MU level.</p> <p>As stated above, an additional assessment was completed and provided to the Expert Topic Group attendees, based on the estimate that the SNS SAC could support 29,384 harbour porpoise . However, this will not be submitted with the DCO Application.</p> <p>The Applicant is confident that the modelling used is appropriate for the purposes of this assessment. A precautionary approach has been used for the underwater noise modelling with the worst case parameters used within the model, including piling hammer energies, soft-start and ramp-up scenarios, strike rate, duration of piling, receptor swim speeds and water depths. In addition, this model has been validated against over 50 datasets of piling noise, at differing</p>

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	underestimate the impact of piling on cetaceans. WDC are pleased that the National Marine Fisheries Service (NMFS) modelling (National Marine Fisheries Service (NMFS), 2018) is also used as agreed in the Expert Topic Group.			hammer energies and distances, as well as against modelling data from third parties. More information on the underwater noise modelling and INSPIRE model can be found in Appendix 11.4 Underwater Noise Assessment. During the development of the final MMMP for piling, the underwater noise modelling will be reviewed, and updated, if required.
	<p>PEIR Impacts</p> <ul style="list-style-type: none"> Clarification is required regarding Chapter 9 as it is not clear if the turbines and environmental conditions at East Anglia 2 are comparable to the previous windfarms that are being used to broadly inform the likely significance of noise. It is noted that in appendix 11.3 that “the considered turbine size for (operational noise) modelling at this wind farm is larger than those for which data is available. EA2 and EA1N are also in greater water depths, and as such, estimations of a scaling factor must be conservative to minimise the risk of underestimating the noise” which suggests that the previous wind farm may not be a suitable comparison. Clarification is required on this. WDC is concerned about the impacts of increased vessel activity particularly during construction. Increased vessel noise can interrupt harbour porpoise foraging behaviour and echolocation, which can lead to significantly fewer prey capture 	MMO; WDC	6	<p>A linear fit was applied to data available for current operational wind turbine noise, as this was considered to be method of estimating operational wind turbine noise that would lead to the highest, and thus worst case, estimation of source noise level from the larger 300m wind turbine. This resulted in an estimated source level of 164 dB SPLRMS, 18 dB higher than the 6 MW wind turbine, the largest for which noise data currently exists. The alternative method of using a logarithmic fit (with an increase of 3 dB per doubling of power output) to data would lead to a source level of 151 dB SPLRMS. A more extreme and unlikely 6 dB increase per doubling of power output would lead to 156 dB SPLRMS. Taking into consideration the above, the method of using a linear fit estimate is considerably higher than alternatives and is a highly precautionary approach.</p> <p>An assessment of the increase of collision risk to harbour porpoise has been included in Chapter 11 Marine Mammals section 11.6.1.8 of the ES, and an assessment of the potential disturbance due to</p>

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	<p>attempts (Wisniewska et al., 2018). Harbour porpoises have a high metabolism and need to feed constantly and therefore are highly sensitive to disturbance (Wisniewska et al., 2016), and can lose 4% of their body weight in just 24h from starvation². There is an increased risk of collision and disturbance to cetaceans from increased vessel activity (Dyndo et al., 2015; James, 2013). This is of particular importance as there are expected to be a large increase in the number of vessels in the of EA2 and EA1N area during construction.</p> <ul style="list-style-type: none"> • WDC do not agree with the assumption in 11.6.1.8.1 Chapter 11 Marine Mammals that “Marine mammals in the ... offshore development area would be habituated to the presence of vessels (given the existing levels of marine traffic) and would be able to detect and avoid vessels. Therefore, harbour porpoise... are considered to have a low sensitivity to the risk of a vessel strike” as there is no evidence to base these assumptions upon. This conclusion is particularly concerning due to the location of EA2 and EA1N in the SNS SCI, especially if the area is important for feeding and breeding. • Loud noises, such as pile driving, can cause harbour porpoise to be displaced (Dähne et al., 2013) from potential important feeding grounds. Additionally harbour porpoise can lose 4% of their body weight in just 24 hours from starvation (Kastelein, 2018). Given the importance of the 			<p>increased vessel presence is included in Chapter 11 Marine Mammals section 11.6.1.6 of the ES. Assessments on the potential impacts of vessels have been based on the worst-case scenarios. All vessel operators will use good practice to reduce any risk of collisions with marine mammals.</p> <p>The displacement of harbour porpoise as a result of any changes in availability of prey species is assessed in Chapter 11 Marine Mammals of the ES sections 11.6.1.9 and 11.7.7.</p> <p>The assessment for the proposed activities during construction are based on the worst-case scenario and it is anticipated that the potential impacts during decommissioning will be the same or less than those assessed for construction.</p>

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	<p>EA2 and East Anglia ONE North area and the SNS SCI for harbour porpoise, most likely as prime foraging areas, displacement from the area could be very significant.</p> <ul style="list-style-type: none"> WDC are pleased to see that at the moment there are no plans to use explosives during the decommissioning of the wind farm, and that instead decommissioning will most likely will involve cutting of piles and grinding or drilling techniques. We hope that this will continue to be the case when the detailed plan is drawn up because the use of explosives in decommissioning has the potential to cause physical harm or be lethal to cetaceans (Prior and McMath, 2008). WDC do have concerns regarding the noise levels that may be generated by decommissioning, and recognise that this will be dependent on the methods used to remove the turbine foundations and mitigation methods used. Until methods of removal have been decided, it will be inaccurate to conclude that the impacts from decommissioning on marine mammals will be negligible 			
	<p>PEIR Cumulative impacts</p> <ul style="list-style-type: none"> MMO does not agree with the rationale in Chapter 11 Section 11.7.2.1 paragraph 517 (para 521 in EA1N) that resulted in the conclusion that auditory injury through Permanent Threshold Shift (PTS) 	MMO; NE	6	The potential impact of PTS to act cumulatively with other project has not been assessed within the CIA as the potential for PTS to occur in marine mammals would be mitigated for each project screened into the CIA, resulting in no potential for cumulative impact.

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	<p>should not be considered as part of the cumulative assessment based on mitigation and other activities being considered “broadband noise in lower frequencies”. It is therefore the opinion of the MMO that PTS should still be considered within the Cumulative Impact Assessment.</p> <ul style="list-style-type: none"> • MMO does not agree with the statement made in Chapter 11 paragraph 390 that concludes that activities taking place at the same time as piling are not cumulative impacts. The reason given is “the maximum potential impact area for non-piling construction activities are less than those assessed for piling and will therefore be included in the predicted disturbance impact area assessed for piling”. The MMO believes these activities should be assessed as part of the Cumulative Impact Assessment. • As per NE’s previous advice, a mechanism needs to be developed by the regulators to ensure continuing adherence to the SNCB thresholds over time. Multiple SIPs will be developed, piling can take place over several years, and new projects can come online during this time. Should potential exceedance of the thresholds occur, a process for dealing with this issue needs to be in place – the affected developers / industries will need to work together with the regulator and SNCBs to prevent adverse effect on the SCI. • Until the mechanism by which the SIPs will be managed, monitored and reviewed is developed, 			<p>The conclusion that non-piling construction activities underway at the same time as piling are not cumulative impacts is in relation to the impacts associated with the project itself, and as the sound source location would be the same but significantly smaller than that assessed for the piling works, this represents the worst case assessment and any cumulative assessment for these activities would therefore affect the same individuals. The CIA includes consideration of piling and other noise sources from other projects (see Table 11.60, Chapter 11 Marine Mammals of the ES).</p> <p>Developing the Site Integrity Plans (SIPs) for both piling and UXO clearance in the pre-construction period will allow for a detailed review and assessment of the most effective and appropriate mitigation methods at that time, based on the latest scientific evidence to reduce underwater noise impacts, including the review of the best available mitigation techniques.</p> <p>An In principle SIP (Document Reference: 8.17) has been submitted with the DCO application secured under the requirements of the draft DCO.</p> <p>The MMO have responsibility for the SIP which provides the management framework and potential methodologies for management, it is therefore the responsibility of the MMO to determine how these work in practice. The SIP is secured via the draft DCO</p>

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	<p>NE are unable to advise that this approach is sufficient to address the in-combination impacts and therefore the risk of Adverse Effect on Integrity on the Southern North Sea SCI cannot be fully ruled out.</p> <ul style="list-style-type: none"> The tiers that projects are placed in will need to be revisited and updated prior to submission and any changes followed through in to the cumulative impact assessment both for the EIA and HRA. NE understands why only one of Thanet Extension, Norfolk Vanguard and Norfolk Boreas have been included in the CIA for EA2, but queries why Norfolk Vanguard was chosen to be included over Thanet Extension? Similarly, why was Norfolk Boreas included instead of Norfolk Vanguard? Rationale for these choices should be provided in the text. 			<p>The tiers that projects are placed in have been placed in has been updated in section 11.7.4.1 in Chapter 11 Marine Mammals of the ES</p> <p>Cumulative impacts upon benthic habitats and fish are assessed in Chapter 9 Benthic Ecology and Chapter 10 Fish and Shellfish Ecology of the ES. Where there are interrelationships between receptor groups (i.e. impacts upon spawning habitat of prey species for marine mammals) these assessments have been assessed for project alone (see section 11.6) and cumulatively (see section 11.7) and signposted in section 11.9 in Chapter 11 Marine Mammals of the ES.</p> <p>Projects were selected based on the most likely overlap in piling at the same time. Norfolk Vanguard was included rather than Thanet Extension or Norfolk Boreas as piling is more likely to overlap with the East Anglia TWO project, based on the assumption that Thanet Extension could be developed first, followed by Norfolk Vanguard and then Norfolk Boreas. Text has been clarified in the footnote to Table 11.56 in Chapter 11 Marine Mammals of the ES.</p> <p>Additional information has been provided on the inclusion of Norfolk Boreas in the assessment in section 11.7.4.1 of the same chapters.</p> <p>To clarify, it is considered that all construction impacts <i>apart from</i> piling could overlap for a single developer.</p>

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				<p>This acknowledges that construction activities may be concurrent (although this is unlikely) for a single developer, without including unrealistic scenarios for piling</p> <p>The potential for impacts in both the summer and winter areas of the SNS SAC for East Anglia TWO have been fully considered within this Information to Support Appropriate Assessment report, due to the proximity of the project to the seasonal areas of the SNS SAC.</p>
	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> Mitigation should take into account the predicted impact ranges (for both piling and UXO detonation). Mitigation should be secured using a Site Integrity Plan (SIP). When creating the SIP it is suggested that further noise reducing measures should be considered, e.g. Bubble curtains and acoustic barriers (IHC Noise Mitigation System) to further mitigate impacts on marine mammals in the area. NE considers that the requirement for a Site Integrity Plan (SIP) should be secured in the DCO for each project. Due to the concerns over the embedded mitigation methods, and until the mitigation methods that are to be used are known, it is inaccurate to conclude that the mitigation measures will ensure that impacts from piling on 	<p>MMO; NE; Eastern IFCA, WDC, The Wildlife Trusts / Suffolk Wildlife Trust</p>	16	<p>A separate MMMP for both piling and UXO clearance activities will be developed pre-construction in consultation with key stakeholders, including NE. This will take account of the comments made by NE. A draft MMMP (Document Reference: 8.14) for both piling and UXO has been submitted with the DCO application based upon the modelled impact ranges.</p> <p>Developing the SIP for both piling and UXO clearance in the pre-construction period will allow for a detailed review and assessment of the most effective and appropriate mitigation methods at that time, based on the latest scientific evidence to reduce underwater noise impacts, including the review of the best available mitigation technique.</p> <p>An In principle SIP (Document Reference: 8.17) has been submitted with the DCO application.</p>

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	<p>harbour porpoise and the harbour porpoise population supported by SNS SCI will be reduced. WDC strongly disagrees with the conclusions in the PEIR that either stand-alone or in-combination, that impacts on the harbour porpoise will be negligible with or without embedded mitigation.</p> <ul style="list-style-type: none"> • Mitigation measures should be used to aim to remove marine mammals from the mitigation zone prior to the start of piling. • A strategic approach to monitoring should be implemented within the SAC. • JNCC guidelines for minimising risk of injury are outdated and do not use the latest evidence. • WDC do not consider 'soft-start' to be an adequate mitigation measure as they are only a reduction in sound source at the initiation of a piling event. It cannot be assumed that cetaceans will leave an area during a soft-start as they may remain the area due to prey availability or breeding despite the harmful noise levels (Faulkner et al., 2018). Whilst a common sense measure, soft-starts are not a proven mitigation technique and so cannot be relied upon to mitigate impacts, especially for developments within the SNS SCI. • WDC are concerned that acoustic deterrent devices (ADDs) such as pingers may be used to move marine mammals out of the area. Not only will this add another source of noise into the environment (Faulkner et al., 2018), the use of 			<p>The MMMP and SIP will set out the approach to deliver any project mitigation or management measures in relation to harbour porpoise and the SNS SAC. Developing the MMMP and SIP in the pre-construction period will allow for a detailed review and assessment of the most effective and appropriate mitigation methods at that time, based on the latest scientific evidence to reduce underwater noise impacts. It is acknowledged that WDC disagree with the conclusions of the assessment. However, the Applicant stands by the findings of the assessment and as previously outlined, the Applicant is committed to using effective, proven and appropriate mitigation methods based on the latest scientific evidence.</p> <p>Comment regarding mitigation measures to remove marine mammals from the area – acknowledged.</p> <p>Details of potential monitoring will be developed pre-construction. These will be developed in consultation with stakeholders and be appropriate to the final project design and construction methodology. High-level proposals for monitoring are included in the In principle Monitoring Plan (Document Reference: 8.13), provision is also included (if required) within the In principle SIP.</p> <p>Reference to the JNCC guidance (JNCC, 2010) has been provided for context only.</p>

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	<p>ADDs has not been proven as a mitigation for pile driving and cannot be relied upon for the range of species likely to be encountered in the wind farm region. The range of displacement from ADDs has the potential to exceed the range of displacement from pile driving itself when using bubble curtains (Dähne et al., 2017).</p> <ul style="list-style-type: none"> • A study analysing the benefits of noise reduction to harbour porpoise during offshore wind construction found that if wind farms inside the SNS SCI reduced their noise levels by the equivalent of around 8dB, the risk of a 1% annual decline in the North Sea porpoise population can be reduced by up to 66% (WWF, 2016). Such an approach is the only way to reduce the far reaching avoidance distances for cetaceans. • We recognise that the MMMP will be designed closer to construction, once all details and plans are known, and that mitigation methods to be used will be decided at that time. We believe this to be appropriate as this enables the latest proven mitigation methods to be included in the MMMP. • WDC would like to be involved in the consultation of the MMMP. • WDC appreciate the commitment that is being made to the implementation of mitigation. • WDC request to be involved in the consultation of the SIP. • Concerns that the Site Integrity Plan (SIP) will fail to achieve noise reductions necessary to ensure no Adverse Effect on Integrity of the SNS SCI. 			<p>Developing the MMMP in the pre-construction period will allow for a detailed review and assessment of the most effective and appropriate mitigation methods at that time, including the latest scientific evidence and guidance for 'soft-starts'.</p> <p>The potential disturbance from the proposed use of ADDs has been assessed in section 11.6.1.4.1.2 Chapter 11 Marine Mammals of the ES. If the use of ADDs is proposed as a mitigation method the potential disturbance will be assessed against the risk of any physical or permanent auditory injury (PTS) to marine mammals. Examples of ADD use were included, but as outlined above all effective and appropriate mitigation methods will be reviewed during the development of the MMMP. The use of ADDs has been used as mitigation during piling at several European and UK offshore windfarms.</p> <p>All effective and appropriate mitigation methods will be reviewed during the development of the MMMP.</p> <p>Acknowledged regarding commitment to MMMP. Developing the MMMP in the pre-construction period will allow for a detailed review and assessment of the most effective and appropriate mitigation methods at that time, including the latest scientific evidence. WDC will be consulted on in the development of the MMMP in the pre-construction period.</p>

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	<ul style="list-style-type: none"> It is recommended that mitigation should take into account the predicted impact ranges (for both piling and UXO detonation). TWT is concerned that current mitigation used during UXO clearance is not fit for purpose. It is essential that work is undertaken over the coming years to gain realistic figures on noise impacts from UXO clearance and harbour porpoise response in relation to this. An assessment on the effectiveness of current mitigation measures, such as bubble curtains is also required. If the evidence suggests that current mitigation methods are not effective, then investment in research and deployment of new mitigation methods is required. Guidance for piling and UXO activities are out of date, as they weren't developed with the scale of round 3 offshore wind farms in mind. 			<p>Acknowledged regarding commitment to implementation of mitigation.</p> <p>Developing the SIP in the pre-construction period will allow for a detailed review and assessment of the most effective and appropriate mitigation methods at that time, based on the latest scientific evidence to reduce underwater noise impacts, including embedded mitigation. An In principle SIP (Document Reference: 8.17) has been submitted as part of this DCO application. WDC will be consulted during the development of the final SIP.</p> <p>A separate MMMP for both piling and UXO clearance activities will be developed pre-construction in consultation with key stakeholders, including NE. This will take account of the comments made by NE. A draft MMMP (Document Reference: 8.14) for both piling and UXO has been submitted with the DCO application based upon the modelled impact ranges.</p> <p>Developing the MMMP for UXO clearance in the pre-construction period will allow for a detailed review and assessment of the most effective and appropriate mitigation methods at that time, based on the latest scientific evidence.</p> <p>Reference to the JNCC guidance (JNCC 2010) has been provided for context only. Developing the MMMP for piling and UXO clearance in the pre-construction period will allow for a detailed review and assessment of</p>

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				the most effective and appropriate mitigation methods available at that time, including the latest scientific evidence and guidance.
	Project Design <ul style="list-style-type: none"> Para 397 states there is expected to be 74 additional vessels on site during construction with an average of 136 trips per month, whereas paragraph 427 states 115 trips per month. Please could clarity be provided as to which is the correct figure. 	NE	1	This has been amended within this ES to 74 vessels in total, with up to 124 movements per month and 4.1 movements per day, as per Table 11.2 in Chapter 11 Marine Mammals of the ES.
	Pre-construction surveys <ul style="list-style-type: none"> More pre-consent surveys should be carried out to gain a more realistic understanding of required UXO clearances. 	The Wildlife Trusts / Suffolk Wildlife Trust	1	Further investigations into the number, location and size of UXOs within the East Anglia TWO offshore development area will be undertaken in the pre-construction period.
	Concern over underwater noise and vibration <ul style="list-style-type: none"> Noise and vibration impact on marine mammals. Foundations requiring piling should be taken out of consideration. Concern over the PTS impacts for pin piles using SEL_{cum} ranges is up to 20km. Concern surrounding the intense noise pollution resulting from pile driving for all cetacean species and the harbour porpoise population supported by the SNS SCI. Although it is likely that pile driving activity will not be constant, the installation of monopile foundations has been found to have a profound 	Local Community Member; WDC, The Wildlife Trusts / Suffolk Wildlife Trust	5	<p>The impacts of noise and vibration on marine mammals has been taken into account in Sections 11.6.1 and 11.6.2 of Chapter 11 Marine Mammals of the ES. The impact of noise and vibration on marine mammals has been assessed as minor adverse</p> <p>Piling has been assessed as worst case, but other foundation options are being considered. The requirement for pile driving will be based on the several factors, such as underlying ground conditions and the safest way to successfully install and operate the wind turbines. The most suitable foundation options for the</p>

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	negative effect on harbour porpoise acoustic activity up to 72 hours after pile driving activity (Brandt et al., 2011). It is unlikely that harbour porpoises will return to an area during these gaps, resulting in them most likely being excluded from the area for the entire duration of construction.			<p>site would be determined during final design, post consent, and would be informed by further site investigations.</p> <p>The MMMP for both piling will be developed pre-construction in consultation with the relevant SNCBs, this will take into account the final project design, along with the latest guidance and latest information, including any updated noise modelling, to determine the predicted PTS ranges and mitigation required to reduce the risk of PTS in marine mammals. The assessments presented in the ES and draft MMMP (Document Reference: 8.14) are based on the current worst-case scenarios.</p> <p>Acknowledged. An assessment of the potential for disturbance from pile driving is included in Chapter 11 Marine Mammals section 11.6.1.4.1 of the ES. The assessments for the potential disturbance and possible behavioural response in harbour porpoise was based on the currently advised thresholds and criteria for underwater noise modelling, as well as the SNCB recommended 26km Effective Deterrence Radius (EDR). In addition, a review of all relevant publications were conducted to put the assessment into context. There is no evidence that bottlenose dolphin would be present in the East Anglia TWO windfarm site, however, the MMMP and SIP although aimed primarily at harbour porpoise would provide mitigation for other cetaceans / EPS.</p>

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				A number of studies have been used to inform the assessment of piling noise on harbour porpoise, including the results of the DEPONS model which has shown that local harbour porpoise density levels recovered to their baseline levels within two to six hours of the piling activity ceasing (Nabe-Nielsen et al. 2018).
	<p>Concerns over impacts on marine mammals</p> <ul style="list-style-type: none"> Impact on harbour porpoise in the Southern North Sea SCI. The impacts on marine mammals are not minor. Impacts on marine life still not fully understood. Impacts on seals at Thorpeness. Impacts on harbour porpoises. European Commission Guidance states that the integrity of the Southern North Sea SCI (habitat and species) should be maintained. 	Local Community Members; WDC	9	<p>The impacts to marine mammals have been assessed in Chapter 11 Marine Mammals of the ES. The assessment has been undertaken using a matrix approach which follows best practice and EIA guidance. The impact is determined by a receptor's sensitivity and value and the magnitude of the impact. Using this method, after mitigation all impacts have been assessed to have either a minor adverse or negligible effect on marine mammals. The assessment has taken into account the impacts of all stages of the project (construction, operation and decommissioning).</p> <p>The impacts to harbour porpoises, grey seals and harbour seals have been assessed throughout Chapter 11 Marine Mammals of the ES. The impacts were assessed to be either negligible or minor adverse. The MMMPs and the SIP for the SNS SAC will be used to minimise the impacts.</p> <p>In order to maintain the integrity of the SNS SAC a SIP will be developed to set out the approach to deliver project mitigation and management measures in relation to the SNS SAC. A similar adaptive management tool</p>

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				was developed for the East Anglia THREE DCO submission.
	<p>Cumulative impacts on marine mammals</p> <ul style="list-style-type: none"> We are pleased that currently there are no plans for concurrent piling at EA2 and EA1N offshore wind farms. However if the construction window of both offshore wind farms will overlap the cumulative potential impact of pile-driving for these wind farm on the harbour porpoise population is high, covering the lifespan of a porpoise and with a high potential to affect breeding and feeding activity. 	WDC	1	<p>The construction windows for the East Anglia ONE North and TWO projects may overlap, however, under that construction scenario, there would be no concurrent piling.</p> <p>The assessment of disturbance to harbour porpoise as a result of pile driving, taking into account the total time that pile driving may be undertaken, is included in section 11.6.1.4, Chapter 11 Marine Mammals of the ES.</p>
Offshore Ornithology	<p>PEIR Baseline</p> <ul style="list-style-type: none"> Paragraph 62 (p.25 EA2; 61 EA1N) highlights that no site-specific surveys have been carried out for the offshore cable corridor. Assessments are being based on historic data collected from 2013. The RSPB considers such data should have been updated to ensure that a robust understanding of the cable corridor and potential impacts is available. This is particularly important when understanding potential displacement impacts for red-throated diver which could be potentially significant. It is not clear how this deficiency will be addressed. 	Royal Society for the Protection of Birds (RSPB); NE	7	<p>In contrast to RSPB, NE welcomed the use of the 2013 (APEM) data.</p> <p>The assessment of potential construction disturbance impacts to red-throated diver within the export cable corridor makes use of a NE commissioned survey report on 2018 surveys of divers within the Outer Thames Estuary SPA (Irwin et al 2019). It is therefore based on very recent data.</p> <p>The approach presented in Furness (2015) under “breeding season” has been adopted.</p>

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	<ul style="list-style-type: none"> Section 3.1.3.3.3. Seasonal definitions - NE advise that for species where breeding birds are predicted to be present in a project area, that the breeding season months follow those presented in Furness (2015) under “breeding season” and not the “migration-free breeding season”, except in cases where colony or site specific information suggests that a different set of months is appropriate for defining colony attendance. Section 3.1.3.3.4. Apportioning of impacts in the non-breeding seasons to relevant SPA colonies - For the apportionment of impacts of species to relevant SPA colonies during the non-breeding seasons, NE would recommend that the data presented in the tables in Appendix A of Furness (2015) for the relevant species Biologically Defined Minimum Population Scales (BDMPSs) for each season (e.g. migration, winter etc.) are used. 4.7.2.2. Seasonal Definitions - the Applicant has considered that due to the very low presence of breeding birds it is appropriate to define breeding as the migration-free breeding period or core breeding period for all species with the exception of lesser black-backed gull. NE advise that for species where breeding birds are predicted to be present in a project area, that the breeding season months follow those presented in Furness (2015) under “breeding season” and not the “migration-free breeding season”, except in cases where colony or site specific information suggests 			<p>The relevant sections (for the apportionment of impacts of species to relevant SPA colonies during the non-breeding seasons) have been updated as suggested.</p> <p>The Applicant has given further consideration to seasonal definitions on a species by species basis and this is reflected in the assessment.</p> <p>The approach recommended by NE has been taken for Chapter 12 Offshore Ornithology of the ES – for LBBG the full breeding season has been applied and where this overlaps with the spring and autumn migration seasons the latter seasons have been adjusted (i.e. the overlapping months have been assigned to breeding only).</p> <p>We welcome that NE are happy with the use of the APEM 2013 data. Reference will also be made to the more recent surveys conducted in 2018 (Irwin et al. 2019).</p> <p>In relation to the potential effects noted by NE, the Applicant considers it relevant to take into account the distance between SPAs and the project and the timing of those potential effects. On this basis, if the relative scale and magnitude is such that it is apparent that the potential for an effect is extremely small then that should be used as the basis for screening such effects out.</p>

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	<p>that a different set of months is appropriate for defining colony attendance. In instances where the full breeding season is used to define the breeding season, there will then be overlap of months considered in both the full breeding season and the non-breeding seasons (e.g. with autumn and spring migration seasons). In cases where this occurs NE advise that the non-breeding periods are adjusted accordingly.</p> <ul style="list-style-type: none"> 4.7.2.3. Lesser black-backed gull (LBBG) seasonal definitions - NE welcome that the full breeding season as defined in Furness (2015) (i.e. April-August) has been applied for the attribution of potential impacts to relevant populations of LBBG for EIA. However, NE note that from Table 12.10 of the PEIR Chapter 12 for EA2 that there is then overlap of this with the autumn migration (considered to be August-October) and spring migration (March-April). It is currently unclear how these overlapping months been treated in the attribution of potential impacts in the PEIR Chapter. Given that the Alde-Ore Estuary SPA is located within the mean-maximum foraging range of LBBGs from the EA2 site, NE advise that the extended (full) breeding season is used for the HRA assessment for this site and species, rather than the migration free breeding season as currently used by the Applicant in the HRA report. NE would also advise that the migration (autumn and spring) periods are adjusted accordingly. 			<p>The offshore ornithology assessments have been updated for the ES based on the complete aerial data sets for East Anglia ONE North and East Anglia TWO, and a revised red-line boundary and wind turbine scenarios for East Anglia TWO.</p>

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	<ul style="list-style-type: none"> 12.4.2.3 – desk based assessment: Given that the offshore cable corridor passes through the Outer Thames Estuary SPA, NE welcome that RTD densities in the site from JNCC (2013) and from the APEM 2013 surveys have been used. Table 12.12 – designated sites: NE agree that the designated sites listed in Table 12.12 have potential connectivity with the proposed EA2 site. the Applicant should also screen in/consider SPAs where there is an impact pathway in the non-breeding season (even if there is no impact pathway in the breeding season). Given the potential for all three auks (guillemot, razorbill and puffin) to winter in the North Sea, this would therefore include consideration of the Farne Islands SPA (guillemot and the seabird assemblage feature, which includes razorbill and puffin) and Coquet Island SPA (seabird assemblage feature, which includes puffin). Data for baseline characterisation and impact assessments - The PEIR offshore ornithology chapter for EA2 is based on 21 months of digital aerial survey data from the site plus a 4 km buffer. We note that the additional 3 months of data for will be included in the final ES submission. As a result of this we note that the figures presented in the PEIR for the assessments of displacement and collision risk are likely to change following the addition of this data. In addition, we understand that the turbine numbers for the worst-case scenario for EA2 will be changing for the final 			

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	submission (increase in numbers from PEIR to submission). Therefore, we note that all assessments and conclusions will need to be revisited once the full data set is available and hence, we have not made any comments regarding the levels of impact significance.			
	<p>PEIR Baseline Turbine Specifications</p> <ul style="list-style-type: none"> 12.3.2 – worst case: NE note that in Annex 3 of Appendix 12.1, Table 5 of the turbine specifications used in the CRM suggests the CRM is based on 67 x 12MW turbines, 42 x 15MW turbines and 42 x 19MW turbines. These are different from the turbine numbers suggested in paragraph 21 of Chapter 12 of the PEIR, which suggests the CRM has been done on 67 x 12MW and 53 and 48 x 19MW turbines. Which is also different from Table 12.2 of Chapter 12, which suggests the realistic worst case is a maximum of 75 x 12MW turbines with other scenarios of 60 x 50MW or 48 x 19MW turbines. NE advise that the Applicant checks the various turbine specifications presented in Chapter 12 and Appendix 12.1 and ensures that the worst case in terms of collision risk is presented and that this is consistent throughout the documents. NE note that the collision risk model has not been re-run for the updated scenarios because of time constraints, but an assessment of the updated parameters will be included within the ES and this 	NE	1	<p>Chapter 12 Offshore Ornithology of the ES and appendices for East Anglia TWO have been updated to ensure that the wind turbine scenarios on which the assessment is based are consistent throughout and consistent with those presented elsewhere in the ES.</p> <p>These updated parameters and the full offshore ornithology aerial data sets have been used for the updated collision risk modelling (which has also incorporated responses to other comments on collision risk modelling).</p>

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	will also incorporate the remaining three months of aerial survey data.			
	<p>PEIR Assessment Methodology</p> <ul style="list-style-type: none"> Assessment should be done on the operational element of the windfarm on the red-throated diver. New JNCC/BTO report on the Offshore Renewables Joint Industry Programme (ORJIP) study has recommended new avoidance rates for gannet and kittiwake. Little detail in PEIR about how birds will be affected. Key areas of concern which we expect to be addressed within the Environmental Statement are: Impact significance. The RSPB is unable to agree at this stage that no impacts greater than minor adverse significance will occur to ornithological interests as a result of offshore elements of the project. Our concerns relate principally to collision risk to gannet and kittiwake, particularly in relation to the Flamborough and Filey Coast SPA, lesser black-backed gull of the Alde-Ore Estuary SPA and great black-backed gull, and to displacement of red-throated diver (including those of the Greater Wash SPA), razorbill and guillemot. Methodological issues. The RSPB considers that some methodological procedures used in the 	Offshore Ornithology Expert Topic Group (NE and RSPB); Local Community Member; NE	50	<p>Agreed with Expert Topic Group to review the proximity of the windfarm sites to the Outer Thames Estuary SPA and therefore potential for RTD displacement from operational wind turbines. An assessment of this has been carried out for the EIA and included within the Information to Support Appropriate Assessment Report (Document Reference: 5.3).</p> <p>The new BTO/ORJIP avoidance rates will be applied to the projects and mortality numbers presented in the Environmental Statement (ES). Results using ORJIP ARs will be presented alongside those already used, so that NE can see a range.</p> <p>RSPB key species and sites of concern are noted. The assessment has been revised and updated taking into account S42 comments, the full 24 month ornithology data set and additional relevant information that has become available (including peer reviewed papers, 'grey' literature reports and information made available as part of the DCO examinations for other UK offshore windfarms in 2019).</p> <p>The ES assessment of collision risk is based on the deterministic collision risk model (Band 2012), mean bird densities, and presents a range of nocturnal activity</p>

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	<p>assessment are inadequate to ensure a robust assessment and therefore a proper understanding of the likely impacts of the scheme. We have particular concerns regarding the stochastic model used in the assessment of collision risk, the use of median values for bird density within the collision risk modelling, and the use of revised nocturnal activity factors.</p> <ul style="list-style-type: none"> Red-throated diver displacement The RSPB notes that the SNCB recommended displacement and mortality rates for the red-throated diver displacement assessment have not been used. The analysis must present a worst-case assessment based on the best available evidence otherwise predicted impacts will be overly precautionary and not appropriate. As there are few robust studies of displacement, results differ, and we do not know the consequences for mortality or population trajectories, it is appropriate to consider a range of putative displacement and mortality rates. The current SNCB advice is that 90-100% displacement is assumed for red throated diver, as the evidence for displacement is high and widely acknowledged; for example, Furness et al. (2013), gave red-throated diver the highest possible score for susceptibility to displacement. Whilst we acknowledge that there is a range of displacement apparent from the literature, this includes, in the most recent study (Mendel et al., 2019) published after the SNCB guidance, a 			<p>factors taking account of current SNCB guidance on nocturnal activity for individual species, and published evidence where available for gannet.</p> <p>The project alone and cumulative assessments of displacement for red-throated diver have been based on 90-100% displacement from the offshore wind farm site and a 4km buffer and 1-10% mortality as recommended by SNCBs.</p> <p>For the project alone assessment, the most precautionary scenario does not represent an increase in mortality that would be detectable at the population level.</p> <p>For the cumulative assessment, using a range of mortality of 1–10% for displaced birds and different reference populations predicts changes in population mortality rates which are likely to be undetectable at the lower end and may be detectable at the upper end of the range. The assessment highlights the sources of precaution in the cumulative estimate.</p> <p>A review of available evidence is presented (which it is acknowledged is limited for the effects of displacement on red-throated diver and other seabirds, so studies of other avian taxa are considered). Based on this review and expert judgement a realistic and still precautionary recommendation is made for a combination of 90% displacement and 1% mortality for red-throated divers. On this basis the assessment of cumulative displacement indicates a minor adverse impact.</p>

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	<p>record of 94% displacement. We therefore agree with the SNCB recommendation that displacement of up to 100% and mortality of up to 10% represents an appropriate level of precaution and should be used in the assessment.</p> <ul style="list-style-type: none"> Applicant considers a 4km buffer to be over-precautionary (paragraph 156, p.57). It is stated that the inclusion of the 4km buffer in the assessment is a source of precaution, as evidence suggests that displacement decreases with distance, in some cases reaching zero by 2km. However, we highlight that there is increasing evidence to show that divers can be displaced from a greater distance, not only from operational wind farms but also from the associated boat traffic (e.g. Mendel et al., 2019). As such we consider that a 4km buffer is an absolute minimum rather than representing a precautionary approach and that impacts are possible over an even greater scale. The assessment concludes that there is a “high likelihood that cumulative displacement would be lower than the worst-case totals” due to the precaution in the assessment. This negates the purpose of the precautionary approach to assessment and overlooks the use of lower than recommended mortality rates. Even with these lower rates, the increase on baseline mortality is still up to 2.4% (based on the biogeographic population), therefore we also disagree with the subsequent statements that mortality will be likely 			<p>As above, the project alone and cumulative assessments of displacement for red-throated diver have been based on 90-100% displacement from the offshore windfarm site and a 4km buffer.</p> <p>While it is acknowledged that some studies show effects at distances further than 4km, other studies show effects at distances less than this. The effect may vary between sites and as a response to other environmental conditions.</p> <p>While the precautionary approach is followed as per SNCB guidance, the cumulative assessment also considers potential sources of ‘over-precaution’ in the assessment.</p> <p>The project alone and cumulative assessments of displacement for razorbill and guillemot have been based on 30-70% displacement from the offshore windfarm site and a 2km buffer and 1-10% mortality, including the worst-case scenario as recommended by SNCBs.</p> <p>For the project alone assessment, the most precautionary scenario does not represent an increase in mortality that would be detectable at the population level.</p> <p>For the cumulative assessment, using a range of mortality of 1–10% for displaced birds and different reference populations predicts changes in population mortality rates which are likely to be undetectable at the</p>

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	<p>to be less than 1% and therefore of minor significance.</p> <ul style="list-style-type: none"> Auk displacement assessment – displacement and mortality rates. The assessments at paragraph 284 (p.125 – razorbill) and paragraph 290 (p.130 – guillemot) are based on 70% displacement and 1% mortality. We support the recommendations of NE which state that the displacement assessment for auks should incorporate a 2km buffer and be based on worst case scenario (WCS) displacement of 70% and mortality of 10%. In order to predict the collision risk mortality of an offshore wind farm in the UK, the Band (2012) model has previously been used in assessment. This model uses a number of input parameters, such as bird size, flight speed and turbine blade dimensions, to calculate the probability of a bird that passes through the swept area of a turbine blade colliding with that blade. For this deterministic model the input parameters were defined as single values with no indication of variability around them. In reality, most of the parameters will exhibit a considerable degree of variability and stochastic collision risk modelling has been developed to allow this to be incorporated into the model and thus generate a potential range of output predicted collision mortalities. Masden (2015) created a stochastic version of the model as proof of concept, in order to demonstrate the feasibility of doing so, 			<p>lower end and may be detectable at the upper end of the range. The assessment highlights the sources of precaution in the cumulative estimate.</p> <p>The assessment refers to a detailed review of available evidence (which it is acknowledged is limited for the effects of displacement on auks and other seabirds, so studies of other avian taxa are considered). Based on this review and expert judgement a realistic and still precautionary recommendation is made for a combination of 70% displacement and 1% mortality for razorbill and guillemot.</p> <p>CRM has been re-run using the deterministic Band model (Band 2012). Sources of variation (both natural variation (e.g. seabird densities) and measurement error) have been incorporated through multiple runs of the model for each species using mean values and upper and lower intervals for: flight density (upper and lower 95% confidence intervals); avoidance rate (standard deviations, see Table 12.29 in Chapter 12 Offshore Ornithology of the ES); and proportions at collision height (based on the generic dataset in Johnston et al. 2014a, 2014b). In addition, for some species, rates of nocturnal activity were varied.</p> <p>The Stochastic Model commissioned by Marine Scotland was not used at this stage because errors were identified in the model code, and because of time limitations to run all species and scenarios. NE has</p>

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	<p>although the model remained incomplete. McGregor et al., (2018), under commission of Marine Scotland Science and overseen by an expert steering panel, produced a revised and fully tested stochastic model which has received widespread stakeholder acceptance (see, for example, NE's answer to the Hornsea Project Three Examiners' Question Q1.2.56). By contrast, the Applicant has presented a new and untested version that does not follow a recognised methodology (paragraph 218, p.84), with insufficient detail provided as to how it incorporates variability and uncertainty in the input parameters or how it overcomes the statistical difficulties of non-independence (the degree of interrelation) of some of these parameters. The RSPB therefore does not agree that the model presented by the Applicant is fit for purpose and recommend that the Marine Scotland (McGregor et al., 2018) model version is used in preference.</p> <ul style="list-style-type: none"> The RSPB is concerned that the values for bird densities within the deterministic CRM (Band, 2012) appear to be based on median values, resulting in lower mortality predictions than if the correct mean values are used (paragraph 218, p.84). We also note that, while mean monthly bird densities appear to be presented in Annex 1 of Appendix 12.1 Offshore Ornithology Technical Appendix, that paragraph 5 of that document states that the means presented are means of the median values and therefore their use in CRM 			<p>advised (see below) that <i>"if the MSS stochastic model cannot be used, then we advise that multiple tables of Band/deterministic model outputs are presented where the Applicant varies each parameter in turn using the Band (2012) model, and not all of them at once."</i></p> <p>CRM has been re-run using the deterministic Band model (Band 2012) and mean monthly bird densities. The density input values in to the CRM have been calculated as the mean of the two values available for each calendar month, in accordance with standard advice.</p> <p>CRM has been re-run using the deterministic Band model (Band 2012). For some species rates of nocturnal activity were varied. For kittiwakes and the large gulls, upper and lower limits of nocturnal activity of 25% or 50% have been used in the CRM, as advised by NE. For kittiwake the evidence based rate from a manuscript in preparation – applied to CRM in the PEIR – has not been used in the ES assessment. For gannet three nocturnal activity scenarios were run at rates of 25%, 0% (the range recommended by NE) and an evidence based rate (8% flying activity at night during the breeding season (March to September) and 4% flying activity at night during the nonbreeding season (October to February); Furness et al. 2018).</p>

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	<p>would again result in lower predicted collisions than if true mean values were used. This has significant implications for conclusions drawn in the HRA. The RSPB recommends that mean values should be used to recalculate impacts and Tables 12.30 (pp.89-93), 12.31 (pp.94-96), 12.33 (pp.101-103) updated to reflect the more appropriate predicted impacts.</p> <ul style="list-style-type: none"> The RSPB does not agree with the proposed changes in nocturnal activity rates set out in paragraphs 224 to 228 (pp.86-87). For gannet, we welcome the latest published evidence review (Furness et al., 2018), however we are concerned that the Applicant has not used the values presented in this paper, 8% and 3% for the breeding and non-breeding seasons respectively, rather they have used 4.3% and 2.3%, which will result in lower predicted mortalities. We are also concerned that by using revised nocturnal activity rates for gannet (and this is also applicable to kittiwake) mortalities are potentially underestimated because in doing so there is no account for the potential interaction between survey timing and diurnal behavioural patterns. Peaks in foraging activity at first and last light (see for example Fig. 3 in Furness et al. 2018) will not be accounted for in the assessment if these did not coincide with surveys (the timings of which are currently unknown, but likely to be midday if aerial), and the survey may have been carried out at a time of much lower activity. Thereby the 			<p>For each species where nocturnal activity was varied, the project alone assessment and the value for East Anglia TWO included in cumulative assessments, were based on the worst case (highest rate – i.e. 25%) of nocturnal activity.</p> <p>For cumulative assessments, the PEIR included an adjustment to collision risk estimate for other windfarms to account for evidence based rates of nocturnal activity in gannet and kittiwake. This adjustment has been removed from the cumulative tables in the ES.</p> <p>The analysis in Furness et al. (2018) uses the same definitions of twilight and night as those in the Band model as this was a key requirement to ensure this analysis was compatible with the inputs for the Band CRM.</p> <p>While it is important to consider the time of day that surveys were conducted, this should be in order to ensure that the surveys are representative of flight activity throughout the day. Thus, while there can be peaks and troughs in activity during the day, the aim should be to ensure that either surveys are undertaken to include these, or to collect data which reflects the average state of activity. Consideration of the activity levels presented in Furness et al. (2018) indicates that surveys conducted between 9-10am and 4-5pm (as the aerial surveys typically have been) fall squarely in this representative range (neither too high nor too low) and</p>

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	<p>application of the revised nocturnal activity rates either recommended by Furness et al., (2018) or the rates suggested by the Applicant could result in underestimates of collision risk. We therefore request that details of the timings of survey are presented. For kittiwake the Applicant cites a paper in preparation that has not yet been published (paragraph 310, p.80, EA2 HRA doc), and therefore cannot be accepted, particularly when this unseen evidence for a change in nocturnal activity rates will result in an unjustified reduction in predicted mortalities. It is also not clear how these revised rates account for the distinction between the definition of daylight as used in the Band model and with the official concept of 'twilight' and 'night'. This is an issue as the Band (2012) model considers the nocturnal period as between sunset to sunrise and so treats flight activity that occurs at twilight as being within the nocturnal flight period. Evidence from tagging shows that an important number of seabirds actively forage at twilight. We also do not agree that the nocturnal activity rate reductions should be applied to other windfarms in the cumulative assessment, noting in particular that it is unlikely that the timings of surveys undertaken for other windfarms are known. Furthermore, any change in nocturnal activity rate cannot be applied post hoc to collision mortality; the model itself needs to be rerun as the modelling calculates the reduction in activity at night through the interaction of</p>			<p>therefore meet the requirement of avoiding bias in survey timings.</p> <p>An avoidance rate of 98.9% has been applied for gannet throughout the year, based on the SNCB recommended rates (JNCC et al. 2014).</p> <p>At the time of writing the detail of the arguments presented by RSPB about potential changes in behaviour and avoidance rate in the breeding season has not been investigated. However, NE has not recommended any such changes. In addition there is the issue of how many, if any, gannets recorded on East Anglia TWO during the breeding season might actually be breeding adults.</p> <p>The consideration of confidence intervals in bird abundance data for displacement assessments is being investigated. It is noted however that use of the upper 95% confidence limit for displacement will increase the precaution in the assessment. Many sources of precaution have already been applied in the displacement assessment, as highlighted in the relevant species-specific sections.</p> <p>Displacement rates of up to 100% and mortality rates of 1-10% are presented in Chapter 12 Offshore Ornithology of the ES. The assessment of significance is based on 100% displacement in the wind farm and 4km buffer and mortality rates of 1-10% along with a review and</p>

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	<p>nocturnal activity and the latitude of specific wind farm, which therefore is a calculation specific to that wind farm, necessitating a rerun of the model. While we welcome the latest published evidence review for gannet (Furness et al., 2018), we are concerned that the mortalities predicted using revised nocturnal activity rates for gannet (and this is also applicable to kittiwake) are potentially underestimated because they do not account for the potential interaction between survey timing and diurnal behavioural patterns. Peaks in foraging activity at first and last light (see for example Fig. 3 in Furness et al. 2018) will not be accounted for in the assessment if these did not coincide with surveys (the timings of which are currently unknown, but likely to be midday if aerial), and the survey may have been carried out at a time of much lower activity. Thereby the application of the revised nocturnal activity factor recommended by Furness et al., (2018) could result in inaccurate underestimates of collision risk. The Nocturnal Activity Scores presented for gannet in the application documents are also not in accordance with this latest review (Furness et al., 2018). The values used in the assessment, 4.3% and 2.3% respectively, are even lower than the recommendations of the review (8% in the breeding season and 4% in the non-breeding season) and thus reduce predictions of collision risk further. The robustness of this assessment must therefore be questioned.</p>			<p>recommendations of the rate which the Applicant believes to be supported by the greatest evidence-base.</p> <p>The ES assessment for the site alone considers 100% displacement from an operational windfarm and 4km buffer, as requested by NE, 90-100% for the cumulative assessment displacement and 10% mortality for the cumulative assessment.</p> <p>The boundary of the East Anglia TWO windfarm site has been revised and is now 8.3km from the boundary of the Outer Thames Estuary SPA at the nearest point.</p> <p>The EIA considers 100% displacement and a maximum of 10% mortality for the project alone assessment, and 90-100% displacement and a maximum of 10% mortality for the cumulative assessment.</p> <p>CRM has been re-run for the ES using the deterministic Band model (Band 2012) and variations in parameters as requested. For gannet three nocturnal activity scenarios were run at rates of 25%, 0% (the range recommended by Natural England) and an evidence-based rate (8% flying activity at night during the breeding season (March to September) and 4% flying activity at night during the nonbreeding season (October to February); Furness et al. 2018).</p> <p>For species where nocturnal activity was varied, the project alone assessment and the value for East Anglia TWO included in cumulative assessments, were based</p>

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	<ul style="list-style-type: none"> Gannet avoidance rate - Paragraph 222 (p.85) indicates that the avoidance rate for gannet should be higher than the advised 98.9%. Whilst the RSPB agrees with the use of a 98.9% avoidance rate for non-breeding gannets, in the breeding season, a 98% avoidance rate is considered more appropriate. This is not highlighted in the text, only the autumn migration period information from APEM (2014). Cleasby et al., (2015), while not discussing avoidance rates, demonstrated that foraging birds are at more risk of collision than commuting birds. In order to provision chicks, gannets will need to forage more during the breeding season and will also be constrained by central place foraging. Such behavioural differences are likely to result in changes in avoidance behaviour (Cook et al., 2018), and since the figures used for the calculation of avoidance rates advocated by the SNCBs are largely derived from the non-breeding season for gannet (Cook et al., 2014 and Cook et al., 2018) we recommend a more precautionary avoidance rate of 98% should be presented for the breeding season. The current SNCB advice also highlights that due consideration should be given to uncertainty in collision risk estimates, including the use of confidence intervals around the avoidance rates and flight height estimates. The suggestion that the advised avoidance rate for gannet is over precautionary is therefore 			<p>on the worst case (highest rate – i.e. 25%) of nocturnal activity.</p> <p>Noted regarding the use of a stochastic CRM.</p> <p>CRM has been re-run for the ES using the deterministic Band model (Band 2012) and variations in parameters as requested. All input parameters for the CRM are provided in Appendix 12.2 Ornithology Technical Appendix of the ES.</p> <p>Information on windfarm width and latitude is also now included within Annex 3 Collision Risk Model Input Parameter of Appendix 12.2 Ornithology Technical Appendix of the ES.</p> <p>CRM has been re-run for the ES using the deterministic Band model (Band 2012). This uses the mean density of birds in flight as recommended by NE.</p> <p>Following earlier concerns with the reliability of the stochastic CRM (which was still in the trial period) it has not been possible to confirm the model's suitability for use within the application timetable. As an alternative, the deterministic CRM has been used with upper and lower confidence estimates for density, flight height and avoidance rates.</p> <p>Herring gull is assessed for collision in the ES for both project alone and cumulative assessment (section 12.6.2.3.1.4 and section 12.7.4.4 in Chapter 12 Offshore Ornithology of the ES).</p>

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	<p>considered inappropriate and potentially misleading and the text either revised or removed.</p> <ul style="list-style-type: none"> Section 3.1.3.3.5. Lack of consideration of confidence intervals in bird abundance data for displacement assessments – NE require that the variability (uncertainty) in the underlying population estimates (i.e. through consideration of appropriately calculated upper and lower confidence intervals) is considered in the displacement assessments. Section 3.1.3.3.6. RTD mortality/displacement levels (EIA & HRA) -NE does not consider the 60-80% displacement and 1-5% mortality rate used by the Applicant to be appropriate for assessing disturbance and displacement impacts to RTD from offshore wind farms. NE note that this does not follow SNCB guidance (SNCBs 2017). NE notes the evidence presented by the Applicant on RTD displacement distances and displacement rates in the PEIR Chapter. However, NE note that there are other studies that have been undertaken that have not been considered by the Applicant. Section 4.7.2.5.2.7. Based on the available evidence, NE considers that there is no clear justification to change our current advice of a 4 km buffer and 100 % displacement across this (as advised in the joint SNCB displacement interim advice note, SNCBs 2017) at this stage for the purpose of impact assessment. It would seem that while 4 km may be an underestimate of the true extent of the displacement, assuming a 			<p>WWT Consulting (2014) indicates that migration through Scottish North Sea waters for these species is as follows:</p> <p>Great Skua - likely to track coastlines within a band 0-40km from shore.</p> <p>Little gull - likely to occur on a broad front between southern Scandinavia and east Scotland, then tracking the east coastline southwards in a relatively narrow band from 0 to 20 km from shore.</p> <p>As the East Anglia TWO windfarm site is between 32 and 50.8km offshore from the coast at the nearest point, there is some overlap with the migration corridor for great skua but not little gull, so migrant CRM will be presented for the former species only.</p> <p>Noted regarding the nocturnal activity rates that the Applicant has used.</p> <p>Noted regarding the nocturnal activity factor input parameter used in the Band Model calculation of collision risk. However, it should be reiterated that as NE state Garthe and Huppopp (2004) use a ranking score and the intention was qualitative. The conversation of these ranks into percentages was never intended by the authors.</p> <p>Noted regarding the nocturnal activity rate figures used by the Applicant for gannet and kittiwake.</p> <p>The Applicant acknowledges the points relating to the 'empirically derived' nocturnal activity rates and notes that the empirically derived estimates represent the most</p>

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	<p>magnitude of 100 % out to 4 km is likely to be an over-estimate.</p> <ul style="list-style-type: none"> Therefore, the use of the two components of our current advice (a conservative estimate of extent and a precautionary estimate of magnitude within that extent) in combination, is likely to result in an appropriate estimate, based on our current understanding of the evidence base. Indeed, the recent evidence (described above) suggests that this approach (100%, 4km) might be closer to the truth, and hence less precautionary. NE note that the EA2 array boundary is immediately adjacent to Outer Thames Estuary SPA and there is potential that displacement effects could occur several kilometres into the SPA from both construction and operational phases, in addition to displacement and disturbance effects from cable laying. NE advise that the Applicant consider revising their array boundary in order to avoid displacement effects on the SPA. NE has already advised in the context of several other Habitats Regulations Assessments that it is not possible to rule out an adverse effect on integrity in combination with other plans and projects for Outer Thames Estuary SPA. For example, advice to DECC regarding review of consent of London Array phase 1 (May 2013) ii) advice to MMO regarding marine aggregates licensing (February 2014), iii) advice to MMO regarding commercial fishing (July 2016). 			<p>robust nocturnal activity rates available, especially when compared with the simple relative scoring which has been used to date and which has no basis in empirical studies. Survey timings will be presented in the technical reporting as per this request and these demonstrate that the surveys have been conducted across a range of times of day and provide representative data on which to base daytime activity levels.</p> <p>Noted regarding the comment on NE's position on the absence of any agreed 'empirically derived' nocturnal activity factors that can be used with the Band model.</p> <p>CRM has been re-run using the deterministic Band model (Band 2012) and variations in parameters as requested. For gannet three nocturnal activity scenarios were run at rates of 25%, 0% (the range recommended by NE) and an evidence-based rate (8% flying activity at night during the breeding season (March to September) and 4% flying activity at night during the nonbreeding season (October to February); Furness et al. 2018). For kittiwake the evidence based rate has not been run in CRM.</p> <p>For species where nocturnal activity was varied, the project alone assessment and the value for East Anglia TWO included in cumulative assessments, were based on the worst case (highest rate) of nocturnal activity.</p> <p>Mean monthly densities of birds in flight have been used to run the deterministic CRM.</p>

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	<ul style="list-style-type: none"> NE also consider that the worst case scenario of 100 % displacement and 10 % mortality should be used in the assessment of construction disturbance and displacement for RTD for both EIA and for the HRA assessment for RTD at the Outer Thames Estuary SPA. However, NE note that consideration of this would not alter the conclusions made by the Applicant in Section 12.6.1.1.1 of the EA2 PEIR Chapter on assessment of offshore cable laying. Section 3.1.3.3.7. Collision Risk Modelling - NE are uncertain of what R code the Applicant has for their stochastic CRM. NE note that the Marine Scotland Science (MSS) stochastic collision risk model is now available for use. Therefore, NE request going forward that any collision risk assessments present both the Marine Scotland Science Stochastic Collision Risk Model and the Band model (or non-stochastic/deterministic version) outputs using the central values for the various variables (i.e. mean bird density, maximum likelihood flight height distribution from the generic Johnston et al. 2014 data, the SNCB recommended avoidance rates, the currently advised nocturnal activity factors or rates of 2 or 25% for gannet and 3 or 50% for kittiwake and large gulls) in line with other current OWF applications. If the MSS stochastic model cannot be used, then NE advise that multiple tables of Band/deterministic model outputs are presented where the Applicant varies each parameter in turn 			<p>Adjustment of seasons for LBBG has been made as recommended by NE.</p> <p>This is being investigated. It is noted however that use of the upper 95% confidence limit for displacement will increase the precaution in the assessment. Many sources of precaution have already been applied in the displacement assessment, as highlighted in the relevant species-specific sections.</p> <p>The above notwithstanding, the assessment will include presentation of outputs estimated using the density confidence limits.</p> <p>The ES (Document Reference: 6.1) and Information to Support Appropriate Assessment Report (Document Reference: 5.3) assessments for the site alone will consider the advised ranges of displacement and mortality and within those assessment will be based on the rates considered most appropriate on the basis of available evidence.</p> <p>The potential displacement of red-throated divers within the offshore wind farm site during construction is considered in Chapter 12 Offshore Ornithology of the ES in response to NE comments. Mortality rates of 1-10% are considered.</p> <p>A year-round assessment of construction disturbance/displacement impacts is included in the ES.</p> <p>The ES assessment for the site alone considers 100% displacement from the operational windfarm and 4km</p>

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	<p>using the Band (2012) model, and not all of them at once.</p> <ul style="list-style-type: none"> Section 4.7.2.5.3.1.1. the Applicant has undertaken the CRM using their consultants own version of a stochastic CRM in order to present the uncertainty in the various CRM parameters (PCH, avoidance rates, densities, nocturnal activity) for EA2. Section 4.7.2.5.3.1.4. NE is aware that the non-stochastic CRM for EA2 has been undertaken using R code for the Band model rather than by using the Band (2012) model spreadsheet. Therefore, the Applicant should provide evidence to clearly demonstrate that the R code that is used is producing the same results as the Band spreadsheet version for all Band model options presented. Therefore, NE advise that in the ES submission, the Applicant provides all of the input parameters used in their R model along with the R code in an Appendix, so that the results can then be checked. Whilst NE note that Annex 3 of Appendix 12.1 for EA2 contains the majority of the CRM input data, it does not contain information on the wind farm width and latitude used for EA2 Therefore, in order for us to be able to check the CRM when the application is submitted and hence reach conclusions on the level of impact due to EA2 alone, NE advise that the full set of input parameters required in order to be able to run the Band (2012) spreadsheets are presented. 			<p>buffer and a maximum of 10% mortality, as requested by NE, and for the cumulative assessment 90-100% displacement and a maximum of 10% mortality. Based on a detailed review of likely mortality of RTD from displacement, an evidence based maximum mortality rate of 1% is recommended.</p> <p>Table 12.14 in Chapter 12 Offshore Ornithology of the ES presents seasonal peak means for red-throated diver in the full and migration-free breeding season, the former higher estimate overlaps with the spring migration (so the seasonal peak mean is assigned to that season). Only small numbers of RTD were recorded during the migration free-breeding season – these may be late migrants or sub-adult birds remaining in wintering areas.</p> <p>A displacement matrix for gannet in the breeding season is included in Table 12.22 of Chapter 12 Offshore Ornithology of the ES. The maximum estimated mortality at 80% displacement and 1% mortality of displaced birds is two individuals.</p> <p>NE's understanding of the red-throated diver disturbance/displacement impacts is correct.</p> <p>CRM has been re-run using the deterministic Band model (Band 2012) and variations in parameters as requested. For gannet three nocturnal activity scenarios were run at rates of 25%, 0% (the range recommended by Natural England) and an evidence-based rate (8% flying activity at night during the breeding season (March</p>

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	<ul style="list-style-type: none"> Based on the approach taken by EA2 from Section 4.2 of Appendix 12.1, NE has a number of queries/areas of uncertainty where it would welcome further clarification from the Applicant regarding the approach taken in order to reach conclusions around the applicability of the CRM outputs presented. These are: <ul style="list-style-type: none"> NE are uncertain as to why in the stochastic CRMs the Applicant has not used the monthly density estimate +/- 95% confidence limits to give a range of predicted collisions. NE consider the use of a bootstrapped median to estimate density in the non-stochastic CRM to be questionable, when a mean density already exists. NE note that the point of bootstrapping is to estimate variance – the Applicant claim's that it has to be this way to enable comparison with stochastic CRM outputs, but NE aren't looking to compare the two. Additionally, Appendix 12.1 (Offshore Ornithology Technical Appendix) defends this approach by saying that "all collision predictions accurately reflected the observed densities", but NE is not certain that this is true. The observed densities are those derived from the images (average of birds per image), whilst the bootstrapped data is a theoretical distribution of densities, from which the 			<p>to September) and 4% flying activity at night during the nonbreeding season (October to February); Furness et al. 2018).</p> <p>For species where nocturnal activity was varied, the project alone assessment and the value for East Anglia TWO included in cumulative assessments, were based on the worst case (highest rate) of nocturnal activity.</p>

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	<p>median gives an estimate of central tendency – therefore not a probability of being the ‘true’ density.</p> <p>Page 34 of 120</p> <p>c. As noted recently during the Norfolk Vanguard project examination, NE advises that the mean density of birds in flight is the most appropriate to use for the deterministic/Band model, which has been the standard approach for previous offshore windfarm assessments. For the Marine Science Scotland stochastic Collision Risk Model the mean densities should also be used and there are three options for entering this data (see model user guide).</p> <ul style="list-style-type: none"> Section 4.7.2.5.3.4.1. NE note that herring gull is not fully assessed for CRM from EA2 alone as it has been excluded due to the collision predictions currently being predicted to be less than 1 bird per year. The exclusion of herring gull from full assessment of collision impacts and hence consideration of cumulative impacts under EIA is of concern to NE. NE note the issues raised above regarding the appropriateness of the use of median values of bird density in the CRM and note that if the mean values of bird density are used in the CRM rather than the median values, then herring gull collision predictions may increase. In addition, the figures may also increase once the full 24 months of data from EA2 			

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	<p>are considered. Therefore, NE advise that the inclusion of herring gull is reconsidered by the Applicant for the final submission.</p> <ul style="list-style-type: none"> Section 4.7.2.5.3.5.1. NE also note that migrant seabird species such as great skua and little gull have been excluded from further CRM assessment from EA2 alone, based on predictions from the CRM of less than 1 collision per year. However, NE note that this is based on using the digital aerial survey data, which due to the snap shot nature of these surveys may only record such species in small numbers. Therefore, NE advise that the turnover of these species passing through the EA2 is considered in the final assessment through methods such as that undertaken by WWT & MacArthur Green (2013). 4.7.2.5.3.3.1. For CRM of EA2 alone, the stochastic CRM assessment and that where just uncertainty in nocturnal activity was included, the Applicant has used nocturnal activity rates of: <ul style="list-style-type: none"> a. 4.3 % (S.E. 2.7 %) for the breeding season and 2.3 % (S.E. 0.4 %) for the non-breeding season for gannet; and b. 20 % (S.E. 5 %) for the breeding season and 17 % (S.E. 1.5 %) for the non-breeding season for kittiwake. 4.7.2.5.3.3.2. The nocturnal activity factor input parameter used in the Band Model calculation of collision risk is a ranking score from 1 to 5, derived from an assessment of nocturnal activity in different species in Garthe & Huppopp (2004), 			

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	<p>and not a 'nocturnal activity rate' per se. The Band model converts these factors to a percentage 0 % (factor 1), 25 % (2); 50 % (3), 75 % (4) and 100 % (factor 5) that is applied to the densities of birds in flight collected from surveys during daylight hours to correct for a different pattern of flight behaviour (typically reduced) occurring during the night. Under this broad classification Garthe & Huppopp (2004) assigned a factor of 2 to gannet, kittiwake a factor of 3 and herring gull and LBBG a factor of 3 (King et al., 2009, adds great black-backed gull as factor 3).</p> <ul style="list-style-type: none"> 4.7.2.5.3.3.3. The nocturnal activity rate figures used by the Applicant for gannet and kittiwake are based on the findings of recent reviews of evidence from tracking studies that have been undertaken by Furness et al. The work on gannet has been published in Furness et al. (2018), whilst the work on kittiwake is referred to as Furness et al. (in prep.), which suggests that this work has not yet been accepted and is therefore not published and publicly available. NE has provided comments on a draft of the review and notes that there were aspects that NE did not agree with. 4.7.2.5.3.3.4. The use of these 'empirically derived' nocturnal activity rates has been discussed in detail during the examination processes for both the Hornsea Project 3 and Norfolk Vanguard projects. During these processes, NE has noted concerns regarding the 			

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	<p>use of these 'empirically derived' rates as there is inconsistency in the numbers that are being calculated and presented from the various tagging studies and queries regarding whether comparing activity levels derived from a snapshot middle of the day at sea survey to % relative activity levels derived from tagging studies where activity has been calculated for the whole day relative to the whole night is valid.</p> <ul style="list-style-type: none"> 4.7.2.5.3.3.5. Therefore, given the uncertainty as well as variability in the data on activity levels (both during the daytime and during night), NE's position remains that NE currently do not have any agreed 'empirically derived' nocturnal activity factors that can be used with the Band model. NE recognise from recent evidence presented e.g. by MacArthur Green (2015a) that nocturnal activity levels for some species may be lower than the levels that equate to the nocturnal activity factors currently used in CRM, however NE also note that there is uncertainty about the empirical activity levels and uncertainty about how these might translate into nocturnal factors applicable to the Band model. 4.7.2.5.3.3.6. Therefore, NE advises that collision risk outputs covering a range of nocturnal activity factors are considered to account for the uncertainty/variability (in the same way as has been recommended for bird densities, avoidance rates and flight heights). The suggested range of 			

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	<p>nocturnal flight activities to be considered within the Band model CRM are:</p> <ul style="list-style-type: none"> a. Gannet: 1-2 (equating to 0-25 % nocturnal activity) b. Kittiwake: 2-3 (equating to 25-50 % nocturnal activity) c. Large gulls: 2-3 (equating to 25-50 % nocturnal activity) (as has been used by the Applicant in the stochastic CRM and that where uncertainty in nocturnal activity has been considered). <ul style="list-style-type: none"> • 12.6.2.3: Collision risk: As highlighted in our main comments regarding CRM, Natural England has a number of queries/areas of uncertainty where it would welcome further clarification from SPR regarding the approach taken in order to reach conclusions around the applicability of the CRM outputs presented. However, we consider that the use of median bird densities in the CRM is not appropriate and advise that the mean densities are used for the final submission. We note that the use of the median values means that lower monthly densities of birds are used and hence the predicted CRM results will be lower than if the mean densities are used. • Section 12.5.1 and Table 12.10 – existing environment, key species: NE welcome that the full breeding season as defined in Furness (2015) (i.e. April-August) has been applied for the attribution of potential impacts to relevant populations of lesser black-backed gull (LBBG). 			

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	<p>However, NE note that from Table 12.10 there is then overlap of this with the autumn migration (considered to be August-October) and spring migration (March-April) – it is unclear how these overlapping months been treated in the attribution of potential impacts. NE would suggest that where the breeding season is modified from the migration free breeding season given in Furness (2015) that the non-breeding season period definitions are adjusted accordingly. So, in the case of LBBG if the full breeding season (Apr-Aug) in Furness (2015) is the most appropriate then the autumn migration period should be adjusted to Sept-Oct and the spring migration period adjusted to March.</p> <ul style="list-style-type: none"> 4.7.2.5.1. Lack of consideration of confidence intervals in bird abundance data for displacement assessments – NE require that the variability (uncertainty) in the underlying population estimates (i.e. through consideration of appropriately calculated upper and lower confidence intervals) is considered in the displacement assessments. Currently the assessments only consider the mean peak seasonal abundances. Therefore, NE advise that the upper and lower 95 % confidence intervals around the abundance/densities are considered in the displacement assessments in the final submission. 4.7.2.5.2.1. NE does not consider the 60-80 % displacement and 1-5 % mortality rate used by the 			

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	<p>Applicant to be appropriate for assessing disturbance and displacement impacts to RTD from offshore wind farms. NE note that this does not follow SNCB guidance (SNCBs 2017).</p> <ul style="list-style-type: none"> 12.6.1.1.1 – export cable installation, RTD construction displacement: NE note that definitive mortality rates associated with displacement for seabirds, including RTD are not known and therefore NE advise consideration of a range of mortality rates are used in assessments (as per operational disturbance and displacement advice). Therefore, as with operational disturbance and displacement NE advise that a range of mortality rates of 1-10 % are used for RTD assessments rather than the figure of 1-5 % as used by the Applicant. NE also note that under Table 12.13 for red throated diver the rationale is “For the offshore export cable corridor only as this overlaps with the Outer Thames Estuary SPA for which red-throated diver is a qualifying species”. Not considering potential disturbance and displacement effects from the array itself during construction and operation is serious omission. 12.6.1.1.2 & 12.6.1.1.3 – razorbill & guillemot construction displacement: NE note that the assessments of construction disturbance/ displacement impacts for EA2 for both razorbill and guillemot assess impacts for each individual season separately. However, the seasonal 			

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	<p>impacts should be summed to give an overall annual predicted impact.</p> <ul style="list-style-type: none"> 12.6.2.1.1 – RTD displacement: NE does not consider the 60-80 % displacement and 1-5 % mortality rate used by the Applicant to be appropriate for assessing disturbance and displacement impacts to RTD from offshore wind farms. NE note that this does not follow SNCB guidance (SNCBs 2017). Based on the available evidence, NE currently considers that there is no clear justification to change our current advice. Therefore, NE continue to advise that assessments of operational disturbance and displacement for RTD for offshore wind farm assessments are based on a constant displacement rate across the offshore wind farm site and a 4 km buffer and suggest that a range of displacement rates up to 100 % and a mortality rate of up to 10% are considered. Table 12.4 - NE would question whether the red throated diver density data has been assigned to the correct season, as there are high numbers in the breeding season. 12.6.2.1.2 – gannet displacement: Whilst the Applicant has calculated that 1 gannet would be at risk of dying in the breeding season under the Applicant's scenarios of 60-80 % displacement and 0-1 % mortality, we note that the PEIR is not based on the full 24 months of data and that the numbers will likely change with inclusion of the full 			

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	<p>data set. Therefore, we advise that the Applicant revisits the decision to not include a displacement matrix for the breeding season once the full dataset is analysed. However, NE welcome that the Applicant has included the breeding season predictions in the year round total figure.</p> <ul style="list-style-type: none"> 12.6.1.1.1 – export cable installation, RTD construction displacement: NE agree that for assessing red-throated diver (RTD) disturbance/displacement impacts from cable laying assuming 100 % displacement out to 2 km is reasonable. NE's understanding of what has been undertaken in the assessment is that 100 % of the birds present are displaced from a 2 km buffer surrounding each cable laying vessel and that it is assumed that both of the cable laying vessels are effectively stationary all winter. It is then assumed that the birds will return to the area once the vessels have left. If NE's understanding is correct then we consider this to be a precautionary approach. NE understand that the Applicant's stochastic model has not been subject to any QA or testing by independent authorities, is not publicly available and as such cannot be considered to be transparent. In contrast, the MSS stochastic model has been subject to a project steering group (which included representation from NE) and the model documents (Shiny App, user guide and full report) are available in the public domain and project outputs can therefore be replicated or 			

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	checked. Therefore, we request going forward that any collision risk assessments present both the Marine Scotland Science Stochastic Collision Risk Model and the Band model (or non-stochastic/deterministic version) outputs using the central values for the various variables (i.e. mean bird density, maximum likelihood flight height distribution from the generic Johnston et al. 2014 data, the SNCB recommended avoidance rates, the currently advised nocturnal activity factors or rates of 2 or 25 % for gannet and 3 or 50 % for kittiwake and large gulls) in line with other current OWF applications. If the MSS stochastic model cannot be used, then we advise that multiple tables of Band/deterministic model outputs are presented where the Applicant varies each parameter in turn using the Band (2012) model, and not all of them at once.			
	<p>PEIR Impacts</p> <ul style="list-style-type: none"> The RSPB notes that the design parameters for the projects were changed following completion of the collision risk modelling (paragraph 21, p.10). For East Anglia TWO this has increased the number of turbines "...from 67 to 75 for the 12MW scenario, and from 53 to 60 for the 15MW scenario." This represents a 10% increase in turbines at 12MW and 11% at 15MW. Given this change any conclusions presented in the PEIR are not based on the worst-case scenario and should be considered under-precautionary until 	RSPB; NE; Eastern IFCA	16	<p>The offshore ornithology assessments have been revised based on the finalised wind turbine scenarios as agreed for the ES (see Table 12.1 in Chapter 12 Offshore Ornithology of the ES).</p> <p>The comment relating to paragraph 80 of Chapter 12 offshore Ornithology of the ES is noted. The text at the end of section 12.5.3 of Chapter 12 Offshore Ornithology of the ES is not intended to suggest that addressing climate change justifies the consent of projects that may have significant adverse effects on ornithological receptors. As stated, the ecological impact assessment is carried out against a background of declining baseline</p>

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	<p>such time as revised assessments have been undertaken.</p> <ul style="list-style-type: none"> The RSPB is unable to agree at this stage that no impacts greater than minor significance will occur to ornithological interests as a result of offshore elements of the project (paragraph 342, p.157). Our concerns relate principally to collision risk to gannet and kittiwake, particularly in relation to the Flamborough and Filey Coast SPA (FFC SPA), lesser black-backed gull of the Alde-Ore Estuary SPA, great black-backed gull and to displacement of red-throated diver (including those of the Greater Wash SPA). Paragraph 80 (p.33) provides a suitable summary of the pressures facing seabird colonies and the "...the conclusion must be that with the probable exception of gannet, numbers of almost all other seabird species in the UK North Sea region will most likely be on a downward trend over the next few decades, due to population declines, redistributions or a combination of both." Paragraph 78 (p.32) indicates the uncertainty regarding trends in gannet populations with the most recent study suggesting a potential slowdown in population growth. This provides a suitable context for assessing the impacts that the two windfarm projects, alone and in-combination, could have on seabird populations during their lifetime. Any projects or activities that would impact on the conservation objectives for sites where the focal species occur, either directly or by 			<p>populations of a number of receptor species. Where a receptor species is declining, the assessment takes into account whether a given impact is likely to exacerbate a decline in the relevant reference population and prevent a receptor species from recovery should environmental conditions become more favourable. No change has been made to the text.</p> <p>The assessment has been reviewed. In relation to red-throated diver in the export cable corridor, data from 2018 surveys of the Outer Thames Estuary SPA, commissioned by Natural England has been used (Irwin et al. 2019). The conclusion of minor adverse significance for both assessments (displacement from the project alone during construction and operation) is considered to be robust and is maintained</p> <p>Concerns around the assessment of impacts on gannet, kittiwake and lesser black-backed gull are noted are responses are provided in the "PEIR Methodology" section of this table.</p> <p>The ES assessment for the site alone considers 100% displacement from an operational windfarm and 4km buffer, as requested by NE, and for the cumulative assessment 90-100% displacement.</p> <p>Noted regarding NE's understanding of the approach taken by EA2.</p>

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	<p>limiting the ability of a population to recover from identified declines, should not be consented in accordance with the Habitats Regulations. Whilst acknowledged in paragraph 81 (p.33), the overriding principle seems to be to manage climate change and this will resolve issues for seabirds. There are multiple ways by which climate change could be addressed and this does not present sound justification for consenting projects that may be inappropriately sited and which could exacerbate declines beyond a point which seabird populations can recover.</p> <ul style="list-style-type: none"> Concerns are principally around the assessment of impacts on red-throated diver (including those of the Greater Wash SPA during construction) and relate to both the methods used in the assessment and the significance of potential impacts. We do not agree that displacement of this species can be considered to result in impacts of minor adverse significance. These impacts should be regarded as of moderate adverse significance. Concerns around the assessment of impacts on gannet, kittiwake, and lesser black-backed gull and relate to both the methods used in the assessment and the significance of potential impacts. Further consideration needs to be given to the impact of sandwave clearance, cable installation and protection on the supporting habitat sandbank features for the Outer Thames Estuary Special 			Noted regarding impacts on the Outer Thames Estuary and the Greater Wash SPA. Advice has been sought from NE on the approach to the assessment of impact on the Outer Thames Estuary SPA.

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	<p>Protection Area with respect to the fish prey populations of red throated diver and common tern.</p> <ul style="list-style-type: none"> NE notes the evidence presented by the Applicant on RTD displacement distances and displacement rates in the PEIR Chapter. However, NE note that there are other studies that have been undertaken that have not been considered by the Applicant. Section 4.7.2.5.2.5. With regard to the displacement rates, NE are aware of seven studies that report the percentage of RTDs displaced within the footprint of offshore wind farms. The displacement rates from these studies range from 73 % at Thanet (Percival, 2013) to a worse-case scenario of 125 % at Lincs (Webb et al. 2017). Of these, four studies have a survey area of 4km or greater and are therefore considered more robust to analysis issues or non-windfarm driven changes in numbers. 4.7.2.5.2.6. Very few studies have estimated displacement rates within the buffer zones, Percival (2009) reports a displacement rate of 63 % at 2-3 km at Kentish Flats, while Webb et al. (2017) report a rate of 55-96% (best and worse-case scenarios) and 34-75 % reduction at 7-8 km at Lincs and LID. While, as summarised by the Applicant, other studies found no evidence of displacement within the buffers (e.g. Percival 2013 at Thanet and Percival 2014 further analysis/data at Kentish Flats), however, as noted Kentish Flats and Thanet are studies NE have 			

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	<p>lower confidence in due to restricted survey areas.</p> <ul style="list-style-type: none"> 4.7.2.5.3.2.1. NE notes that the method that has previously been used in offshore wind farm assessments to estimate design-based bird density from a grid of images (as have been collected for EA2) has been to calculate mean bird density from the images (i.e. number of birds counted / number of images). Bootstrapping has typically then been applied to provide variance estimates and confidence limits (e.g. as was done at EA1). Our understanding of the approach taken by EA2 from Section 4.2 of Appendix 12.1 (paragraphs 15 – 17) is that the Applicant has: <ul style="list-style-type: none"> a. Calculated monthly estimates in this way and averaged these to feed mean monthly densities into the displacement assessment (which NE agree with); b. Then also pooled all resampled estimates from data pertaining to any given month; c. Used all of these estimates for stochastic CRMs; d. Used the median of these estimates for CRMs not incorporating stochasticity. Outer Thames Estuary Special Protection Area (SPA) Impact on designated features Eastern IFCA recognise that the Applicant has acknowledged that there is potential for disturbance and displacement of non-breeding Red-throated divers resulting from the presence 			

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	<p>of up to two cable laying vessels installing the export cable in the Outer Thames Estuary SPA. The site was designated for Annex 1 species Red-throated diver as the sole feature (NE and JNCC 2010; JNCC 2011c) and an estimated 6,466 Red-throated divers wintered in the SPA from 1989-2006/07), but an aerial survey in February 2013 counted 14,161 Red-throated divers within the SPA boundary, suggesting that numbers have increased and the population is in favourable conservation status (Goodship et al. 2015). The relevant conservation objective for the Outer Thames Estuary SPA is “subject to natural change, maintain or enhance the Red-throated diver population and its supporting habitats in favourable condition” (JNCC and NE 2013). Given the speed that operational cable routing vessels will be travelling within the SPA (300m/hr.) coupled with the likelihood that any displaced individuals will vacate to an adjacent area of the SPA, the low magnitude of effect and low sensitivity of the receptor, the PEIR predicts that the impact of the cable corridor will be of negligible significance for Red-throated diver, surmising that there will be no adverse effect on the integrity of Outer Thames Estuary SPA as a result of the proposed East Anglia TWO project. Eastern IFCA consider that despite the potential for disturbance to Red- throated divers, the evidence provided supports that the project is</p>			

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	<p>unlikely to result in significant impacts on the Red-throated diver population within the Outer Thames Estuary SPA.</p> <ul style="list-style-type: none"> The Greater Wash Special Protection Area (SPA) The proposed East Anglia TWO project is located approximately 35km from the Greater Wash SPA at its closest point, and the offshore cable corridor does not cross any part of the SPA. The East Anglia TWO site is also beyond the range at which any construction or operation activities could affect Red-throated divers within the SPA. Consequently, the potential impact would arise with birds passing through the windfarm on migration to and from the SPA. The features of this SPA for which assessment of potential effects due to the proposed East Anglia TWO project are considered are non-breeding Red-throated divers, and little gulls whilst on migration and while present in winter, both of which are sensitive to disturbance due to vessel movements, windfarm construction and windfarm operation. The PEIR outlined that impacts on both species during migration are considered to be negligible, further SPA as a result of East Anglia TWO project. Eastern IFCA consider that although the potential for disturbance to migration through barrier and collision in the wind farm array is a potential risk to both the Red-throated diver and Little gull populations, the evidence provided in the PEIR supports that the 			

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	project is unlikely to result in significant impacts within the Greater Wash SPA.			
	<p>PEIR Cumulative Assessment</p> <ul style="list-style-type: none"> Concerns are principally around the assessment of impacts on red-throated diver, guillemot and razorbill and relate to both the methods used in the assessment and the significance of potential impacts. We do not agree that displacement of these species can be considered to result in impacts of minor adverse significance. These impacts should be regarded as of moderate adverse significance. The assessment of displacement for guillemot and razorbill only considers mortality of 1%, rather than up to 10% as recommended. This, coupled with a failure to present figures for the increase on background mortality (it is only stated that increases are less than 1%), means that we are unable to agree that impacts are of no greater than minor adverse significance. Red-throated Diver (p.118) Comments as per red-throated diver displacement above. Paragraph 274 (p.120) highlights that final project designs are “likely” to have a reduced consented impact than being considered for the worst case. This is an acceptable point for windfarms where the DCO has been amended and therefore there 	MMO, RSPB; NE	26	<p>The assessments on red-throated diver, guillemot and razorbill have been reviewed. Detailed reviews have been carried out of available evidence on the effects of displacement on mortality rates of red-throated diver and auks. These reviews acknowledge a dearth of empirical information but make recommendations based on the ecology of each species, evidence of changes in mortality rates in other bird species in response to displacement, and expert judgement. Assessments based on the recommendations of these reviews, which are still considered to be precautionary in nature, conclude minor adverse effects.</p> <p>Assessments have been revised to consider a range of displacement of 30-70%, and mortality of displaced individuals from 1-10%.</p> <p>For the cumulative assessment, using a range of mortality of 1–10% for displaced birds and different reference populations predicts changes in population mortality rates which are likely to be undetectable at the lower end and may be detectable at the upper end of the range. The assessment highlights the sources of precaution in the cumulative estimate and refers to a detailed review of available evidence (which it is acknowledged is limited for the effects of displacement</p>

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	<p>is legal certainty regarding the reduction, but where windfarms still have their original DCOs, it is not appropriate to do anything less than assess the full extent of those DCOs when considering in-combination/cumulative effects.</p> <ul style="list-style-type: none"> Concerns are principally around the assessment of impacts on gannet, kittiwake, lesser black-backed gull and great black-backed gull and relate to both the methods used in the assessment and the significance of potential impacts. We do not agree that cumulative collision risk to these species can be considered to be of minor adverse significance. These impacts should be regarded as of moderate adverse significance. The RSPB notes paragraph 293 (p.136) which states "...that all of the windfarms identified for inclusion in the CIA in Table 12.35 have the potential to contribute to a cumulative effect." We support this approach and request that this has been consistently applied throughout the assessment process. It is stated that many of the collision estimates for other windfarms are based on higher numbers of turbines than were actually installed – based on a method of updating collision estimates presented by EATL (2016) this is stated to overestimate mortality by 15% for gannets, 15% for kittiwakes, 35% for lesser black-backed gull and 30% for great black-backed gull. This is an acceptable point for windfarms where the DCO has been amended and therefore there is legal certainty 			<p>on auks and other seabirds, so studies of other avian taxa are considered). Based on this review and expert judgement a realistic and still precautionary recommendation is made for a combination of 70% displacement and 1% mortality for razorbill and guillemot. On this basis the assessment of cumulative displacement indicates a negligible impact.</p> <p>As above, the cumulative assessments of displacement for red-throated diver have been based on 90-100% displacement from the offshore wind farm site and a 4km buffer and 1-10% mortality.</p> <p>For the cumulative assessment, using a range of mortality of 1–10% for displaced birds and different reference populations predicts changes in population mortality rates which are likely to be undetectable at the lower end and may be detectable at the upper end of the range. The assessment highlights the sources of precaution in the cumulative estimate.</p> <p>A review of available evidence is presented (which it is acknowledged is limited for the effects of displacement on red-throated diver and other seabirds, so studies of other avian taxa are considered). Based on this review and expert judgement a realistic and still precautionary recommendation is made for a combination of 90% displacement and 1% mortality for red-throated divers. On this basis the assessment of cumulative displacement indicates a minor adverse impact.</p>

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	<p>regarding the reduction, but where windfarms still have their original DCOs, it is not appropriate to do anything less than assess the full extent of those DCOs when considering in-combination/cumulative effects. (paragraph 297, p.138 – gannet; paragraph 303, p.143 – kittiwake; paragraph 316, p.147 – lesser black-backed gull).</p> <ul style="list-style-type: none"> We do not accept the arguments for including compensatory density dependence in the PVAs for kittiwake put forward in paragraphs 310 and 311 (pp.143-144) of the PEIR. The reasons for this are outlined in Green et al. (2016) and the subsequent BTO review (Cook and Robinson, 2015), and are not that density dependence does not exist, but rather that we do not have the means to accurately quantify the strength and form of it in a biologically meaningful way in order to incorporate it into PVA. Whilst we accept that density dependence is likely to exist in seabird populations, precise species and colony specific knowledge of its size and shape are needed to correctly parameterise the population models. This is important to acknowledge because density dependence is not always compensatory, but can also be depensatory, slowing the rate of population growth at lower population densities. In other words, a population decline arising from an offshore wind farm could have larger consequences on the population than are predicted by the compensatory density dependent or even density independent models. Horswill and 			<p>Where an operational windfarm has been built out to less than the maximum number of wind turbines in the consented design envelope it is considered appropriate to revise the likely impacts, to avoid over-precaution in cumulative assessment.</p> <p>Appendix 12.3 Supplementary Information for the Cumulative Assessment of the ES provides details of the wind turbine parameters used in the cumulative assessment which are based on the DCO or Non-Material Change Applications of the respective projects. Additionally, a comparison of the estimated collision mortalities, if the assessment was conducted based on the 'as-built' wind turbine numbers, has been provided in this appendix.</p> <p>Relating to the comment regarding paragraph 293 of Chapter 12 Offshore Ornithology of the ES, this approach has been applied throughout unless the BDMPS region for a particular species does not include all windfarms listed (e.g. the southern North Sea for red-throated diver).</p> <p>The Applicant welcomes the RSPB's agreement that density dependence is likely to exist and consider that the approach to including this in the PVA models (exploration of values and comparison with available trends) is appropriate given the challenges of estimating this empirically. It is acknowledged that density</p>

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	<p>Robinson (2015) identified depensation occurring in three gull species (black- legged kittiwake, black-headed gull and herring gull). As such it would be very wrong to simply assume that density independent outputs are “highly precautionary”, rather that they are the most sensible to use for assessment.</p> <ul style="list-style-type: none"> Paragraph 310 (pp.143-144) discusses the changes in the UK kittiwake population over three 15-year periods and use this as evidence that a decline of up to nearly 11% due to windfarm mortality over 25 years would be undetectable against this level of natural change. JNCC (2018a) discusses the rapid decline in the UK kittiwake population observed since the early 1990s and link this to declining productivity and adult survival, with declines in sandeel prey and the effects of climate change on sea surface temperatures noted as likely contributory factors. Frederiksen et al. (2004) also demonstrated the vulnerability of kittiwake populations to human activities through a study based on the Isle of May. Their population modelling showed that this population was unlikely to increase should the local sandeel fishery remain active and would be likely to decline further if sea surface temperature also increased, due to effects on both productivity and adult survival. Given this context of continued declines in the UK population since the early 1990s and the effect of anthropogenic impacts on adult survival and productivity, we strongly 			<p>dependence is not always compensatory, however consider this to be a theoretical point that is not particularly relevant to the current situation. This is because depensation occurs in small populations due to factors such as increased predation and reduced productivity due to difficulties in finding mates. The populations of interest are not small, and therefore the overwhelmingly more likely situation is that these will be subject to compensation not depensation.</p> <p>Notwithstanding the comments of detail on the kittiwake PVA, it is considered that the comparisons presented with the outputs of the model, in terms of the effects of additional mortality on population growth rates are robust.</p> <p>In the context of declines in UK kittiwake populations, mortality from offshore windfarms is considered to be small compared to the major drivers of population decline as described by JNCC (2018a).</p> <p>The Applicant is considering the comments relating to the outputs of the density independent version of the model with a view to either updating the PVA (if necessary) or providing further discussion on the use of the existing models.</p> <p>The Applicant welcomes the RSPB's agreement that density dependence is likely to exist and consider that the approach to including this in the PVA models (exploration of values and comparison with available</p>

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	<p>disagree with the Applicant's assertion that declines of the level predicted by the PVA due to offshore windfarm mortality alone would be undetectable against these background changes. Rather, we consider that this could add significantly to the multiple stressors affecting this population and reduce the likelihood of population recovery.</p> <ul style="list-style-type: none"> RSPB welcomes the inclusion of the outputs of the density independent version of the model alongside the density dependent model, our concerns regarding more recent changes to demographic rates may apply. We also recommend that these outputs be presented in the form of counterfactuals of population size. These are a robust and informative metric which indicate the percentage difference between the population with or without additional mortality at the end of the lifetime of the wind farm. Do not accept the arguments for including compensatory density dependence in the PVAs for great black-backed gull put forward in paragraphs 326 and 327 (p.152) of the PEIR. The reasons for this are outlined in Green et al. (2016) and the subsequent BTO review (Cook and Robinson, 2015), and are not that density dependence does not exist, but rather that we do not have the means to accurately quantify the strength and form of it in a biologically meaningful way in order to incorporate it into PVA. Whilst we accept that density dependence is likely to exist in 			<p>trends) is appropriate given the challenges of estimating this empirically. It is acknowledged that density dependence is not always compensatory, however consider this to be a theoretical point that is not particularly relevant to the current situation. This is because depensation occurs in small populations due to factors such as increased predation and reduced productivity due to difficulties in finding mates. The populations of interest are not small, and therefore the overwhelmingly more likely situation is that these will be subject to compensation not depensation.</p> <p>The cumulative impact assessments (CIAs) have been updated with the latest available figures for Norfolk Vanguard, Hornsea 3, Thanet Extension, East Anglia TWO / East Anglia ONE North and Norfolk Boreas (EIA or DCO examination updates) as well as other sites where non-material variations have been consented (e.g. Dogger Bank Creyke Beck, Sofia)</p> <p>The CIAs have also been updated to include Kincardine, Hywind and Moray West offshore windfarms. As such, Table 12.35 in Chapter 12 Offshore Ornithology of the ES has been updated as requested.</p> <p>The cumulative EIA assessment for East Anglia TWO does not include adjustments for other offshore windfarms in relation to nocturnal activity.</p> <p>The ES assessment for the site alone considers 100% displacement from the operational windfarm and 4km buffer and a maximum of 10% mortality, as requested by NE, and for the cumulative assessment 90-100%</p>

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	<p>seabird populations, precise species and colony specific knowledge of its size and shape are needed to correctly parameterise the population models. This is important to acknowledge because density dependence is not always compensatory, but can also be depensatory, slowing the rate of population growth at lower population densities. In other words, a population decline arising from an offshore wind farm could have larger consequences on the population than are predicted by the compensatory density dependent or even density independent models. Horswill and Robinson (2015) identified depensation occurring in three gull species (black-legged kittiwake, black-headed gull and herring gull). As such it would be very wrong to simply assume that density independent outputs are “highly precautionary”, rather that they are the most sensible to use for assessment.</p> <ul style="list-style-type: none"> 4.7.2.5.4.1. Figures used in cumulative and in-combination assessments of displacement and CRM assessments 4.7.2.5.4.1.1. NE welcome that the Applicant has included figures for the Norfolk Vanguard, Hornsea Project 3, Thanet Extension, EA1N and Norfolk Boreas projects in the cumulative displacement assessments. NE assume that the figures presented for the Norfolk Vanguard, Hornsea Project 3 and Thanet Extension have been obtained from the ES submission documents for these projects. NE note that these 			<p>displacement and a maximum of 10% mortality. Based on a detailed review of likely mortality of RTD from displacement, an evidence based maximum mortality rate of 1% is recommended.</p> <p>The assessment includes all offshore windfarms located within the south-west North Sea RTD BDMPS, depending on the available information in assessments for individual sites.</p> <p>A displacement matrix of bird abundance estimates summed from individual windfarms has not been provided due to the variability of information available in assessments for different offshore windfarms included in the cumulative assessment. Instead ranges of mortality for 90-100% displacement and 1-10% mortality of displaced birds.</p> <p>The potential for effects (collision and displacement) on gannets from the Flamborough and Filey Coast SPA will be reviewed and the assessment updated as required.</p> <p>The assessment considers a range of 30-70% displacement and 1-10% mortality of displaced birds. With reference to a detailed review of the potential effects of displacement from offshore windfarms on auks carried out for Norfolk Vanguard, it is acknowledged that that the impact of displacement of razorbills and guillemots by offshore windfarms is uncertain but considered that a precautionary maximum mortality rate is 1%.</p>

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	<p>projects are currently going through the examination phase, and that a number of issues/concerns have been raised with the figures presented for these projects. Therefore, NE advise that in the final submission the Applicant updates the figures in the cumulative assessments for these projects with the final agreed figures following the completion of the examination of these projects.</p> <ul style="list-style-type: none"> 4.7.2.5.4.1.2. NE also note that the figures presented for Norfolk Boreas and EA1N projects have been obtained from the PEIRs for these projects. NE advise that in the final submission the Applicant updates the figures in the cumulative assessments for these projects with the submission figures (timescales allowing). 4.7.2.5.4.1.3. The list of wind farms considered in the cumulative assessments appears to be missing consideration of a number of relevant offshore wind farms (e.g. the Scottish wind farms Kincardine, Hywind and Moray West). 4.7.2.5.4.3.1. The cumulative RTD operational displacement mortality assessment for EA2 has been conducted by the Applicant using the same precautionary magnitudes of displacement (80 %) and mortality (1-5 %) applied to all birds within the 4 km wind farm buffer. As with the assessment of operational displacement for EA2 alone, NE does not consider this to be precautionary and advises that a worst case scenario of 100 % displacement and 10 % mortality is used. 			<p>For cumulative displacement assessments of razorbill and guillemot, Tables 12.37 and 12.39 of Chapter 12 Offshore Ornithology have been updated to include seasonal estimates for Seagreen projects.</p> <p>Cumulative displacement figures have been updated as requested for the windfarms referred to be NE.</p> <p>Cumulative collision risk figures have been updated as requested for the windfarms referred to by NE and include Hywind, Kincardine and Moray West.</p> <p>The cumulative assessment for RTD displacement has been revised to consider all windfarms in the southern North Sea BDMPS (Furness 2015). The available information in assessments for windfarms in this area is variable and they have been divided into four categories: windfarms with no population estimates presented (Dogger Bank sites and Blyth demonstrator), coastal windfarms with low numbers of over-wintering birds reported (Teesside, Humber Gateway and Westernmost Rough), windfarms with sightings made during months considered to belong to the breeding season (Hornsea projects) and windfarms with quantitative information on over-wintering birds by season (Thanet Extension, Norfolk Vanguard, Norfolk Boreas).</p>

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	<ul style="list-style-type: none"> 4.7.2.5.4.3.2. the Applicant has considered that all wind farms at which turbines were installed before or during 2012 form part of the EA2 baseline. Whilst NE agree that as EA2's baseline characterisation surveys didn't start until 2015, any displacement effects from offshore wind farms operating at that time would be picked up in the Applicant's survey data if the effects from the other wind farms cover the EA2 survey area. NE does not agree that these wind farms should be considered part of the baseline. This is because, although some of these wind farms have been operational for over 10 years, the RTD population data pre-date the installations (e.g. that used in Furness 2015 to inform the RTD BDMPS comes from a variety of sources including O'Brien et al. 2008, which draws on aerial survey data from 2001-06 and Wetland Bird Survey and county bird records from 1995-2005). Therefore, the baseline cannot be assumed to include the effects of these wind farms. Therefore, all OWFs located within the south-west North Sea RTD BDMPS in Furness (2015) should be included in the cumulative operational displacement assessment for RTD. 4.7.2.5.4.3.3. NE suggest that a similar approach to that undertaken for the auk cumulative displacement assessments is undertaken for RTD, i.e. to sum the bird abundance estimates for each relevant offshore wind farm and put this total through a displacement matrix, and then assess 			<p>A generic, common-currency based approach using SeaMast data will also be presented, following the method discussed for the Thanet Extension wind farm.</p> <p>The Applicant acknowledges the points raised with respect to the PVA models specified in this comment. Within the timetable of the project application it has not been possible to update these models to address these comments. However, it should be noted that none of these points is considered fundamental to how the models operate (i.e. these do not refer to the way the models function) and as a consequence the outputs remain robust, albeit they are not all presented in the formats NE currently request.</p> <p>Given the high levels of precaution in the collision risk assessment for gannet, in relation to avoidance rate, nocturnal activity, (and for cumulative, reductions in rotor swept area of built versus consented designs); and the likelihood that gannets range so widely that displacement from offshore windfarms would not affect survival rates, considering combined collision risk and displacement mortality, for the project alone and cumulatively, is considered to be over-precautionary.</p> <p>The EIA considers 100% displacement and a maximum of 10% mortality for the project alone assessment, and 90-100% displacement and a maximum of 10% mortality for the cumulative assessment.</p>

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	<p>with a worst case scenario of 100 % displacement and 10 % mortality. The assessment should include all offshore wind farms located within the south-west North Sea RTD BDMPS.</p> <ul style="list-style-type: none"> 4.7.2.5.4.4.1. In addition to the overarching comment above regarding the figures included for the projects currently in examination (Norfolk Vanguard, Hornsea Project Three and Thanet Extension) and those where PEIRs have been submitted (Norfolk Boreas and EA1N), NE suggest that a similar approach to that undertaken for the auk cumulative displacement assessments is undertaken for gannet, i.e. to sum the bird abundance estimates for each relevant offshore wind farm and put this total through a displacement matrix, and then assess with a range of displacement of 60-80% and mortality of 1-10 %. 4.7.2.5.4.4.2. This also applies to the assessment of LSE for in-combination assessment of gannet displacement from the FFC SPA. Therefore, NE advise that once the figures are agreed and the summed figures accurately presented that the assessment and conclusion of the LSE screening for gannet in-combination displacement from FFC SPA is reviewed by the Applicant. 4.7.2.5.4.5.1. In addition to the overarching comment above regarding the figures included for the projects currently in examination (Norfolk Vanguard, Hornsea Project Three and Thanet Extension) and those where PEIRs have been 			<p>As stated in the PEI, the potential for the proposed East Anglia TWO project to contribute to a cumulative displacement effect such as this is considered to be very unlikely. The period when gannet displacement is of potential concern is during autumn migration. At this time, very large numbers of gannets are migrating from breeding colonies in Northern Europe to wintering areas farther south, predominantly off the coast of West Africa. Displacement due to windfarms in the North Sea is considered trivial when compared with the range over which individuals of this species travel.</p> <p>The assessment considers a range of 30-70% displacement and 1-10% mortality of displaced birds. With reference to a detailed review of the potential effects of displacement from offshore windfarms on auks carried out for Norfolk Vanguard, it is acknowledged that that the impact of displacement of razorbills and guillemots by offshore windfarms is uncertain but considered that a precautionary maximum mortality rate is 1%.</p> <p>Tables 12.37 and 12.39 in Chapter 12 Offshore Ornithology of the ES have been updated to include seasonal estimates for Seagreen projects and the additional Scottish windfarms referred to by NE.</p>

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	submitted (Norfolk Boreas and EA1N), the Applicant has considered that a value of 1% mortality when combined with the precautionary 70% displacement rate is considered appropriate for wintering auks. NE notes that definitive mortality rates associated with displacement for seabirds, including auks are not known and therefore NE advise consideration of a range of mortality rates are used in assessments. Whilst NE agrees that the mortality for auks is likely to be at the low end of the range, NE do not agree that using 1% mortality for the cumulative assessment (with 70% displacement) can be considered the worst case scenario. Therefore, our recommendation is a range of mortality rates of 1-10% and displacement rates of 30-70%, with 70% displacement and 10% mortality as the worst case, which is the same as that used by the Applicant in the assessment of auk displacement impacts from the EA2 project alone. Whilst the Applicant has presented the number of birds at risk of displacement for the NE preferred scenarios, its assessment and conclusions regarding the levels of significance of the predicted impacts are based on their preferred rates of 70% displacement and 1% mortality. In the joint SNCB interim advice on displacement (SNCBs 2017) the SNCBs encourage developers to indicate their interpretation of the most likely displacement levels and mortality scenarios by highlighting a range of cells within the matrix, and			<p>CRM has been re-run using the deterministic Band model (Band 2012) and variations in parameters as requested.</p> <p>For species where nocturnal activity was varied, the project alone assessment and the value for East Anglia TWO included in cumulative assessments, were based on the worst case (highest rate) of nocturnal activity (evidence based rates used for gannet and kittiwake as presented in the PEI were not used).</p> <p>Similarly for other windfarms included in the cumulative assessment, adjustments for nocturnal activity, applied in the PEI, have been removed.</p> <p>The updated cumulative collision risk assessment for gannet in the East Anglia TWO EIA predicts 2,607 collisions annually – although several sources of precaution in this estimate are highlighted and the real cumulative total is likely to be lower.</p> <p>This level of additional mortality represents more than 1% increase in the mortality rate of the largest BDMPS and the biogeographical population with connectivity to UK waters. These levels of additional mortality could result in detectable effects at the population level.</p> <p>Notwithstanding the comments of detail on the SOSS gannet PVA, it is considered that the comparisons presented with the outputs of the model, in terms of the</p>

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	<p>simultaneously to provide sufficient empirical/modelling evidence to support any highlighted subset of cells. The SNCBs also advise that a range of displacement values are taken through to the assessment of population impacts and not a single figure. The range of population impacts can then also be presented as a matrix so that those levels of displacement which might exceed a particular level of population impact can be easily identified and evaluated. But if only a single figure can be taken forward, this in most cases should be the more precautionary of the sub-set selected. Therefore, NE advise that in the final submission the cumulative auk assessments also consider the level of predicted impact against baseline mortality for the NE recommended range of rates as well as the Applicant's preferred rate.</p> <ul style="list-style-type: none"> 4.7.2.5.4.5.2. As noted at Norfolk Vanguard, NE note that the EA2 cumulative displacement tables for razorbill and guillemot both do not include any figures for the non-breeding seasons for Seagreen Alpha and Bravo. NE acknowledge that the Environmental Statement (ES) for these projects does not present displacement figures for the non-breeding seasons. However, graphs of monthly abundances of each auk species at each of the project sites across the two survey years are presented in the ES Chapter (Seagreen Wind Energy 2012). These indicate that both guillemot and razorbill were recorded in in all surveys of 			<p>effects of additional mortality on population growth rates are robust.</p> <p>It is also very pertinent that the UK gannet population has grown substantially since the PVA was conducted and, at the last census, was over 30% larger. This increase adds considerable precaution to the conclusions of the original PVA and that this aspect should be given considerable weight when considering if there is a need for the PVA to be updated.</p> <p>The updated cumulative collision risk assessment for predicts 3,160.7 collisions annually – although several sources of precaution in this estimate are highlighted and the real cumulative total is likely to be lower.</p> <p>This level of additional mortality represents more than 1% increase in the mortality rate of the biogeographical population with connectivity to UK waters but not the largest BDMPS and. These levels of additional mortality could result in detectable effects at the population level.</p> <p>Notwithstanding the comments of detail on the kittiwake PVA, it is considered that the comparisons presented with the outputs of the model, in terms of the effects of additional mortality on population growth rates are robust.</p> <p>The Applicant acknowledges the points raised with respect to the kittiwake PVA model. Within the timetable of the project application it has not been possible to update this model to address these comments. However, it should be noted that none of these points is considered fundamental to how the model operates (i.e.</p>

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	<p>both Alpha and Bravo during the study period. Therefore, consideration should be given to this in the cumulative assessments.</p> <ul style="list-style-type: none"> As has been raised during the Norfolk Vanguard and Hornsea 3 examinations, NE does not consider that the PVA models produced for East Anglia 3, Hornsea 2 and Galloper are adequate to inform the assessments for these projects and the same will apply for EA2. This is due to the following reasons: <ul style="list-style-type: none"> a. The stochastic simulations for the East Anglia 3, Hornsea 2, Galloper models and the SOSS gannet model were not run as matched pairs. Where stochastic PVA models are used, it is important to use a 'matched-runs' approach where a metric is derived for each matched pair of baseline and impacted simulations. Stochasticity is included in the population models, but the survival and productivity rates used for a 'pair' of impacted and un-impacted populations at each time step are the same. This means that the effect that is measured with the metric can be more clearly attributed to the impact, than to model uncertainties such as the variability in the demographic parameters that have been sampled or to observation errors. Cook & Robinson (2017) tested the effect of using unmatched compared to matched runs in PVA models and 			<p>these do not refer to the way the model functions) and as a consequence the outputs remain robust, albeit they are not all presented in the formats NE currently request.</p> <p>The updated assessment of cumulative collision mortality for lesser black-backed gulls (576 birds annually) predicts changes in population mortality rates which may be detectable in relation to the largest BDMPS, but not in relation to the annual biogeographic population with connectivity to UK Waters. This estimate includes sources of precaution – including a likely overestimate of nocturnal activity - which are described in the assessment so the actual total is likely to be lower. The assessment concludes a minor adverse impact on this species.</p> <p>The updated assessment of cumulative collision mortality for great black-backed gull (1105 birds annually) predicts changes in population mortality rates which may be detectable in relation to the largest BDMPS and the annual biogeographic population with connectivity to UK Waters. This estimate includes sources of precaution – including a likely overestimate of nocturnal activity - which are described in the assessment so the actual total is likely to be lower. The assessment concludes a minor adverse impact on this species.</p> <p>The Applicant acknowledges the points raised with respect to the great black-backed gull PVA model. Within the timetable of the project application it has not been possible to update this model to address these comments. However, it should be noted that none of</p>

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	<p>demonstrated that the median values of several evaluation metrics (e.g. counterfactual of population size) were greater when a matched runs approach was used compared to when the simulations were unmatched and the uncertainty around the metrics was much greater in the unmatched scenario. Models were run with 1,000 iterations. It may be the case that the median values of the matched versus unmatched runs approach will converge if a larger number of simulations (e.g. 5,000) are used, however the confidence limits are still expected to vary between the two approaches. NE therefore advises that one amendment required to the existing PVA models used by the Applicant is to run the simulations using matched-pairs.</p> <p>b. NE recommends using the counterfactual of population growth rate and the counterfactual of population size to quantify the relative changes in a population in response to anthropogenic impacts. Whilst the EIA models for kittiwake and GBBG present the counterfactual of population size they do not present the output for counterfactual of growth rate. The other models utilised do not present outputs for the required metrics. The change in median growth</p>			<p>these points is considered fundamental to how the model operates (i.e. these do not refer to the way the model functions) and as a consequence the outputs remain robust, albeit they are not all presented in the formats NE currently request.</p> <p>The annual cumulative total of predicted collisions is 1,060 GBBGs of which East Anglia TWO contributes 7.56 birds. At this level it is considered that mitigation measures are not appropriate and would more effectively be applied to windfarms contributing higher proportions of the total.</p>

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	<p>rate metric that the Applicant has used in the kittiwake and gannet FFC SPA in-combination CRM assessments are not the same as the counterfactual of growth rate that NE advises, as it has not been calculated as the growth rate at the end of the duration of the projection and the Applicant has calculated the median growth rate across all years simulated in the model. Clarification is required from the Applicant regarding the lifespan of the EA2 project, as the existing PVAs utilised by the Applicant have been run over 25 years. NE note that more recent projects (e.g. Hornsea Project 3, Norfolk Vanguard and Norfolk Boreas) have lifespans of greater than this (35 years for Hornsea 3 and 30 years for Norfolk Vanguard and Boreas). If the EA2 project is to have a lifespan of greater than 25 years then the counterfactuals of population size and growth rate should be calculated at the end of the impact period (i.e. the lifespan of the EA2 project). If the lifespan of EA2 is to be greater than 25 years then the Applicant's approach whereby PVA models are run over 25 years would lead to an underestimate of impact, as potential impacts occurring in the last years of operation not covered by 25</p>			

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	<p>years will not be accounted for in the models.</p> <p>c. A further issue with deriving the metrics from the existing PVAs is that the Applicant has had to select impact levels from those published for Hornsea 2, Galloper etc., which means that the Applicant can only derive metric values from a pre-populated set of impact levels and cannot calculate a metric that is specific to the impact level that they have calculated for EA2.</p> <ul style="list-style-type: none"> 4.7.2.5.2.3. NE also note that that further PVA models have been run for gannet, kittiwake and guillemot at the FFC SPA as part of the Hornsea 3 Examination. These models have attempted to address the concerns raised by NE regarding the previous FFC SPA PVA models used by both the Hornsea 3 and Norfolk Vanguard Applicants, as they have been run using a matched pairs approach, have been run over 35 years and present outputs for the NE recommended counterfactuals of population growth rate and population size. However, NE has outstanding concerns and clarification requests related to these updated PVAs and their outputs that have been raised during the Hornsea 3 Examination process in our Written Submission for Deadline 3 and in Appendix 2 of this document. These are currently under discussion during the Hornsea Project 3 examination, so NE advise the Applicant 			

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	<p>keeps a watch on the decisions made regarding suitability of these.</p> <ul style="list-style-type: none"> Section 4.7.2.5.4.2.1. Given that NE does not agree with the use of the 'empirical' nocturnal activity rates used by the Applicant in its CRM assessment for EA2 alone for gannet and kittiwake, NE also do not consider it appropriate to adjust the CRM figures for the other OWFs included in the cumulative and in-combination assessments to account for this. Section 4.7.2.5.4.2.2. Additionally, it is not appropriate to simply adjust the CRM figures for the other OWFs included in the cumulative assessments to account for a change in nocturnal activity rate without re-running the CRM, as the modelling calculates the reduction in activity at night through the interaction of nocturnal activity and the latitude of the specific wind farm. Therefore, this is a calculation specific to that wind farm and hence a re-run of the model is required. 12.7.3.1 – RTD cumulative displacement: As noted previously, NE does not agree that 80% displacement and 1-5% mortality are precautionary magnitudes to use for RTD displacement assessments. 12.7.3.3 – razorbill cumulative displacement: We note our advice in our main comments regarding the use of 70% displacement and 1% mortality in the EA2 assessments of razorbill and guillemot cumulative displacement. 			

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	<ul style="list-style-type: none"> Tables 12.37 – auk cumulative displacement: These tables list no figures for razorbill and guillemot in the non-breeding seasons for Seagreen A and Seagreen B. This is not supported by the Environmental Statements for the Seagreen projects. There are also no figures presented for the Kincardine, Hywind or Moray West OWFs. 12.7.4.1 – gannet cumulative CRM: The figures currently presented in the cumulative assessment of 2,615 gannet collisions per annum (Table 12.41 of EA2 PEIR) equates to 3.0% of baseline mortality of the largest BDMPS and 1.16% of baseline mortality of the biogeographic population in Furness 2015), which at this level is a significant impact and therefore requires further consideration. However, we note that the EA2 alone figures are likely to change following inclusion of the remaining 3 months of data and the increase to the turbine numbers. Additionally, the figures for some other the other projects included in the cumulative assessment may change come the final submission and that there are currently relevant OWFs that have not been included. Therefore, the information in the PEIR does not currently allow conclusions to be made by NE regarding the level of cumulative impact. Therefore, the information in the PEIR does not currently allow conclusions to be made regarding the level of cumulative impact. 			

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	<ul style="list-style-type: none"> We note the use of the SOSS gannet Population Viability Analysis (PVA) model outputs (WWT 2012). However, we note the issues around existing PVAs detailed in our main comments regarding the use of matched pairs, counterfactuals of final population size and population growth rate, which have not been considered by the Applicant's reference to the population growth predictions and risk of population declines. We therefore suggest that these are considered by the Applicant to allow robust conclusions to be made regarding the significance of cumulative collision impacts on gannet. 12.7.4.2 – kittiwake cumulative CRM: The figures currently presented in the cumulative assessment of 3,574 kittiwake collisions per annum (Table 12.42 of EA2 PEIR) equates to 2.76% of baseline mortality of the largest BDMPS and 0.45% of baseline mortality of the biogeographic population in Furness 2015), which at this level is a significant impact and therefore requires further consideration. However, we note that the EA2 alone figures are likely to change following inclusion of the remaining 3 months of data and the increases to the turbine numbers. Additionally the figures for some other the other projects included in the cumulative assessment may change come the final submission and that there are currently relevant OWFs that have not been included. 			

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	<p>Therefore, the information in the PEIR does not currently allow no conclusions are to be made by NE regarding the level of cumulative impact. The Applicant makes reference to the PVA model that was developed at EA3 to assess the potential effects of cumulative mortality on the kittiwake BDMPS populations (EATL 2015). NE notes that its position remains that we consider the density independent model to be the most appropriate, but we appreciate that the Applicant has presented the outputs for both. With regard to the PVA model for kittiwake undertaken for East Anglia 3, we note the issues raised around existing PVAs detailed in our main comments regarding the use of matched pairs and counterfactuals of final population size and growth rate which should be calculated at the end of the impact period. We therefore suggest that these are considered by the Applicant before any conclusions can be made regarding the significance of cumulative collision impacts on kittiwake.</p> <ul style="list-style-type: none"> 12.7.4.3 – LBBG cumulative CRM: The figures currently presented in the cumulative assessment of 550 LBBG collisions per annum (Table 12.43 of EA2 PEIR) equates to 2.09% of baseline mortality of the largest BDMPS and 0.51% of baseline mortality of the biogeographic population in Furness (2015). The impact likely lies somewhere between the ranges of these figures. 			

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	<ul style="list-style-type: none"> We suggest that the assessment of the predicted impact also considers the population trend of the LBBG population the assessment is dealing with. However, we note that the EA2 alone figures are likely to change following inclusion of the remaining 3 months of data and the increase to the turbine numbers. Additionally, the figures for some other the other projects included in the cumulative assessment may change come the final submission and that there are currently relevant OWFs that have not been included. The current information in the PEIR does not currently allow any conclusions to be made regarding the level of cumulative impact. 12.7.4.4 – GBBG cumulative CRM: The figures currently presented in the cumulative assessment of 1,030 great black-backed gull (GBBG) collisions per annum (Table 12.44 of EA2 PEIR) equates to 6.09% of baseline mortality of the largest BDMPS and 2.37% of baseline mortality of the biogeographic population in Furness 2015), which at this level is a significant impact and therefore requires further consideration. However, we note that the EA2 alone figures are likely to change following inclusion of the remaining 3 months of data and the increase to the turbine numbers. Additionally the figures for some other the other projects included in the cumulative assessment may change come the final submission and that there are currently relevant OWFs that have not been included. Therefore, the 			

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	<p>information in the PEIR does not currently allow conclusions to be made regarding the level of cumulative impact.</p> <ul style="list-style-type: none"> The Applicant makes reference to the PVA model that was developed at EA3 to assess the potential effects of cumulative mortality on the GBBG BDMPS populations (EATL 2016). We appreciate that the Applicant has presented the outputs from both the density dependent and density independent models. We note the issues raised around existing PVAs detailed in our main comments regarding the use of matched pairs and counterfactuals of final population size and growth rate which should be calculated at the end of the impact period. We therefore suggest that these are considered by the Applicant to allow robust conclusions to be made regarding the significance of cumulative collision impacts on GBBG. 12.7.4.4 – GBBG cumulative CRM: We note that at East Anglia 3 NE concluded that a significant effect at the EIA scale could not be ruled out for GBBG for cumulative collision mortality. As there have been no changes in CRM methodology since East Anglia 3 in terms of avoidance rates etc., and that more collisions are being added to these totals from the additional projects currently under examination (Hornsea 3, Norfolk Vanguard and Thanet Extension) and those currently at PEIR stage (Norfolk Boreas, EA2, EA1N) it is considered unlikely these positions will change. 			

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	Therefore, we would advise that the Applicant gives consideration to mitigation measures which seek to reduce the project's contribution to cumulative/in-combination total impacts.			
	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> 4.7.2.5.2.12. Regarding vessel movements NE welcome the commitment of the Applicant in Section 12.3.3.1 of the EA2 PEIR Chapter 12 to adopting a best-practice protocol for minimising disturbance to RTDs during construction. Where the environmental impacts of a proposed scheme are likely to be unacceptable, the RSPB will object, but the RSPB's preference is to work with renewable energy developers to address and mitigate any impacts. 	NE; RSPB	2	<p>Noted regarding the Applicant's commitment relating to vessel movements.</p> <p>Noted regarding working with the RSPB to address and mitigate any impacts.</p>
	<p>Impacts on offshore birds</p> <ul style="list-style-type: none"> Impact on protected bird species in the Southern North Sea cSAC. The impacts on birds are not minor. Concerned about level of pressure across the site as a whole (in relation to red-throated diver disturbance). Impact on breeding birds. Turbines will be sufficiently close to the coast to potentially damage migrating birds as they drop their flight to land. 	Local Community Members; Offshore Ornithology Expert Topic Group (NE and RSPB)	6	<p>The impacts to offshore birds have been assessed in Chapter 12 Offshore Ornithology of the ES. The assessment has been undertaken using a matrix approach which follows best practice and EIA guidance and has been the subject of extensive consultation with NE and the RSPB. The impact is determined by a receptor's sensitivity and conservation value and the magnitude of the impact. Using this method, after mitigation all impacts have been assessed to have either a minor adverse or negligible effect on offshore birds.</p> <p>Impacts on the red-throated driver have been assessed as no greater than minor adverse during any biological</p>

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				<p>season. Section 12.3.3.1 of Chapter 12 Offshore Ornithology of the ES described the best practice mitigation that will be put into place to reduce the impact to red-throated diver.</p> <p>The potential for connectivity to know breeding bird populations has been considered, however, abundance was low for most species during the breeding season and this suggests very few breeding birds utilise the East Anglia TWO windfarm site. Despite this, the impacts were still assessed and the impacts were determined to be no greater than minor adverse. The In Principle Mitigation Plan outlines the framework for any monitoring of breeding birds which may be required.</p>
	<p>Transboundary Impacts</p> <ul style="list-style-type: none"> In Chapter 12.8 Offshore Ornithology it is stated that at the time of writing no specific information was found in relation to turbine numbers and specifications or ornithology assessments. However, Rijkswaterstaat have recently upgraded the Ecology and Cumulation Framework. This information should be used in the EIA. 	Rijkswaterstaat	1	The Applicant believes the report provided is too high level to allow a meaningful assessment to be conducted.
Commercial Fisheries	<p>Policy</p> <ul style="list-style-type: none"> No reference is currently made to commercial fisheries related to Marine Plan policies and how the proposal addresses them. 	NFFO VisNed	2	Policies relevant to commercial fisheries described in the East Inshore and East Offshore Marine Plans are listed in Table 13.5 of Chapter 13 Commercial Fisheries of the ES.

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	<ul style="list-style-type: none"> The voluntary no pulse trawl closures have changed for 2019 from those presented in the technical commercial fisheries report. 			The voluntary no pulse trawls closures proposed by NFFO/VisNed for 2019 are shown in Figure 13.9 in Chapter 13 Commercial Fisheries of the ES. The closed areas proposed in 2018 off East Anglia have now been revised and replaced with a single area running parallel with the coast, with a western boundary on the 12nm limit and the eastern boundary along a parallel line at 18nm from the coast. This new area overlaps with the section of the offshore cable corridor which is located beyond the 12nm limit up to the edge of the north western section of the East Anglia TWO offshore windfarm site.
	<p>Data</p> <ul style="list-style-type: none"> The VMS data from the Belgian fleet used in the PEIR is outdated (2014). More up-to-date data should be used. The Belgian scientific institute ILVO can provide these data. 	Belgian Producers Organisation Rederscentrale	1	Up to date data on Belgian fishing activity was requested from ILVO in 2018 and again in 2019. ILVO is reviewing the data request but has been unable to provide the data prior to the finalisation of the chapter. As such, the most recent available data (2010- 2014) has been used to inform the assessment.
	<p>PEIR Assessment Methodology</p> <ul style="list-style-type: none"> The methodology does not provide a transparent assessment of compatibility of fishing activities taking place within the vicinity of the wind farms. We consider that under a fixed foundation scenarios and a minimum spacing of 1 km+ is needed for beam trawlers and 2km for seine netters is required for some level of fishing activity would co-exist in the vicinity of the array. The definitions used under sensitivity lack specificity over what constitutes limited, moderate and extensive operational range and dependence 	NFFO VisNed	3	<p>As noted in Table 13.3 in Chapter 13 Commercial Fisheries of the ES, the minimum spacing between wind turbines proposed for the East Anglia TWO project is 800m in-row and 1,200m inter-row.</p> <ul style="list-style-type: none"> The assessment presented in Chapter 13 Commercial Fisheries therefore considers that beam trawling activity will be able to resume to some extent during the operational phase within the East Anglia TWO windfarm site. With regard to seine netting, in recognition of the practicalities of operating this gear

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	<p>upon the number of fishing grounds. This reduces the confidence we can have in the assessment findings.</p> <ul style="list-style-type: none"> • Safety Assessment: Gear Snagging. The safety assessment for snagging gears should follow the same approach as the navigation impact assessment, which uses traffic survey data to provide a probabilistic assessment of risk that relates frequency with severity of occurrence in order to define whether the risk remains within acceptable limits or further mitigation is required. No evidence of the details of such an assessment is currently presented. 			<p>type within wind farm arrays and considering the worst case minimum spacing, the assessment presented in Chapter 13 Commercial Fisheries assumes that that vessels operating seine nets may not be able to resume activity within the operational East Anglia TWO windfarm site.</p> <p>The identification of sensitivity is based on parameters such as the operational range, versatility (i.e. ability to deploy various gears/target various species) and availability of grounds. The evaluation of sensitivity levels using the parameters above is informed by data gathered during consultation with fisheries stakeholders (i.e. vessel specifications, gear used, extent of grounds) as well as fisheries data (landings, Vessel Monitoring System (VMS) data, etc.).</p> <p>For assessment of safety issues, the standard sensitivity/magnitude matrix approach is not considered appropriate. Instead, in this instance, the assessment identifies potential risks.</p> <ul style="list-style-type: none"> ○ As outlined in Section 13.6.1.6 and Section 13.6.2.6 in Chapter 13 Commercial Fisheries of the ES, a number of measures have been proposed to minimise potential for snagging to occur, so that risks remain within acceptable limits. ○ These measures are aimed at ensuring that skippers which intend to fish within the operational site are provided with adequate information to allow them to make an

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				informed judgement of the risks associated with fishing in areas relevant to the East Anglia TWO project.
	<p>PEIR Impacts</p> <ul style="list-style-type: none"> The impact assessment for East Anglia 1 North and East Anglia 2 lists two maps with Dutch beam trawl effort and landing values. Based on the information these maps show it is clear that the data used for this analysis must also comprise data for the brown shrimp fisheries since coastal areas are highlighted that are not trawled by beam- and pulse trawlers targeting fish. Beam trawlers targeting fish don't fish in the Plaice Box. For the so called Eurocutters, the coastal area is not attractive and regulations prevents larger vessels from fishing in this area, as can be seen in the attached maps provided by VisNed there is no pulse fishing within the Plaice Box and we can assure that regular beam trawling also does not take place there. The inshore area of the Plaice Box is of great importance to the brown shrimpers and that is what is reflected in the maps supporting the impact assessment. The brown shrimp fleet of 200+ vessels almost exclusively concentrates within the 12 nautical mile limit from Belgium up to Denmark. The only area where they occasionally fish outside of the 12 NM limit is in the Sylt area in the German Bight. Figure 1 shows a more realistic map based on VMS data of pulse trips by beam trawlers in 2016. The lack 	NFFO VisNed	4	The VMS data of Dutch beam trawling used to inform Chapter 13 Commercial Fisheries of the ES as provided by IMARES. The dataset does not differentiate between flatfish and shrimp beam trawling activity. The extent of the Plaice Box has been included in Figure 13.7 and Figure 13.8 in Chapter 13 Commercial Fisheries of the ES and reference has been made in the chapter to the fact that in this area Dutch beam trawlers do not target fish.

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	<p>of activity north of the Wadden Islands and in the Plaice Box can be noted.</p> <ul style="list-style-type: none"> This strong concentration of vessels not affected by the development of the East Anglia 1 North and East Anglia 2 projects on such a small area, while being considered in the impact assessment, gives a distorted impression of the importance of the project areas to the fleet segment that do get affected. Therefore, the statement in the Commercial Fisheries Chapters that “within the offshore development area, activity occurs at comparatively lower levels” is based on flawed data and should be reconsidered after an adequate analysis has been conducted. For a sound impact assessment of East Anglia 1 North and East Anglia 2 for the affected beam trawl fleet segment, the impact assessment should therefore exclude the brown shrimpers and only focus on beam- and pulse trawlers targeting fish. 			
	<p>PEIR Cumulative Impacts</p> <ul style="list-style-type: none"> Existing plans and projects are not factored into the assessment and are assumed to form part of the baseline. We consider this will disguise impacts already being carried by impacted parts of the fleet as the assessment assumes fishing businesses have perfectly adapted to previous impacts without cost. This results in a “shifting baseline syndrome”, similar to that which is attributed to environmental change as reference 	NFFO VisNed	7	<p>Existing projects are considered part of the existing environment in line with the methodology described in Chapter 5 Environmental Impact Assessment Methodology of the ES which reflects The Planning Inspectorate (2015) Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects.</p> <ul style="list-style-type: none"> Including them in the assessment would represent double counting of their effect. With this in mind, existing plans and projects

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	<p>points change from one project application to the next; there is no “review mirror” in the assessment.</p> <ul style="list-style-type: none"> • The CIA lacks transparent data analysis to support its conclusions. There is also no evidence that proposed fisheries measures associated with the marine protected areas have been included in the CIA. • The PIER notes that the boundaries of MPAs have not been defined in all cases. That is not true for any designated site as designation fixes site boundaries. There are only possible proposals such as tranche 3 MCZs that have yet to be designated where that maybe the case. • The qualitative nature of the sensitivity and magnitude criteria means that the CIA needs to clearly evidence its analysis in order to draw conclusions on the significance of impacts to fleets so that we are able to consider the validity of the conclusions in more detail. In order to address this, we suggest the publication of map outputs that include projects and plans in the CIA overlaid with fishing activity data. We note that this is the only practical way to carry out the assessment and therefore it should not be an onerous request. Figure 2 provides an overview of potential measures that may be incorporated into such an output. • Management measures for many sites in the southern North Sea are now sufficiently progressed to be included in the CIA in our view. 			<p>have not been considered for assessment of potential impacts on commercial fisheries.</p> <p>Various figures have been produced in support of the cumulative assessment (Figure 13.40 to 13.53 in Chapter 13 Commercial Fisheries of the ES). These include information on the distribution of fishing activity for key methods as well as information on the location of proposals for closed areas provided by NFFO/VisNed as part of the Norfolk Vanguard project examination process, and proposals for measures in the North East Farnes Deep MCZ and Swallow Sands MCZ.</p> <ul style="list-style-type: none"> ○ Consideration has been given to proposals for closed areas in UK, Dutch and German waters. ○ It should be noted that in the case of proposals for closed areas in UK waters, with the exception of the closed areas in the Dogger Bank SAC, the current proposals have yet to be agreed by other member states. ○ For the purposes of the cumulative assessment, a conservative approach has been taken and it has been assumed that the current proposals for closed areas will be approved and eventually implemented.

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	<ul style="list-style-type: none"> In response to the Norfolk Vanguard planning application we have provided Brown and May with details on the proposed MPA fisheries management measures in the Southern North Sea, covering the UK, Netherlands and Germany including spatial boundaries, gear types effected and there current status of introduction (these do not include measures for North East Farnes Deep MCZ or Swallow Sands MCZ although these are also available). We have confirmed that the measures are highly unlikely to materially change and are subject now only to high level procedural confirmation. The German measures were submitted by the German government to the Commission on 1st February 2019. The Commission has 3 months to adopt the measures following a completed submission. Following that all that is left is for Germany to implement the measures under delegated act. The expectation therefore is that the measures will be in place in a matter of months rather than years. The Netherlands measures are at a similar stage and are expected to come into force in December 2019. The timing of the introduction of the measures in the UK is less certain due to Brexit but can reasonably be expected to be introduced in the next few years. We therefore consider that these proposals are comprehensive, are at an advanced stage, are highly relevant to the Cumulative Impact Assessment, and can be readily incorporated into the assessment. 			

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	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> Coexistence and fisheries liaison plan which should be developed in agreement with fisheries interests. While we recognise it should be a living document that may be added to, or amended through the course of the project, it should in our view be substantially developed at project application stage and not left as a post consent matter. In addition to the mitigation measures outlined in the commercial fisheries assessment, it should also include other operational management arrangements such as provisions for gear clearance and disruption settlements, navigation corridors and protocols, and retrieval of displaced static gears from safety zones. The following measures associated with minimising and mitigating cable snagging risks and access to fishing grounds should also form part of mitigation provisions: <ul style="list-style-type: none"> The cable burial plan should be consulted on with the fishing industry. Where burial is not achieved on installation, reburial approaches or back filling where appropriate should be considered before electing to apply cable protection measures. Where cable protection is necessary the approach should be considered so that it minimises the potential for snagging risks. The 	NFFO VisNed	18	<p>Noted regarding the coexistence and fisheries liaison plan (FLCP), which is secured in the draft DCO.</p> <p>The operational arrangements highlighted by NFFO/VisNed will be given due consideration in the Fisheries Liaison and Co-Existence Plan (FLCP) which is secured in the draft DCO and that will be produced post-consent.</p> <p>A number of measures have been proposed by the Applicant which are of relevance with regards to minimising potential for snagging risks. These are included as requirements in the draft DCO which must be approved by the MMO prior to construction.</p> <p>Noted.</p>

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	<p>approach should be consulted on with the fishing industry.</p> <ul style="list-style-type: none"> ○ The results of post burial inspection surveys should be communicated to the regulator/fishing industry. ○ The cable burial risk assessment should comprise an assessment of cable exposure risk as well as risk to other marine users. It should be reappraised at appropriate intervals during the operational phase of the project. ○ The cable burial risk assessment should be linked to an appropriate cables survey/monitoring regime. ○ Burial status results from monitoring should be communicated to the fishing industry. ○ Any identified exposed cables should be reported via NTMs and to the Kingfisher information system. ○ Exposed cables should be protected by guard vessel until appropriate remedial measures can be completed. ○ Remedial approaches should consider reburial in the first instance as a way of avoiding the needed for cable protection. Where cable protection is necessary the approach should be considered so that it minimises the potential for snagging risks. The approach should be consulted on with the fishing industry 			

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	<ul style="list-style-type: none"> Post remediation surveys should be undertaken and communicated to the fishing industry to provide best assurance post works that no residual snagging risks remain. NFFO VisNed encourage the use of fisheries community project funding as part of a mitigation strategy and we encourage the marine renewables industry to collaborate to establish the following: <ul style="list-style-type: none"> A scheme for compensating for unattributable gear loss claims as a result of snagging on offshore renewable energy infrastructure or dropped objects. Improving safety provision through considering the support of active “in wheel house” safety warning systems for seabed hazards. 			
	<p>Concerns over impacts on fishermen</p> <ul style="list-style-type: none"> Impacts on fishermen accessing valuable potting grounds and general fishing areas whilst the wind farm is in operation and possibly longer. Work will prohibit drift netting and anchor netting in a large area in the short term and potentially in the long term should the seabed be irrevocably disturbed. Following previous experience on how past and ongoing windfarm projects have been managed, further areas will become un-fishable whilst the 	<p>Local Community Member; Southwold Fisherman's Association; The Harwich Fisherman's Association; Wightman Fishing Company, Belgian</p>	25	<p>The Applicant is committed to working closely with commercial fisheries stakeholders. The appropriate liaison will be undertaken with all relevant fishing interests to ensure they are fully informed of all construction, maintenance and decommissioning activities. In order to ensure and maintain regular communication, a Commercial Fisheries Working Group (CFWG) has been established to cover liaison in respect to East Anglia ONE, East Anglia THREE, East Anglia TWO and East Anglia ONE North.</p> <p>The CFWG aims to identify and develop co-existence strategies during a project's lifecycle. A FLCP will be</p>

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	<p>proposed windfarm is in operation and possibly longer.</p> <ul style="list-style-type: none"> Fishermen (from Southwold Fisherman's Association and Harwich Fisherman's Association) will be compromised in the proposed areas. Concern that the seabed will not be restored in certain areas. Cable crossings to be covered will create additional hazards. Further restriction of fishing areas will cause additional steaming times and costs in fuel as other areas are fished. Concern over additional safety issues with small vessels further out at sea away from home ports. Will be a deterrent for recruitment and the next generation of the fleet. Disturbance to fishing grounds/ sea bed. The same level of income should be guaranteed to the Belgian fishermen, and socio-economic consequences considered. Displacement of vessels due to ongoing development in the area place a strain on fishing resources available. Resurgence in fishing opportunities post-Brexit will be undermined by further limitations caused by the Project. 	Producers Organisation Rederscentrale		<p>produced for the proposed East Anglia TWO project, post-consent. It is expected that the CFWG will also be used to discuss any mitigation necessary for the proposed East Anglia TWO project where appropriate. Consultation with fisheries stakeholders in relation to the East Anglia TWO project is on-going and will continue post-consent. Existing UK legislation does not prevent fishing from occurring in operational windfarms. Considering this and the minimum spacing between wind turbines proposed for the East Anglia TWO project (800m in-row and 1,200m inter-row), it is expected that for the most part fishing would be able to resume within the East Anglia TWO windfarm site during the operational phase.</p> <p>Information on the level of activity of the Belgian fleet, in terms of both fishing effort and value, has been included in Chapter 13 Commercial Fisheries of the ES, based on the latest fisheries statistics and VMS data that has been made available by ILVO.</p> <p>Consultation with Rederscentrale will be on-going and will continue post-consent.</p> <p>The potential impact of loss or restricted access to traditional fishing grounds and associated displacement has been considered for assessment within Chapter 13 Commercial Fisheries for all relevant commercial fisheries receptors, including the local fleet (section 13.6.1.2.3, section 13.6.1.3 section 13.6.2.2.3, and section 13.6.2.3 of Chapter 13 Commercial Fisheries of the ES).</p> <p>The potential for the construction /decommissioning and operational phase of the East Anglia TWO project to</p>

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				result in increased steaming times to fishing grounds has been taken account of in Chapter 13 Commercial Fisheries (see section 13.6.1.4 and section 13.6.2.4 of Chapter 13 Commercial Fisheries of the ES).
	<p>Risks to fishing gear</p> <ul style="list-style-type: none"> Any cable that will become exposed due to dynamic seabed habitats is a serious hazard for the fishermen and their gear. Certain areas of the seabed will definitely become exposed, as has happened with Gabbard and Gunfleet wind farms. 	Eastern IFCA, Southwold Fisherman's Association; The Harwich Fisherman's Association	3	<p>As outlined in section 13.6.1.6 and section 13.6.2.6 in Chapter 13 Commercial Fisheries of the ES, a number of measures have been proposed to minimise snagging potential, so that safety issues for fishing vessels remain within acceptable limits.</p> <p>As noted in section 13.6.2.6 of Chapter 13 Commercial Fisheries of the ES, in order to assess the sea bed status, post-lay and burial inspection surveys will be undertaken after installation of cables. In addition, a cable laying plan will be required as per the draft DCO as discussed in section 13.3.3 of Chapter 13 Commercial Fisheries of the ES.</p> <p>Furthermore, the location of cable protection and crossings would be made available to fishing stakeholders and in line with standard oil and gas industry practice, in instances where cable protection is required, procedures would be carried out to ensure that the protection methods used are compatible with fishing activities where feasible and practical.</p> <p>As described in section 13.3.3 of Chapter 13 Commercial Fisheries of the ES, the required levels of information distribution would be undertaken through the channels of the Kingfisher Information System, Notices to Mariners, along with direct liaison with fishermen and their representatives. This will include mechanisms for appropriate communication with the fishing industry in</p>

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				the event that cables become unburied during the operational phase (i.e. through the FLO and appropriate channels such as the Kingfisher Information Service). Safety issues are addressed in section 13.6.2.6 and section 13.6.1.6 of Chapter 13 Commercial Fisheries of the ES.
	<p>Access to fisheries</p> <ul style="list-style-type: none"> Any issue arising concerning sea users, particularly navigation access must always be communicated in due time to avoid any potential misunderstandings or collisions. Displacement of commercial and recreational fishing activity should be avoided where possible. The Belgian fleet has historical fishing rights for small vessels within the 6-12-miles zone. Outside this zone, there are also larger Belgian beam trawl vessels. Fishing between turbines and near cables always entails a risk to fishermen. Further restriction to fishing areas can incur extra costs in fuel and safety issues. 	<p>Eastern IFCA, Belgian Producers Organisation Rederscentrale, Southwold Fisherman's Association</p>	5	<p>Noted. The potential impact of loss or restricted access to traditional fishing grounds and associated displacement has been considered for assessment within Chapter 13 Commercial Fisheries of the ES for all relevant commercial fisheries receptors, including the local fleet (section 13.6.1.2 section 13.6.1.3, section 13.6.2.2, and section 13.6.2.3 in Chapter 13 Commercial Fisheries of the ES).</p> <p>Noted regarding the presence of Belgian fishing vessels. As outlined in section 13.6.1.6 and section 13.6.2.6 of Chapter 13 Commercial Fisheries of the ES, a number of measures have been proposed to minimise snagging potential, so that safety issues for fishing vessels remain within acceptable limits.</p>
	<p>Cable burial</p> <ul style="list-style-type: none"> In the event of the buried cable becoming exposed due to moving sediments, significant impacts on both the habitats and commercial fisheries is likely. As such, the exact cable route and method of burial should be carefully considered. 	<p>Eastern IFCA</p>	2	<p>This is also a concern of the Applicant and the intention is to bury cable where possible. The worst case scenario of 5% unburied export cable and 10% unburied inter-array and platform link cable is intended for assessment purposes only.</p>

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				<p>Cables will be buried as far as possible using techniques most suitable for the ground conditions in the particular installation area.</p> <p>Where areas of the sea bed in which there is high potential for mobile sediments (e.g. in and around sand waves) are identified, sand wave levelling will be carried out and the cables buried below the lowest level of the sea bed, as far as possible, in order to prevent the cables resurfacing.</p> <p>A Scour Protection and Cable Protection Plan will be submitted post consent. This will incorporate proposals for monitoring offshore cables, including cable protection, during the operational lifetime of the authorised scheme. This includes a risk based approach to the management of unburied or shallow buried cables.</p>
	<p>Pre and Post Construction Surveys</p> <ul style="list-style-type: none"> There will be pre and post construction surveys but because of the uncertain stability of the sea bed what may be satisfactory one day does not give the guarantee it will be safe to fish in the future. 	<p>Southwold Fisherman's Association; Harwich Fisherman's Association</p>	2	<p>As noted in section 13.6.2.6 of Chapter 13 Commercial Fisheries of the ES, in order to assess the sea bed status, post-lay and burial inspection surveys will be undertaken after installation of cables. In addition, a cable laying plan will be required as per the draft DCO as discussed in section 13.3.3 of Chapter 13 Commercial Fisheries of the ES.</p> <p>Furthermore, the location of cable protection and crossings would be made available to fishing stakeholders and in line with standard oil and gas industry practice, in instances where cable protection is</p>

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				<p>required, procedures would be carried out to ensure that the protection methods used are compatible with fishing activities where feasible and practical.</p> <p>As described in section 13.3.3 of Chapter 13 Commercial Fisheries of the ES, the required levels of information distribution would be undertaken through the channels of the Kingfisher Information System, Notices to Mariners, along with direct liaison with fishermen and their representatives. This will include mechanisms for appropriate communication with the fishing industry in the event that cables become unburied during the operational phase (i.e. through the FLO and appropriate channels such as the Kingfisher Information Service).</p>
	<p>Cumulative Impact Concerns</p> <ul style="list-style-type: none"> Fishing activities have been restricted other extremely large areas due to the provision of previous and ongoing sustainable renewable energy schemes. There has been displacement of vessels into other areas and additional strain on fishing resources available. Any new additional wind farm would compound this issue further. Cumulative impact with the Marine Conservation Zones, Harwich Haven Authority new Maintenance Dredge Disposal Site and numerous major cable installations out of the Thames. 	<p>Southwold Fisherman's Association; Harwich Fisherman's Association</p>	8	<p>Consideration has been given in Chapter 13 Commercial Fisheries of the ES to the potential for cumulative impacts to arise taking account of other projects and activities, including current proposals for closure areas to fishing within MPAs (see Section 13.7 in Chapter 13 Commercial Fisheries of the ES). From the information available to date, it is understood that at the time of writing there are not defined proposals for future closed areas to fishing in the Outer Thames Estuary SPA (JNCC, 2019¹). As such, specific reference to this site has not been made in the cumulative assessment. The CIA has taken in to account of all fishing fleets active in areas relevant to the East Anglia TWO project, including the local inshore fleet (Section 13.7 of Chapter 13 Commercial Fisheries of the ES).</p>

¹ JNCC (2019). Outer Thames Estuary SPA. Activities and Management. Available online form: <http://jncc.defra.gov.uk/page-7249> (accessed 28.06.2019)

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	<ul style="list-style-type: none"> Expansion of two existing windfarms. 			
	<p>Mitigation Suggestions</p> <ul style="list-style-type: none"> Compensation for impacts experienced. Ensure concrete mattresses are fully buried and ensure a 50 -100m no go zone is placed around them to ensure nets are not lost. Work with fisherman to communicate the location of concrete mattresses. 	Local Community Member	3	<p>The Applicant is committed to working closely with commercial fisheries stakeholders. The appropriate liaison will be undertaken with all relevant fishing interests to ensure they are fully informed of all construction, maintenance and decommissioning activities. In order to ensure and maintain regular communication, a Commercial Fisheries Working Group (CFWG) has been established to cover liaison in respect to East Anglia ONE, East Anglia THREE, East Anglia TWO and East Anglia ONE North.</p> <p>The CFWG aims to identify and develop co-existence strategies during a project's lifecycle. A fisheries liaison and coexistence plan (FLCP) will be produced for the proposed East Anglia TWO project, post-consent. It is expected that the CFWG will also be used to discuss any mitigation necessary for the proposed East Anglia TWO project where appropriate.</p>
	<p>Communication with fishermen and mariners</p> <ul style="list-style-type: none"> We support the use of advertisement on Kingfisher charts and the promulgation of Notice to Mariners, to minimise disruption to fishing activities. These notices should be carried out continuously, in advance of any scheduled works. Additionally, regular communication should be kept with relevant fisheries managers (Eastern 	Eastern IFCA	2	<p>Noted regarding communication with fishermen</p> <p>Consultation with relevant fisheries stakeholders is on-going and will continue post-consent.</p>

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	IFCA up to 6 nautical miles and the Marine Management Organisation, as well as Defra beyond the Eastern IFCA boundary)			
Shipping and Navigation	<p>Project Design</p> <ul style="list-style-type: none"> The minimum air-draught clearance adopted of 22m above MHWS meets our present standard. This was determined many years ago to enable 97 per cent of all sailing craft in Europe to clear safely and is now under review with indications that it should be increased to perhaps 24m. We advocate minimum spacing of turbine towers to be 900m x 1000m and the pattern to be square or rectangular in regular straight lines with the major axis to be towards the prevailing wind. This 'see-through' layout makes for quickest and safest passage through in most winds and helps avoid helmsman-disorientation. While your proposal of 800m x 1200m is acceptable we would confirm the need for a straight-line layout to include such as platforms and met-masts to be in line with the turbine line. It is important that each wind farm field has straight edges avoiding outlying structures. Fewer, larger, turbine towers with increased spacing are of course safer for passage between than more, smaller ones, closer together but it is important visually that designs are not mixed. Our concern with export cable landfalls is any impact or risk to anchoring of recreational craft. In general, we ask that recognised yacht 	Cruising Association; MCA	8	<p>East Anglia TWO complies with the existing guidance on minimum blade clearance.</p> <p>East Anglia TWO will comply with requirements on layout design contained within MGN 543 as per section 14.3.3 (embedded mitigation) of Chapter 14 Shipping and Navigation of the ES. The impact assessment and modelling consider the worst-case layout of more, closer together structures.</p> <p>East Anglia TWO will undertake an assessment of export cable routes, cable burial and protection post consent as per section 14.3.3 (embedded mitigation) of Chapter 14 Shipping and Navigation of the ES.</p> <p>Noted in reference to the indicative worst case layout.</p> <p>Noted. The final layout and any required justifications will be discussed post consent as per the DCO / DML conditions.</p> <p>The layout and any additional navigational safety and / or SAR requirements will be agreed with the MMO in</p>

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	<p>anchorages are avoided and have no concerns about cables in water depths of greater than 10m since these are rarely used for yacht anchoring. In lesser depths we currently ask that cables are buried 1.5m including any cable protection and leave a smooth seabed with no humps over. This depth is currently under review but will probably not be altered. The Thorpeness area is not a recognised anchorage (despite the area between Thorpeness and Aldeburgh being known as 'The Haven') but emergency anchoring in strong weather could take place almost anywhere. The charted anchorage off Southwold is rarely used if at all by yachts and not a problem to recreational craft.</p> <ul style="list-style-type: none"> We note in section 4.3 (32) of the NRA "...the worst case layout (from a shipping and navigation perspective) has been chosen from layouts currently under consideration for use as input to the modelling process (as described in section 16). The worst case layout from a shipping and navigation perspective. The MCA welcomes the indicative worse case layout in a grid formation with a minimum of two lines of orientation, and other structured all in alignment, as seen in figure 4.2.e is represented by the maximum number of structures covering the maximum area. We also note that the NRA has assessed worst case which includes just one line of orientation. Please be aware at this stage, that MCA can only agree to a single line of orientation where a 			<p>consultation with the MCA post consent as per the DCO / DML conditions.</p> <p>An assessment of export cable routes, cable burial and protection post consent as per section 14.3.3 (embedded mitigation) of Chapter 14 Shipping and Navigation of the ES.</p> <p>East Anglia TWO considers that the effects of disparate construction sites are mitigated, notably through the use of aids to navigation during the entire construction phase. Embedded mitigation is listed in section 14.3.3 of Chapter 14 Shipping and Navigation of the ES.</p>

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	<p>detailed safety justification is provided (as per MGN 543) for both surface navigation and Search and Rescue capability. The NRA itself would not provide that justification but would be used to inform the safety case as well as any results from surveys and other constraints leading to just one line of orientation in the layout design, and the consideration of the impact on SAR with just one line of orientation.</p> <ul style="list-style-type: none"> The turbine layout design will require MCA approval prior to construction to minimise the risks to surface vessels, including rescue boats, and Search and Rescue aircraft operating within the site. As such, MCA will seek to ensure all structures are aligned in straight rows and columns, including any platforms. Any additional navigation safety and/or Search and Rescue requirements, as per MGN 543 Annex 5, will be agreed at the approval stage. Export cable routes, cable burial protection index and cable protections are issues that are yet to be fully developed. However due cognisance needs to address cable burial and protection, particularly close to shore where impacts on navigable water depth may become significant. Any consented cable protection works must ensure existing and future safe navigation is not compromised. The MCA would accept a maximum of 5% reduction in surrounding depth referenced to Chart Datum. Where burial depths are not achieved consultation will need to take place with MCA regarding the 			

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	locations, impact and potential risk mitigation measures. <ul style="list-style-type: none"> MCA would like to see continuous construction which is progressive across the wind farm with no opportunity for two separate areas to be constructed with a gap in the middle. 			
	<p>Policy</p> <ul style="list-style-type: none"> Several thousand UK yachtsmen keep their yachts in EU27 waters, with exact numbers not known. They have been warned that unless these vessels return to the UK within three years of Brexit day they risk losing their UK-paid VAT status and that if they stay in EU27 they will become subject to 'third-country' rules with temporary import status and become subject to EU VAT after 18 months. There is still some confusion and doubt since the final rules will depend on the UK-EU 'settlement agreement' still to be agreed but a very large number of UK yachtsmen will undoubtedly return to UK. The impact of this on recreational sailing and cruising in UK waters is not yet clear. 	Cruising Association	1	Noted.
	<p>PEIR Baseline</p> <ul style="list-style-type: none"> The Cruising Association believes that the baseline estimates for volume of recreational traffic for both sites may be somewhat low, but do not have alternative data to offer: Our current estimate is that no more than 40 per cent of 	Cruising Association	1	Noted, baseline estimates are based on AIS, radar and visual surveys as per the requirements of MGN 543. A total of 42 days data has now been collected including two summer periods (Radar and AIS).

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	<p>recreational craft around the UK generally is fitted with transmitting AIS plus some fitted with receive-only AIS. Those in the study areas will be well equipped, well crewed and on long-distance passages thus a higher proportion is likely to have transmitting AIS, perhaps up to 60<70 percent. However, use of AIS is known to be problematical in yachts, difficult to monitor continuously with a small crew and with very annoying alarms. These factors lead to an unknown proportion of yachts switching off their AIS except in heavily trafficked areas where there are many risks of encounters with other vessels. The Cruising Association confirms that recreational traffic is gradually increasing but have no figures to offer and accept your estimate of 10 per cent.</p>			
	<p>PEIR Impacts</p> <ul style="list-style-type: none"> Concern over potential for changing vessel traffic patterns and cumulative effects (such as with Dutch OWFs). Concern over disruption of traditional route (of Hanson Aggregates Marine Ltd) that are used to transit from licenced areas to discharge ports (e.g. Thames area and near the continent). These are normally very different to established navigation routes (short term AIS analysis will not necessarily recognise these). 	<p>Trinity House; Hanson Aggregates Marine Ltd</p>	<p>2</p>	<p>Transboundary impacts for shipping and navigation receptors include vessels routeing from the UK to the Netherlands, Belgium and Denmark that may be impacted by projects within both UK waters and transboundary waters. Given the international nature of shipping this is covered by the cumulative impact in section 14.7.3 of Chapter 14 Shipping and Navigation of the ES.</p> <p>British Marine Aggregate Producers Association (BMAPA) transit routes are considered within section 14.6.3 of Chapter 14 Shipping and Navigation of the ES</p>

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				and section 8 of the Navigational Risk Assessment (Appendix 14.2 of the ES).
	<p>PEIR Cumulative Impacts</p> <ul style="list-style-type: none"> Almost all yachts in the area will be on long-distance passages with very little local or day-sailing. A high proportion will be strangers to the area, many foreign-flagged and unlikely to have on board local charts with full details of wind farm turbine positions. While the distance between the sites and the shore is generally adequate for traffic north-south it should be noted that tidal streams in the area can be strong and yachts will cross the cable corridors either close to the shore or close to the wind farms. The coast is not hospitable or locations easily identifiable and in inclement weather yachts will undoubtedly transit closer to the wind farms, possibly increasing encounter risk with commercial vessels also sailing north-south and forced to do so by the two projects. Yachts on passage east-west will encounter either project and, in most cases, choose to pass through between the turbines due to the many hours additional sailing time required to avoid them. There are now so many wind farms in the southern North Sea that they present something of an 'obstacle course' to yachts on many passages and cumulative effects are becoming an 	Cruising Association; MCA	3	<p>Noted. The impact on recreational vessels has been assessed in section 14.6.5 of Chapter 14 Shipping and Navigation of the ES. Assessment of encounter risk is presented in section 18.1 of the Navigational Risk Assessments (Appendix 14.2 of the ES) and includes recreational vessels.</p> <p>Minimum spacing and wind turbine alignments mean that small craft, such as recreational vessels, will be able to navigate through the array during the operational phase.</p> <p>Noted regarding assessment of the gaps between the projects assessed against the guidance to ensure compliance. Noted that lighting and marking requirements will be influenced going forward.</p>

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	<p>issue. It should be noted that many yacht harbours are tidal so that additional time or distance can have important impacts on safety in poor weather.</p> <ul style="list-style-type: none"> The NRA addresses that gaps between projects, and the MCA's requirement for sufficient room within the corridor between wind farms for a vessel to deviate up to 20°, as per MGN 543. The East Anglia Two offshore development area, East Anglia One North offshore development area and East Anglia ONE offshore development area create a gap, and the MCA welcomes the assessment of the gap against the guidance to ensure compliance. This will also influence the lighting and marking requirements going forward to be discussed further as the project progresses. 			
	<p>Risk Mitigation</p> <ul style="list-style-type: none"> Potential to use fishing co-operation schemes to track the fishing boats (useful for marine co-ordination if vessels are in distress). We appreciate the embedded mitigation built-in to the proposals but add the following comments: <ul style="list-style-type: none"> In addition to standard IALA marking and lighting requirements, marking of the gaps by buoyage at corners between neighbouring wind farms could be very helpful. We have also been asked by some of our members to suggest that in addition a 	Trinity House Cruising Association; MCA	12	<p>Responses to comments on embedded mitigation:</p> <ul style="list-style-type: none"> Buoyage will be deployed at the request of TH as per section 14.3.3 (embedded mitigation) of Chapter 14 Shipping and Navigation. Lighting and marking will be as per the requirements of TH and MCA as per section 14.3.3 (embedded mitigation) of Chapter 14 Shipping and Navigation. As per embedded mitigations in section 14.3.3 of Chapter 14 Shipping and Navigation, an application for safety zones post consent around structures where construction or major maintenance is being undertaken.

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	<p>horizontal black band round corner towers at HAT level would be useful.</p> <ul style="list-style-type: none"> ○ We agree with the use of 500m safety zones around active RAM construction vessels including moving zones around cable layers and with 50m zones around each completed tower including whether pre-commissioned or operational. ○ We note that up to 74 or so construction and other vessels may be on site at maximum. When such large numbers are likely we ask that the Coastguard be warned and a regular 'all ships' warning is promulgated by marine VHF. ○ We understand that location of operations base or port/landside facilities during construction is not yet decided but would ask that construction and other vessels regularly visiting the sites follow regular publicised routes between base and site. <ul style="list-style-type: none"> • An Emergency Response Cooperation Plan is required to meet the requirements of MGN 543 Annex 5 v2 available on our website. An approved ERCOP will need to be in place prior to construction. The ERCOP is an active operational document and must remain current at all stages of the project including during construction, operations & maintenance and decommissioning. A SAR checklist will be discussed as the project progresses to track all requirements detailed in 			<ul style="list-style-type: none"> • As per embedded mitigations in section 14.3.3 of Chapter 14 Shipping and Navigation a dedicated Marine Coordination Centre will be established to manage on site vessels. <p>Noted, an ERCOP will be produced post consent and agreed with the MMO and MCA as per section 14.3.3 of Chapter 14 Shipping and Navigation of the ES. The SAR checklist will be discussed and agreed with the MCA post consent.</p> <p>Noted regarding section 15 or the NRA.</p> <p>Noted regarding the draft MGN 543 checklist.</p> <p>Noted regarding the process undertaken to comply with MGN 543.</p> <p>A safety zone application would be produced and agreed with the MMO and MCA post consent, noting that the application for safety zones is assumed as embedded mitigation in section 14.3.3 of Chapter 14 Shipping and Navigation of the ES. This may include provision for operational safety zones around manned platforms.</p>

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	<p>MGN 543 Annex 5. The checklist will be adapted to suit East Anglia Two.</p> <ul style="list-style-type: none"> As the development areas carries a significant amount of through traffic, and attention needs to be paid to routing, particularly in heavy weather ensuring shipping can continue to make safe passage without significant large-scale deviations. We see this has been considered in section 15 of the NRA. Appreciate the early opportunity to comment on the draft MGN 543 checklist, and we can discuss the elements further as the project progresses. We are content at this stage with regards to the process you have undertaken in order to comply with MGN 543, and its annexes, and we welcome the work undertaken in order to achieve our requirements. Safety zones during the construction, maintenance and decommissioning phases are supported, however it should be noted that operational safety zones may have a maximum 50m radius from the individual turbines. A detailed justification would be required for a 50m operational safety zone, with significant evidence from the construction phase in addition to the baseline NRA required supporting the case. 			
	<p>PEIR Survey</p> <ul style="list-style-type: none"> We note MCAs previous comment that "an NRA without a current Radar traffic survey cannot be relied upon as AIS has obvious limitations. 	MCA	3	An updated AIS and Radar summer survey was undertaken during August and September 2018. The analysis of this data is presented in section 12.3 of the

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	<p>Although the Radar data may only be outside the 24 month window, the MCA cannot be sure this will not slip further therefore we would appreciate reconsideration of the traffic surveys in line with MGN 543" And the following response for East Anglia TWO: "A Marine traffic survey (AIS and Radar) would be undertaken in August/September 2018. the impact Assessment and NRA will then be submitted as part of the ES". Please can you confirm for this project whether the application will contain current data collected within two years of application submission? The documents received for EA One North include a statement in section 14.4. that "The MCA has subsequently confirmed that the summer 2017 marine traffic survey does not meet the requirements of MGN 543 given the changes to final application date, therefore a second summer marine traffic survey (AIS and Radar) was undertaken in 2018. The impact assessment and NRA presented in this PEIR will therefore be updated using the most recent survey data for the NRA and ES DCO application". Does this also apply to East Anglia Two?</p> <ul style="list-style-type: none"> • MGN 543 Annex 2 Paragraph 6 requires that hydrographic surveys should fulfil the requirements of the International Hydrographic Organisation (IHO) Order 1a standard, with the final data supplied as a digital full density data set, and survey report to the MCA Hydrography 			<p>Navigational Risk Assessment (Appendix 14.2 of the ES) and summarised in section 14.5.2 of Chapter 14 Shipping and Navigation of the ES.</p> <p>Hydrographic surveys are compliant with IHO Order 1a and MCA requirements as per MGN 543.</p> <p>Noted regarding radar data collected during 2018.</p>

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	<p>Manager. This information will need to be submitted, ideally at the ES stage.</p> <ul style="list-style-type: none"> We note that the marine traffic data assessed for this NRA includes Radar data collected during 2018. The MCA would like to ensure that the traffic surveys are undertaken as per MGN 543, so we welcome this update. 			
	<p>Draft Deemed Marine Licence</p> <ul style="list-style-type: none"> Trinity House sent through the draft DCO / DML conditions. 	Trinity House	1	Consultation on the DCO / DML will continue to be undertaken as part of the Statement of Common Ground post consent.
	<p>Aggregate Shipping Mitigation</p> <ul style="list-style-type: none"> To ensure that the offshore works / turbines do not disrupt traditional routes that aggregate companies use to transit from licensed areas to discharge ports, as short term AIS analysis will not necessarily recognise them and it may be helpful to examine this issue so the information is available to feed into both Crown Estate Conflict Checks (through their MARS system / GIS) 	Hanson Aggregates Marine Ltd	1	British Marine Aggregate Producers Association (BMAPA) transit routes are considered within section 8 (existing environment) of Appendix 14.2 Navigational Risk Assessment of the ES.
Civil and Military Aviation and Radar	<p>Project Design</p> <ul style="list-style-type: none"> The boundary turbines, where they are more than 900m apart, must be lit with a single 2000 candela, red aviation light, flashing Morse 'W' in unison with all other turbines so lit. All other turbines must be fitted with a 200 candela, red aviation hazard light, with fixed illumination, visible through 360° for SAR purposes. Further 	MCA; Trinity House Lighthouse Service	3	<p>Embedded mitigation on marking and lighting is shown in Section 15.3.3.2 of Chapter 15 Civil and Military Aviation and Radar.</p> <p>Noted.</p>

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	<p>consultation with the CAA and MCA should be sought by the applicant where additional mitigation may be identified. We would expect consistency with lighting as appropriate between Offshore Windfarms.</p> <ul style="list-style-type: none"> Referring to Schedule 1 Part 3 27. (1) of the draft Development Consent Order: MGN543 Annex 5 para 9.9.3: aviation hazard lighting requirements fall outside of the ANO but the developer will need to request a derogation from the CAA. The CAA's position on offshore windfarm lighting is detailed in CAP764 which includes MCA requirements for SAR. With reference to aviation lighting, Trinity House request that you seek the approval of the CAA for all required aviation lighting to exhibit synchronised red Morse Code "W" light characteristics. 			
	<p>PEIR Impact</p> <ul style="list-style-type: none"> Depending on the exact height of the turbine tip, the potential is for half or all of the application site to be detected by NATS's Cromer radar. It is anticipated that the radar detection of the turbines will lead to substantial "clutter" appearing on Air Traffic Controllers' displays. Accordingly, the anticipated impact is deemed to be unacceptable to NATS's operations and at this time, NATS objects to the application. Notwithstanding the objection however, NATS has been and remains positively engaged with the Applicant (UK) around 	NATS; Ministry of Defence	3	<p>The impact of wind turbines causing permanent interference on civil and military radars is shown in Section 15.6.2.2 of Chapter 15 Civil and Military Aviation and Radar of the ES.</p> <p>Additional mitigation measures in respect to Cromer ATC PSR include:</p> <ul style="list-style-type: none"> Blanking the relevant impacted areas of the East Anglia TWO windfarm site (either at the radar head or in the radar display system) so as to remove the PSR data containing the wind turbine returns from the radar data presented to controllers;

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	<p>the need for and identification of an acceptable mitigation scheme.</p> <ul style="list-style-type: none"> Several of the proposed wind turbines will be in line of site and detectable to the air defence radar located at RAF Trimingham. Wind turbines have been shown to have detrimental effects on the operation of radar. These include the desensitisation of radar in the vicinity of the turbines, and the creation of "false" aircraft returns. The probability of the radar detecting aircraft flying over or in the vicinity of the turbines would be reduced, hence turbine proliferation within a specific locality can result in unacceptable degradation of the radar's operational integrity. This would reduce the RAF's ability to detect and deter aircraft in United Kingdom sovereign airspace, thereby preventing it from effectively performing its primary function of Air Defence of the United Kingdom. Our assessments have determined that, when operational, the proposed wind farm will cause unacceptable and unmanageable interference to the effective operation of this air defence radar. As a result, the MOD objects to this application in its current form. It should be noted that our radar assessments have been completed using the boundary coordinates provided for the maximum extent of the offshore windfarm development area identified in this application. Should further details on the layout and dimensions of the proposal become available further technical and operational 			<ul style="list-style-type: none"> In addition to radar blanking where the blanked area exceeds a certain size (to be determined in consultation with NATS), introducing a Transponder Mandatory Zone (TMZ). A TMZ requires all aircraft that wish to transit the TMZ to be equipped with SSR transponders to enable controllers to track aircraft through what would otherwise be a 'black hole' in primary surveillance cover; and Using alternative PSRs (e.g. Debden and Claxby or the Aveillant Theia infill radar proposed to mitigate the impact on the Trimingham AD PSR) to provide coverage for the provision of ATS in the area of the East Anglia TWO windfarm site. <p>In respect of the Trimingham AD PSR:</p> <ul style="list-style-type: none"> The application of a Non-Auto Initiation Zone (NAIZ) in the TPS-77's lowest beam over the footprint of any wind turbines that would be detected by the PSR (cross refer to Appendix 15.2 Civil and Military Aviation and Radar for more details). A NAIZ has been the most common wind turbine mitigation technique applied to the TPS-77 to date. However, on 24 August 2018, the MoD issued a statement indicating that the TPS-77 NAIZ mitigation had not performed to expectation at flight trials over two offshore windfarms and it is looking to undertake further investigation of TPS-77 mitigation options. Through discussion relating to other SPR projects, the MoD expressed concern if it were to lose AD detection at the edge of RRH Trimingham's cover and the Applicant anticipates that the MoD will have the same sensitivity for East Anglia TWO;

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	<p>assessments can be completed to clarify the impact the development will have upon the MOD radar identified. We will gladly review more detailed plans and mitigation proposals that the applicant may wish to submit to us</p> <ul style="list-style-type: none"> The proposed development will affect military low flying training activities that may be conducted in the area, it will therefore be necessary for the turbine structures to be fitted with appropriate aviation warning lighting to maintain the safety of military aviation. 			<ul style="list-style-type: none"> Installation of a long range Aveillant Theia Holographic Radar™ on the Norfolk coast to provide infill radar cover for inclusion in the MoD AD air picture over the impacted areas of the East Anglia TWO windfarm site, if the application of a NAIZ is not feasible. <p>Noted regarding notifying the MOD of further details on the layout and dimensions of the proposed development.</p> <p>Marking and lighting requirements are set out in Section 15.3.3.2 of Chapter 15 Civil and Military Aviation and Radar of the ES. To satisfy MoD requirements, the wind turbines would be required to be fitted with infra-red lighting in combination with the ANO Article 223 lights. MoD lighting guidance indicates that provided combination infra-red / 2000cd visible red lights are used to light the wind turbines required to be lit under ANO Article 223, this would satisfy the MoD operational requirement.</p>
	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> While a solution has not been identified at this time, through its work with its stakeholders and the Applicant, NATS believes that a solution will be forthcoming in order to address the impact of the proposal and thus mitigate the effect of the turbines. NATS will continue to work on the identification of a suitable mitigation scheme, and once a tangible solution has been identified and 	NATS	1	Noted.

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	agreed with the Applicant, it will submit a further representation.			
Marine Archaeology and Cultural Heritage	PEIR Policy <ul style="list-style-type: none"> Table 16.4 'NPS Guidance for the Historic Environment' to detail paragraph 5.8.22 of the Overarching National Policy Statement for Energy (EN-1, DECC 2011) to highlight the need for appropriate procedures to be in place for the identification and treatment of as yet undiscovered heritage assets with archaeological interest, revealed during the preconstruction survey process and construction. In doing so this will link to the point we have already made, that whilst the primary mitigation approach for heritage assets located offshore will be avoidance through micro-siting or the use of Archaeological Exclusion Zones (AEZs) if anomalies cannot be avoided, they will be subject to further investigations, as standard practice (paragraph 2.6.145 (EN-3, DECC 2011)). 	Historic England	1	Table 16.4 in Chapter 16 Marine Archaeology and Cultural Heritage is now Table 16.3, and has been amended as requested.
	PEIR Baseline <ul style="list-style-type: none"> Paragraph 50 (EA2) which outlines that due to the nature of the archaeological record, it is often the case that information regarding individual assets may be limited. As a consequence, we acknowledge this means the categories and definitions of heritage importance are not a definitive level of importance of an asset, as they 	Historic England	4	<p>Noted regarding the comment relating to paragraph 50 (EA2) in Chapter 16 Marine Archaeology and Cultural Heritage of the ES. This approach is retained for the ES.</p> <p>Noted regarding the findings of the paleogeographic and geotechnical assessments. Further geoarchaeological assessment of geophysical and geotechnical data post-consent will aim to further enhance this understanding.</p>

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	<p>are based on information available to date and that further assessments may result in the amendment of the perceived heritage importance.</p> <ul style="list-style-type: none"> Section 3.2 summarises the findings of the paleogeographic and geotechnical assessments that were carried out, highlighting the units of greatest archaeological potential and the possible features (channels, lagoons, former terrestrial landscapes etc.) that were identified. We accept the detail included concerning the complexity of some of the channel and lagoon deposits, especially within the Brown Bank Formation (e.g. Section 3.2.7 (EA2)), as this clearly highlights the value of this work and how it will add to our understanding of landscape and sea-level changes in this area over time. And that the entire stratigraphy was not identified in any one single study area, with the exact number of units present differing depending on the area. We would however suggest that given the initial results of the Stage 3 geoarchaeological assessment of boreholes and vibrocores for the EA1 Offshore Windfarm project the possible reworked Saalian (Wolstonian) material (initially understood as Brown Bank Formation) should be considered for inclusion within the forthcoming application. The broad line spacing used for the 2010 magnetometer survey may mean that some smaller anomalies may have been missed (Sections 2.4.6). In addition, as no new SSS or 			<p>Reference to the geoarchaeological assessment undertaken for East Anglia ONE has been included in Section 16.5.1 of Chapter 16 Marine Archaeology and Cultural Heritage of the ES and section 1.5.2 of the Outline Written Scheme of Investigation (Offshore) (Document Reference: 8.6). This deposit is difficult to identify using geophysics and the identification and examination of these deposits within East Anglia TWO should form a key objective of the geoarchaeological assessment to be undertaken post-consent.</p> <p>Noted regarding the broad line spacing used for the 2010 magnetometer survey. In Section 1.5.1 of the Outline Written Scheme of Investigation (Offshore) (Document Reference: 8.6) it is specified that objectives to inform the scope of pre-construction marine geophysical survey will be advised by the archaeological contractor following a data review of existing data and that the scope will be consulted on with Historic England.</p> <p>The requirement to submit a final Written Scheme of Investigation for approval with MMO in consultation with Historic England is secured under the requirements of the draft DCO.</p> <p>Noted regarding the complexity of some of the channel and dune features.</p> <p>Based upon the current interpretation, the archaeological contractor recommends retaining the P2 discrimination. Acoustic blanking is not a feature in itself,</p>

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	<p>MBES data was acquired for the northern section of the ECR, it cannot be guaranteed that all of the seabed features of archaeological potential have been identified within this area (Section 1.1.8). It is good that the limitations of the existing data are being discussed, and we would hope that they will be addressed in the subsequent phases of geophysical survey work.</p> <ul style="list-style-type: none"> We are pleased to see that the complexity of some of the channel and dune features are discussed as this clearly highlights the value of this work and how it will add to our understanding of landscape and sea-level changes in this area over time. We note the seven features (780036-42) were recorded on the SBP data from the nearshore Export Cable Route have been interpreted as acoustic blanking, either at, or just below, the seabed which have the potential to consist of Holocene in date (Unit 6). Furthermore, we welcome the recommendation for geoarchaeological work to aid in refining the interpretation, and therefore help determine the archaeological potential of the area. As such we therefore request, with respect to the precautionary principle and our experience with other windfarm projects, that a P1 discrimination be applied to these features in this instance. 			<p>but rather an indication of the potential for archaeological deposits to be present and may equally be caused by coarse sediment layers as well as indicating the presence of shallow gas, and possible organic deposits. This will be clarified post-consent by a programme of geoarchaeological assessment.</p>
	PEIR Survey	Historic England	3	<p>Noted. In Section 1.5.1 of the Outline Written Scheme of Investigation (Offshore) (Document Reference: 8.6) it is specified that objectives to inform the scope of pre-</p>

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	<ul style="list-style-type: none"> Table 16.1 (EA1N & EA2) details that we requested that swath multi-beam bathymetry (MBES), side scan sonar (SSS), magnetometer and sub-bottom profile (SBP) data to be collected from all areas of the site. Given the varied line spacing across the export cables and the array areas we consider the SBP technique should be utilised in the subsequent phases of geophysical survey where apparent survey line spacing gaps have been identified, especially in areas where potentially discreet but significant features (such as the dunes 780003 and 780004) were recorded. This point is also illustrated due to the fact two significant features (75404 and 75405) previously recorded were not identified during the more recent assessment of the geophysical data, likely due to differences in equipment, survey line spacing and orientation. Table 16.3 (EA1N & EA2) summarises the embedded mitigation for offshore and intertidal archaeology and cultural heritage. It is noted that SSS and MBES have been mentioned, which produce images of the seabed, but SBP and magnetometer data have not been mentioned. Due to our comments made above and those provided below we consider the table should be updated. Recommendations for geotechnical cores to be subject to geoarchaeological assessments as well, and that the need for cores for specific 			<p>construction marine geophysical survey will be advised by the archaeological contractor following a data review of existing data and that the scope will be consulted on with Historic England.</p> <p>The requirement to submit a final Written Scheme of Investigation for approval with MMO in consultation with Historic England is secured under the requirements of the draft DCO.</p> <p>Table 16.3 in Chapter 16 Marine Archaeology and Cultural Heritage of the ES is now Table 16.2, and has been amended as requested, with magnetometer data included.</p> <p>A commitment to geoarchaeological assessment is further set out in section 1.5.2 of the Outline Written Scheme of Investigation (Offshore) (Document Reference: 8.6), submitted as part of the DCO application.</p> <p>The requirement to submit a final Written Scheme of Investigation for approval with MMO in consultation with Historic England is secured under the requirements of the draft DCO.</p> <p>Noted regarding the comment relating to line spacing used. In Section 1.5.1 of the Outline ESI (Offshore), submitted as part of the DCO application, it is specified that objectives to inform the scope of pre-construction marine geophysical survey will be advised by the archaeological contractor following a data review of existing data and that the scope will be consulted on</p>

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	<p>archaeological purposes will be discussed with an archaeological contractor.</p> <ul style="list-style-type: none"> Line spacing used is generally much larger than is recommended in the Historic England Marine Geophysics guidance (2013). Given our concerns that the coverage of the resulting surveys would not be able to identify feature/deposits of archaeological interest (see above) it is worthy of note that is the recommended specification for the effective acquisition of Sub-bottom profiler data – is based upon a 30m line spacing with cross lines of 1-10 times the principal line spacing (2013: Section 6.4.2, p25). We do however accept the geophysical surveys carried out to date were intended to be preliminary surveys only, with further higher resolution and full coverage surveys planned for later on in the development process. We would therefore consider it important to have further discussion with regards to the appropriate level of survey in relation to the above guidance, and to ensure that we receive method statements for all surveys undertaken. It was noted that a significant number of the anomalies were classed as 'A2', being of uncertain origin of possible archaeological interest, and that a large number of these related to magnetic only anomalies. We therefore accept that the limitations of the existing information are recognised and that additional works are planned to fill in any gaps in our understanding. 			<p>with Historic England. This includes commitment to the issuing of method statements by the Applicant in advance of any further geophysical survey campaigns that incorporate archaeological objectives. The requirement to submit a final Written Scheme of Investigation for approval with MMO in consultation with Historic England is secured under the requirements of the draft DCO.</p> <p>Noted regarding the classification of anomalies. The approach to the additional works is set out in the Outline Written Scheme of Investigation (Offshore) (Document Reference: 8.6).</p> <p>Noted regarding the geophysical surveys carried out to date, and the need for further discussions. In Section 1.5.1 of the Outline Written Scheme of Investigation (Offshore) (Document Reference: 8.6) it is specified that objectives to inform the scope of pre-construction marine geophysical survey will be advised by the archaeological contractor following a data review of existing data and that the scope will be consulted on with Historic England.</p> <p>The requirement to submit a final Written Scheme of Investigation for approval with MMO in consultation with Historic England is secured under the requirements of the draft DCO.</p> <p>A commitment to further geoarchaeological assessment to be undertaken post-consent is outlined in Section 1.5.2 of the Outline Written Scheme of Investigation (Offshore) (Document Reference: 8.6).</p>

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	<ul style="list-style-type: none"> Historic England note that new SSS and MBES data were acquired in 2017 for the EA1N Primary Area 1, but that no new data was obtained from the EA1N Primary Area 2 (Section 1.1.6 (EA1N)). Geophysical surveys carried out to date were intended to be preliminary surveys only, with further higher resolution and full coverage surveys planned for later on in the development process. It would therefore be appropriate to have further discussion with regards to the appropriate level of survey in relation to the above guidance and to ensure that we receive method statements for all surveys undertaken. Section 2.6 discusses the geotechnical work that has been completed to date as part of the EA1N project, stating that two boreholes have been collected and assessed for archaeological purposes. This has included a DBA of the core logs to establish the likely presence of horizons of archaeological potential. We welcome the use of geotechnical boreholes for archaeological purposes, but we would question if two boreholes are enough at this stage and certainly think more are needed to ground-truth the conclusions drawn from the geophysical survey work (summarised in Table 7 (EA1N)). It is stated that the multibeam bathymetry (MBES) data were gridded at 0.5 m and analysed using QPS Fledermaus software by the archaeological team. As such, whilst we consider this acceptable for the characterisation stage of the project, we do 			<p>The requirement to submit a final Written Scheme of Investigation for approval with MMO in consultation with Historic England is secured under the requirements of the draft DCO.</p> <p>The multibeam bathymetry data was received by the archaeological contractor as ungridded, raw data and was gridded by them at 0.5m to achieve the highest resolution possible from the data.</p>

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	however request all future MBES data be provided to the accredited archaeological contractor in a raw un-gridded form, such that they can adequately interpret and account for the potential range of discreet and ephemeral seabed anomalies likely to be encountered through the post-consent geophysical surveys.			
	<p>PEIR Methodology</p> <ul style="list-style-type: none"> The precautionary approach will be used that assigns a high importance to an asset to ensure that the potential for impacts are not underestimated (paragraph 54 (EA1N) & paragraph 51 (EA2)). A similar approach is being taken when uncertainty occurs in the assessment of the impacts of the proposed development on heritage assets: where uncertainty exists, the magnitude of the impact will be assumed to be major (Section 16.4.3.2, paragraph 65 (EA1N) and paragraph 62 (EA2)). Welcome the use of Firth, A. (2014) East Coast War Channels in the First and Second World War in addressing the nature and extent of the Historic Seascape Character for the two projects. We therefore feel it is important to consider this element of the historic environment through the production of the strategic overview (draft outline Written Scheme of Investigation) and its resulting outcomes - in terms of understanding spatially represented First and Second World War heritage assets. 	Historic England	2	<p>Noted regarding the comment relating to the precautionary approach. This approach is retained for the ES.</p> <p>Noted regarding the use of Firth, A. (2014) East Coast War Channels in the First and Second World War. Reporting and publication, if required, for information on World War I and II heritage assets generated as an outcome of this project would consider the understanding of the spatial representation of such assets.</p>

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	<p>PEIR Impact</p> <ul style="list-style-type: none"> Table 16.1 (EA1N & EA2) states that an outline Written Scheme of Investigation will be submitted with the Development Consent Order (DCO) application, detailing the requirements for post consent survey, archaeological assessments and geotechnical works. We would refer back to our letter sent on the 18th January 2017 regarding the need to consider carefully the coverage and specifications required for the survey work to ensure adequate assessment of the impacts to the historic environment. We would hope to see these factors discussed within the outline Written Scheme of Investigation, with reference to standard industry guidance and Chartered Institute for Archaeologists' Standard and Guidance for the Historic Environment. All impacts and archaeological mitigation needs to be captured in the marine Written Scheme of Investigation, which would also need to ensure there is adequate overlap in relation to the intertidal area. The applicant also needs to ensure the wording of DCO captures all works particularly if these works would lie outside of the main construction phases, or in the event that these are considered to be preliminary matters. Tables 16.2 (EA1N & EA2), Table 7.43 (EA1N) and Table 7.40 (EA2) also discuss the indirect impacts that could impact heritage assets, such 	Historic England	7	<p>In Section 1.5.1 of the Outline Written Scheme of Investigation (Offshore) (Document Reference: 8.6) submitted as part of the DCO application, it is specified that objectives to inform the scope of pre-construction marine geophysical survey will be advised by the archaeological contractor following a data review of existing data. The Written Scheme of Investigation also confirms a commitment to consultation with Historic England on the scope of marine geophysical and marine geotechnical survey to be undertaken post-consent and includes reference to standard industry guidance including ClfA standard and guidance. The requirement to submit a final Written Scheme of Investigation for approval with MMO in consultation with Historic England is secured under the requirements of the draft DCO.</p> <p>The study area for the Outline Written Scheme of Investigation (Offshore) (Document Reference: 8.6), submitted as part of the DCO application, comprises the East Anglia TWO windfarm site and the offshore cable corridor including the landfall up to mean high water springs (MHWS). A summary of the impacts identified in the ES is provided in Section 1.3. Information on how mitigation will be delivered is provided in Section 1.6.</p> <p>The requirement to submit a final Written Scheme of Investigation for approval with MMO in consultation with Historic England is secured under the requirements of the draft DCO.</p>

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	<p>as changes to the coastal processes, which we accept as appropriate.</p> <ul style="list-style-type: none"> The discussion of the potential complexity of these deposits and the presence of organic layers (Section 16.5.1, paragraphs 79-92 (EA1N) and paragraphs 76-87 (EA2)), as indicated by the existing geophysical survey and geoarchaeological evidence was good to see as this demonstrates the information that this project can add to our understanding of sea-level change and the changes to environments and landscapes over time. Agreement with the direct impacts that the proposed development may have upon potential heritage assets are generally considered to be of potentially high magnitude (Section 16.6.1.2, paragraph 154 (EA1N) and paragraph 150 (EA2)). Acknowledgement that there is also the potential for further maritime archaeological material to be present, dating from the Mesolithic up to the present day (Section 16.5.2 paragraph 107 (EA1N) and paragraph 104 (EA2)). The visibility of the remains has also been discussed, which is beneficial, as wooden remains would not be identifiable when using some of the geophysics approaches cited in this chapter. It is stated that increased erosion that may be experienced in the area surrounding each turbine will be mitigated either through the implementation of AEZs for A1 anomalies, and micro-siting for A2 and A3 anomalies (paragraphs 			<p>Noted regarding the indirect impacts that could impact heritage assets and HE's acknowledgement. This approach will be retained for the ES.</p> <p>Noted regarding the comment relating to the indications of the geophysical survey and geoarchaeological evidence. Further geoarchaeological assessment of geophysical and geotechnical data post-consent will aim to further enhance this understanding.</p> <p>Noted regarding HE's agreement on the magnitude of direct impacts. This approach is retained for the ES.</p> <p>Noted regarding HE's acknowledgement for the potential for further maritime archaeological material to be present.</p> <p>The impact that changes to coastal processes may have on heritage assets are discussed in detail as part of the assessment of Chapter 16 Marine Archaeology and Cultural Heritage (Sections 16.6.1.3 and 16.6.2.3) of the ES. Similarly embedded mitigation specific to Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES also forms part of the considerations for heritage in Chapter 16 Marine Archaeology and Cultural Heritage of the ES, for example in terms of seabed preparation and scour protection, discussed as part of the worst case scenario in Section 16.3.2 in Chapter 16 Marine Archaeology and Cultural Heritage of the ES which in turn informs the assessment of impacts for archaeology and cultural heritage.</p>

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	<p>181 & 182 (EA1N) and paragraph 178 (EA2)). The latter approach will need to carefully consider the evidence obtained from the pre-construction surveys that are planned, as well as the limitations in the approaches used and the data that will be collected. In addition, the impact that changes to coastal processes may have on heritage assets needs to be discussed in more detail. Heritage assets are briefly mentioned in Table 7.43 (EA1N & EA2) in the Marine Geology, Oceanography and Physical Processes chapter (Ch7), but the details of the embedded mitigation strategy set out in Chapter 7 Marine Geology, Oceanography and Physical Processes needs to be discussed with heritage in mind (either in Chapter 7 or in Chapter 16), such as the use of scour protection (Chapter 7.6.2.4 (EA1N & EA2)). It is stated in Section 7.3.4 that monitoring will form a major part of the management strategy (paragraph 63 (EA1N) and paragraph 64 (EA2)), but again this would need to consider heritage assets.</p> <ul style="list-style-type: none"> Construction of the development will result in an increased disturbance of sediment that will be redeposited elsewhere. The redeposited sediments may therefore “conceal” any present archaeology present, which is classed as resulting in no impact. Should such a scenario occur we think that the redeposited sediments are unlikely to “conceal” known archaeological sites or features, but may form a protective anaerobic 			<p>The effect of indirect impacts such as redeposited sediments and potential concealment has been considered further in Section 16.6.1.3 of Chapter 16 Marine Archaeology and Cultural Heritage of the ES. The magnitude of increased sediment cover on heritage assets as a result of construction activities is assessed as nil / none, therefore no additional consideration is required regarding how this may limit a degrading effect.</p> <p>Noted regarding the potential impact of a breakout of drilling fluid used in the HDD process.</p> <p>Noted regarding the section relating to ‘Impacts to site preservation conditions from heat loss from installed cables’.</p> <p>Noted regarding the line spacing used in geophysical surveys exceeding the limit recommended for archaeological work. In Section 1.5.1 of the Outline Written Scheme of Investigation (Offshore) (Document Reference: 8.6) it is specified that objectives to inform the scope of pre-construction marine geophysical survey will be advised by the archaeological contractor following a data review of existing data and that the scope will be consulted on with Historic England.</p> <p>The requirement to submit a final Written Scheme of Investigation for approval with MMO in consultation with Historic England is secured under the requirements of the draft DCO.</p>

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	<p>environment, thereby limiting the degrading effect. We therefore feel this issue needs further consideration.</p> <ul style="list-style-type: none"> The potential impact of a breakout of drilling fluid used in the HDD process has been discussed in Chapter 16.6.1.5 in terms of how this could impact buried archaeology (paragraphs 171-172 (EA1N) and paragraphs 166-167 (EA2)). We are pleased to see that this has been considered for this project, and that a strategy that will be employed to minimise the potential for breakout has been devised. Any mitigation required to manage fluid breakout would also need to take into consideration historic environment impacts. Additionally, there may also be instances suitable for beneficial recreational opportunities for new shipwreck site discoveries, given many wrecks are dived by both amateur dive groups and professional organisations. This should also be reflected in tourism and recreation Table row or the separate ES chapter as it has direct relevance to the paragraph 2.6.142 of the National Policy Statement for Renewable Energy Infrastructure (EN-3) (DECC 2011) whereby the assessment should also include the identification of any beneficial effects on the historic marine environment, for example through improved access or the contribution to new knowledge that arises from investigation. Section relating to 'Impacts to site preservation conditions from heat loss from installed cables' an 			<p>Noted regarding the comment related to the spread of wrecks assemblages. It is specified in section 1.6.1 of the Outline Written Scheme of Investigation (Offshore) (Document Reference: 8.6) that the archaeological assessment of pre-construction survey data, for example, will further clarify the nature and extent of AEZs and anomalies and that the scheme design would be modified to avoid heritage assets where possible. If features cannot be avoided, it is understood that additional work may be required manage discoveries effectively in accordance with curatorial advice.</p>

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	<p>interesting inclusion which we may provide additional comments on at the application stage after consultation with our expert marine conservator.</p> <ul style="list-style-type: none"> • Pleased to see that the anomalies will be avoided where possible but it should be noted that the line spacing used in geophysical surveys completed to date exceed the limit recommended for archaeological work, and the limitations of the current data have been stated in Sections 4.2.22 and 4.2.23 (EA1N), and Sections 3.2.12 and 4.2.32 (EA2). It is therefore possible that the full extent of some features has not been fully defined, or that smaller anomalies have not been identified at all. This needs to be taken into account and addressed when subsequent phases of geophysical and geoarchaeological survey work is carried out (Section 5.1.3 & 5.1.4 (EA1N & EA2)). • Wrecks assemblages can be spatially spread (sometimes buried) over much larger distances than the original centrally observed remains might suggest. Whilst it is therefore necessary to consider AEZs on a case by case basis, and in relation to the proximity and orientation of proposed development infrastructure, the developer should be aware that the perceived extent of AEZs (at this stage) – based upon the specifications for a characterisation survey, could change. Furthermore, additional unrelated anomalies close to existing AEZs may also 			

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	become apparent. Factoring in the unknown is always difficult, but the developer must be sufficiently prepared in budget for and apply necessary expertise and resources to manage discoveries and associated AEZs in a timely fashion to attain and factor in curatorial advice.			
	<p>PEIR Cumulative Impacts</p> <ul style="list-style-type: none"> Determination made in Chapter 16.7.1 'Cumulative direct impact to potential heritage assets' to be acceptable whereby the potential cumulative impact is considered to be minor adverse. Additionally, section 16.7.3 Cumulative beneficial impact of accumulation of data includes welcome reference to European neighbours and their initiatives and frameworks for managing heritage within section, which is not an element of an assessment we have seen so detailed within an application before. 	Historic England	2	Noted regarding acknowledgement and agreement of the significance of cumulative impacts.
	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> AEZs have not been recommended at this time for features assigned an A2 archaeological discrimination (uncertain origin of possible archaeological interest): the A2 anomalies will be avoided where possible through micrositing, being further clarified through the additional archaeological assessments in order to clarify the nature and extent of these anomalies (Section 16.6.1.1, paragraph 149 (EA1N), paragraph 145 (EA2). All this work needs to be clearly 	Historic England	5	<p>The Outline Written Scheme of Investigation (Offshore) (Document Reference: 8.6) , submitted as part of the DCO application, details the requirement for avoidance and micrositing in Section 1.6.1.</p> <p>The requirement to submit a final Written Scheme of Investigation for approval with MMO in consultation with Historic England is secured under the requirements of the draft DCO.</p> <p>Section 1.5.3 of the Outline Written Scheme of Investigation (Offshore) (Document Reference: 8.6),</p>

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	<p>programmed and supported through the Written Scheme of Investigation and detailed in the Construction Management Plan.</p> <ul style="list-style-type: none"> It is also mentioned that reporting protocols and watching briefs will be utilised (Table 16.2, EA2) as well as further geophysics and geotechnical data and the ground-truthing of information using ROVs or divers (Section 16.4.3.1, paragraph 50 (EA2); Section 16.6.1.1, paragraph 145). As detailed above we note that an outline Written Scheme of Investigation will present the proposed strategy and will be submitted alongside the DCO application. As an initial request we think it will be important to take account of lessons learnt from the outcomes of previous developments, especially those that provided positive results, in order to make best use of ground-truthing survey opportunities, such as the added integration of archaeological expertise. We however note from Section 16.4.3.1 (paragraph 49 (EA2)) that “In the majority of cases, statutory protection is only provided to a site or feature judged to be an above average example in regard to these factors”. Although in general terms we feel this is an accurate statement it is important to reflect that there is no specific statutory protection available beyond English territorial waters, toward the Exclusive Economic Zone. Furthermore, the specific criteria for designation do not typically include 			<p>submitted as part of the DCO application, states that archaeological input will be sought at the planning stages of ground-truthing survey (diver and/or ROV). This will take account of any lessons learned from ground-truthing work undertaken for equivalent projects.</p> <p>The requirement to submit a final Written Scheme of Investigation for approval with MMO in consultation with Historic England is secured under the requirements of the draft DCO.</p> <p>Noted regarding comment relating to Section 16.4.3.1 (paragraph 49 (EA2)). The significance of heritage assets would be considered on a case by case basis as necessary to inform appropriate and proportionate mitigation strategies in the event of new discoveries.</p> <p>Table 16.3 ‘Embedded mitigation for offshore and intertidal archaeology and cultural heritage’ in Chapter 16 Marine Archaeology and Cultural Heritage of the ES is now Table 16.2, and has been amended as requested, to include magnetometer data.</p> <p>Section 1.5.1 of the Outline Written Scheme of Investigation (Offshore) (Document Reference: 8.6) includes specific reference to the need to consider the limitations of geophysical equipment in identifying buried archaeological remains in any future survey campaign.</p> <p>Noted regarding the protection of the A1 anomalies within an AEZ. It is specified in section 1.6.1 of the Outline Written Scheme of Investigation (Offshore) (Document Reference: 8.6) that AEZs may be reduced, enlarged or removed in agreement with Historic England</p>

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	<p>archaeological features, without associated man-made structures.</p> <ul style="list-style-type: none"> Table 16.3 'Embedded mitigation for offshore and intertidal archaeology and cultural heritage' should state that planned surveys of full coverage of the final wind farm layout and cable route will also include magnetometer data. Section 16.5.2 (paragraph 104 (EA2)) the statement that the greatest potential for previously undiscovered wreck material to be present is "most likely to be associated with areas of sand waves" have covered and buried archaeological remains. As such, this is an important factor to consider within the offshore Written Scheme of Investigation , given the limitations of geophysical equipment (conducive to the identity of wreck material), to penetrate the depth of mobile sediment likely to be impacted, such as cabling burial to a maximum depth of 5m. We would therefore like this point to be discussed within the forthcoming draft offshore Written Scheme of Investigation . Broad agreement with the classification of <i>in situ</i> remains as being of high significance, and isolated discoveries being of medium significance, and that the implication of mitigation measures reduce the impacts to 'minor adverse' (paragraph 155 (EA2)). The mitigation may include additional geophysical and geotechnical surveys, but it is important to note that some archaeological remains are not readily identifiable by some of the 			<p>as further relevant information (e.g. pre-construction geophysical surveys, ROV / Diver investigations) becomes available post-consent. The requirement to submit a final Written Scheme of Investigation for approval with MMO in consultation with Historic England is secured under the requirements of the draft DCO.</p> <p>Noted regarding a reporting protocol being developed to account for any objects that are recovered during the groundworks operations.</p>

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	<p>geophysical approaches cited within the document.</p> <ul style="list-style-type: none"> • Good to see that the A1 anomalies will be protected within an Archaeological Exclusion Zones (AEZ) but additional information may be required to support the size of some of the AEZs proposed: for some isolated features an AEZ of only 15m has been proposed (Export Cable route). However, we understand that this decision is only based upon remote sensing techniques, and we consider it the possible heritage interest of such anomalies will need to be considered carefully where no wider surrounding buffer coverage exists, 700263 (ECR) as an example when compared to 700109 and associated wreck 70684 (EA2)). • AEZs have not been discussed with reference to A2, P1 or P2 anomalies (Section 5.2.2 & 5.2.3 (EA1N) and Section 5.2.4 (EA2)). These features will be avoided by micro-siting if they are to be impacted by the proposed development, but that a reporting protocol is also being developed to account for any objects that are recovered during the groundworks operations (Section 5.2.4 (EA1N) and Section 5.2.6 (EA2)). 			
Infrastructure and Other Users	<p>Marine Minerals</p> <ul style="list-style-type: none"> • In line with the marine mineral safeguarding policies in the East Inshore/Offshore Marine Plans, (which reflect the requirements of the UK Marine Policy Statement) Hanson Aggregates 	Hanson Aggregates Marine Ltd	3	Noted regarding comments relating to the decommissioning programme. Decommissioning works would be determined by relevant legislation and guidance at the time of decommissioning. The offshore cable corridor has been developed to minimise sterilisation of the areas of potential aggregate resource.

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	<p>Marine Ltd consider it necessary for all infrastructure associated with the proposed development to be considered within the decommissioning programme for East Anglia ONE and TWO to take full and proper account of the potential for marine mineral resources to be permanently sterilised over the long term, as a consequence of leaving renewable energy infrastructure (particularly cables) in situ, once generation activities have concluded.</p> <ul style="list-style-type: none"> Concern over some existing activities (e.g. navigation and fishing) being displaced onto areas where marine aggregate operations have traditionally taken place, which would increase operational risks. Squeezing and condensing of activities from displacement of existing activities in offshore area of proposal. 			<p>See sections 17.3.3, 17.5.5, Figure 17.5 of Chapter 17 Infrastructure and Other Users and Chapter 4 Site Selection Assessment of Alternatives of the ES for further details.</p> <p>There is an overlap of the offshore cable corridor with areas identified as potential aggregate resource, however the overlap is 0.9% of identified area of potential aggregate resource. See sections 17.3.3, 17.5.5, Figure 17.5 of Chapter 17 Infrastructure and Other Users and Chapter 4 Site Selection Assessment of Alternatives of the ES for further details.</p>
	<p>Telecommunications Cable</p> <ul style="list-style-type: none"> The installation of the windfarm with associated turbines, array and export cables may represent a serious risk to our asset, the Ulysses 2 telecommunications cable, and we request a crossing and proximity agreement be negotiated in good faith between the Applicant and Verizon should Verizon deem it necessary. In order to be able to maintain the Ulysses 2 cable in the event of a fault or other remedial work being required, we request that turbines are installed at 	Verizon	4	<p>Discussions between the Applicant and Verizon will continue post application and an appropriate cable crossing agreement will be reached.</p> <p>Noted regarding all comments relating to the maintenance of the Ulysses 2 cable, this will be used to inform the crossing agreements with Verizon at the detailed design phase.</p>

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	<p>a distance no less than 750m from the Ulysses 2 cable to allow for safe access for repair vessels.</p> <ul style="list-style-type: none"> In order to be able to maintain the Ulysses 2 cable in the event of a fault or other remedial work being required, we request that any array and export cable crossings of the Ulysses 2 cable are kept to a minimum. If multiple cable crossings are deemed necessary we request that a distance of at least 500m is maintained between crossings of the Ulysses 2 cable in order that maintenance and repairs can be affected on the Ulysses 2 cable safely and efficiently. If loss of safe access to the Ulysses 2 cable results in increased costs of operation and maintenance, then we would expect to be compensated accordingly by the Applicant. 			
	<p>Interaction with other users</p> <ul style="list-style-type: none"> Where interactions with other users is unavoidable (e.g. cable crossings), commercial agreements would be put in place ahead of construction. 	Eastern IFCA	1	Discussions between the Applicant and owners of relevant infrastructure will continue post application and appropriate crossing and proximity agreements will be reached.
	<p>Impacts on existing infrastructure</p> <ul style="list-style-type: none"> Demonstration of no impact on integrity and stability of Greater Gabbard Offshore Wind Farm's (GGOWF) infrastructure Potential wake effects on GGOWF. 	Greater Gabbard	3	Chapter 4 Site Selection and Assessment of Alternatives and Chapter 6 Project Description of the ES demonstrate how other infrastructure constraints have been considered in the design of the project.

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	<ul style="list-style-type: none"> EA1N and EA2 infrastructure should be designed to minimise onshore land take and sterilisation of land which may be needed for future NSIPs. 			<p>Potential impacts with cables from Greater Gabbard are assessed discussed in Section 17.6 of Chapter 17 Infrastructure and Other Users of the ES.</p> <p>The full response will be used to inform the proximity agreements with Greater Gabbard at the detailed design phase.</p> <p>East Anglia TWO onshore order limits have been developed to minimise land take required. Details of onshore impacts to land use are provided in Chapter 21 Land Use of the ES.</p>
	<p>Sizewell C</p> <ul style="list-style-type: none"> Any development offshore, as ScottishPower Renewables need to demonstrate that physical compatibility of its projects would have no adverse effects on the future operations of Sizewell C. This needs careful investigation prior to submission of the applications. We would like to work with you to understand any potential impacts and develop a way forward that would not impact Sizewell C. 	EDF Energy	1	<p>As outlined in sections 4.7.4.1.3 and 4.7.4.2.2 of Chapter 4 Site Selection and Assessment of Alternatives of the ES and illustrated in Figure 4.3 of the ES, EDF Energy raised concerns in relation to potential impacts to an important geological formation (Coralline Crag) in the landfall area which resulted in the Applicant widening the offshore cable route to the south so that this formation could be avoided.</p> <p>Furthermore, an assessment of the offshore cable corridor and landfall selection (see Appendix 4.6 Coastal Processes and Landfall Site Selection of the ES), using information provided by EDF was undertaken to investigate construction methodologies which would avoid physical impacts to the Coralline Crag. This study is summarised in section 4.8.2 of Chapter 4 Site Selection and Assessment of Alternatives of the ES and the results were used to inform landfall and nearshore</p>

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				<p>engineering decisions which required refinement of the offshore cable corridor in the nearshore area.</p> <p>It is likely that the HDD pop-out location will be to the south of the outcrop of Coralline Crag (see section 17.6.1.2 of Chapter 17 Infrastructure and Other Users of the ES and section 7.6.2.7 of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES). Hence, there will be no interruption of the circulatory sediment transport pathways between the coast and Sizewell Bank.</p>
Ground Conditions and Contamination	<p>PEIR Policy</p> <ul style="list-style-type: none"> GP3 has now been superseded, please refer to the updated guidance. 	Environment Agency	1	Section 18.3.3 of Chapter 18 Ground Conditions and Contamination of the ES notes the inclusion of this new guidance.
	<p>PEIR Survey</p> <ul style="list-style-type: none"> A full site survey should be undertaken by a competent person and should include analytical reports for the presence of contaminated land covering the study area, this being; the landfall, onshore cable corridor, onshore substation and the National Grid infrastructure/connection locations. Where investigation indicates the presence of existing contaminants, a remediation plan detailing the safe handling, removal or encapsulation of contaminated material should be provided to both the Environmental Protection Team at Suffolk Coastal District Council (East 	SCC/SCDC (now East Suffolk Council)	1	<p>A Phase 1 Land Quality Preliminary Risk Assessment is presented in Appendix 18.3 of the ES.</p> <p>A Requirement of the draft DCO secures the post-consent production of a scheme detailing the measures used to mitigate the potential for release of contaminants for the construction and operational stage of the proposed East Anglia TWO project.</p>

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	Suffolk Council in due course) and the Environment Agency.			
	<p>PEIR Baseline</p> <ul style="list-style-type: none"> For data sources in section 18.4.2, the data set should also include private licensed groundwater abstractions, which are available from the Environment Agency. Table 18.7 should be revised to reflect the approach agreed by the Ground Conditions and Contamination Expert Topic Group. This Expert Topic Group agreed that: <ul style="list-style-type: none"> All Principal Aquifer should be considered of High sensitivity. Secondary A aquifer should be considered High sensitivity to take into consideration the importance of superficial aquifers: <ul style="list-style-type: none"> for supporting base flow to surface waters; where they are in hydraulic continuity with principal aquifers; and where they support private potable supplies. All abstractions (licensed & unlicensed) should be High sensitivity. All abstractions have protected rights, the contamination 	Environment Agency	9	<p>An environmental information request was made to the Environment Agency and this data set has been used to inform Chapter 18 Ground Conditions and Contamination. This is addressed in section 18.4.1.2, Table 18.5 of Chapter 18 Ground Conditions and Contamination of the ES.</p> <p>Receptor sensitivities have been updated in his chapter to reflect the Section 42 comments. This is addressed in section 18.6, Table 18.6 of Chapter 18 Ground Conditions and Contamination of the ES.</p> <p>Clarification as to the classification and extent of aquifers below the onshore development area has been provided. This is addressed in section 18.5.4 of Chapter 18 Ground Conditions and Contamination of the ES.</p> <p>Information on all private and public water supplies in the onshore development area was obtained and this has been used to inform the baseline of Chapter 18 Ground Conditions and Contamination is addressed in section 18.5.4 of Chapter 18 Ground Conditions and Contamination of the ES.</p>

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	<p>of a private groundwater or surface water abstraction used for sole potable supply would be unacceptable, and there should be no derogation without consent.</p> <ul style="list-style-type: none"> All formerly licensed abstractions are also protected rights. <ul style="list-style-type: none"> Secondary B aquifer should be in the low value category but not very low. The very low category should be limited to unproductive strata only. In respect of the existing environment; section 18.5.4 covers Hydrogeology. The superficial deposits in the area are predominantly glacial sand and gravel shallow aquifer (as illustrated in Figure 18.3); there is only limited cover of less productive deposits. Paragraph 51 states the superficial deposits are classified as “unproductive strata”. This is not the case, Lowestoft Formation diamicton classed as Secondary aquifer (undifferentiated) is present in the west of the application area. In the east and the river valleys, the sands and gravels of the Lowestoft Formation is at surface and designated as Secondary A aquifer. Consequently, all superficial deposits in the area are classified as Secondary aquifers, none are classified as being unproductive strata. The superficial sand and gravel deposits will not afford protection to the Principal aquifer Crag below. The sand and gravel aquifer itself needs to be protected from adverse impacts. 			<p>Further clarification on the anticipated baseline trends is provided in section 18.5.7 of Chapter 18 Ground Conditions and Contamination of the ES.</p> <p>Clarification on the classification, nature and extent of groundwater aquifers has been provided. This is addressed in section 18.6.1.2 of Chapter 18 Ground Conditions and Contamination of the ES.</p> <p>Further clarification on the impact, and mitigation measures, on the Principal Crag aquifer are provided in section 18.6.1.2 of Chapter 18 Ground Conditions and Contamination of the ES.</p> <p>Noted regarding the comment relating to paragraph 80 of Chapter 18 Ground Conditions and Contamination of the ES. A hydrogeological risk assessment will be produced pre-construction. This is addressed in section 18.6.1.2 of Chapter 18 Ground Conditions and Contamination of the ES.</p> <p>Clarification on the classification, nature and extent of groundwater aquifers is provided. This is addressed in Section 18.3.2.1 of Appendix 18.3 Land Quality Preliminary Risk Assessment to the ES.</p> <p>Further information requests for groundwater abstraction were made and these data sources have been used to inform the baseline of the assessment presented in Chapter 18 Ground Conditions and Contamination.</p>

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	<ul style="list-style-type: none"> The Thanet Sands are classified as a Secondary aquifer in this part of East Anglia; the London Clay is classified as Unproductive Strata. With reference to paragraph 53; the SPZs in the area are defined around abstractions boreholes for public potable water supply; private potable water supplies also need to be considered. Section 18.5.7 Anticipated Trends in Baseline Condition, and specifically section 18.5.7.3 Hydrogeology, states that pressure on groundwater levels is likely to decrease in the future. We do not believe that to be a valid statement having regard to likely climate change impacts and growth. Paragraph 76 within section 18.6.1.2 (Impact on Groundwater Quality of The Principle Aquifer and Source Protections Zones from Construction) refers to a “Primary aquifer” within the superficial deposits. This needs to be clarified. There are not any Principal aquifers “within superficial deposits”. Disturbance of superficial deposits may impact upon underlying Principal aquifers. Secondary aquifer sensitivity needs to be considered where it supports abstractions and surface water features, please see comments on table 18.7 above. Paragraph 77 considers migration to the underlying superficial aquifer; migration to the principal Crag aquifer also needs to be considered. Regarding Paragraph 80, we can confirm that we will definitely want to see a hydrogeological risk 			This is addressed in section 18.4.2 of Chapter 18 Ground Conditions and Contamination of the ES.

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	<p>assessment for any works within or close to an SPZ.</p> <ul style="list-style-type: none"> Appendix 18.1: Land Quality Preliminary Risk Assessment. Section 18.3.2.1 Hydrogeology; as detailed above, the superficial deposits are not unproductive strata. All superficial deposits in the area are classified as Secondary aquifers, none are classified as being unproductive strata. The superficial sand and gravel deposits will not afford protection to the Principal aquifer Crag below. The sand and gravel aquifer itself needs to be protected from adverse impacts. Appendix 18.1: Land Quality Preliminary Risk Assessment. Section 18.3.2.2 Groundwater Abstractions, please contact us for details of all private licensed abstractions within the onshore study area; the Council hold details of private unlicensed abstractions only. Appendix 18.1: Land Quality Preliminary Risk Assessment. Section 18.3.2.2 Groundwater Abstractions, please contact us for details of all private licensed abstractions within the onshore study area; the Council hold details of private unlicensed abstractions only. 			
	<p>PEIR Impact</p> <ul style="list-style-type: none"> Regarding section 18.3.3, and specifically Table 18.3 Embedded Mitigation for Ground Conditions – Groundwater Quality; the EA will need to see a Hydrogeological Risk Assessment for all abstractions and surface water features that are in 	<p>Environment Agency; SCC; SCDC (now East Suffolk Council)</p>	<p>3</p>	<p>A hydrogeological risk assessment will be produced pre-construction. This is addressed in section 18.3.3, Table 18.2 of Chapter 18 Ground Conditions and Contamination of the ES.</p>

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	<p>hydraulic continuity, not just for public water supply abstractions. Groundwater Source Protection Zones (SPZs) are specific to public water supply abstractions.</p> <ul style="list-style-type: none"> This level of construction work has the potential to impact on; land, water quality and human health, through spillages, mobilisation of sediment and contamination by surface water run-off or disturbance of previously unforeseen contaminants. Removal of superficial deposits could alter the surface hydrology and disrupt infiltration rates or alter surface runoff interactions with the subsurface. This in-turn could alter pathways and allow the mobilisation of sources of contamination within superficial deposits and allow the migration of contaminants into strata containing the underlying superficial aquifers, which may then affect public and private water supplies. 			<p>This is addressed in section 18.6 of Chapter 18 Ground Conditions and Contamination of the ES. A requirement of the draft DCO secures the post-consent production of a scheme detailing the measures used to mitigate the potential for release of contaminants for the construction and operational stage of the proposed East Anglia TWO project</p>
	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> In respect of both section 18.6.1.2 and 18.6.1.3 (Impact on Groundwater Quality of Principal Aquifer Including Source Protection Zones from Trenchless Crossing and Piling Activities) of the PEI, we will require full method statements and risk assessments for any HDD or piling works within Principal or Secondary aquifers. These should consider all piling activities (HDD and deeper piling), detailing the embedded mitigation measures which will ensure the protection of 	Environment Agency	2	<p>The requirement for method statement and risk assessment prior to construction was reiterated within the embedded mitigation and further clarification in the assessment was provided in Chapter 18 Ground Conditions and Contamination of the ES. These are addressed in sections 18.6.1.2 and 18.6.1.3 of Chapter 18 Ground Conditions and Contamination of the ES.</p> <p>Noted. This is addressed further in Appendix 18.3 Land Quality Preliminary Risk Assessment of the ES.</p>

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	<p>water resources and groundwater. A site specific piling risk assessment should be undertaken where activities are proposed within and close to SPZ 1, where contamination is found and where the activities will penetrate the overlying low permeability superficial deposits (where present) or the groundwater table.</p> <ul style="list-style-type: none"> PEI Appendix 18.1: Land Quality Preliminary Risk Assessment. Regarding section 18.7 Recommendations, we agree that a more detailed procedure for dealing with unexpected contamination is required. 			
	<p>Remediation Plan</p> <ul style="list-style-type: none"> Should any unanticipated contamination be encountered during the construction of the projects, then work should be halted, sampling should be undertaken and where contamination is identified, a written remediation plan statement on how this contamination will be dealt with should be agreed with the Environmental Protection Team at Suffolk Coastal District Council/ East Suffolk Council and the Environment Agency. 	<p>SCC; SCDC (now East Suffolk Council)</p>	1	<p>This is addressed in section 18.3.3, Table 18.2 of Chapter 18 Ground Conditions and Contamination of the ES.</p> <p>A requirement of the draft DCO secures the post-consent production of a scheme detailing the measures used to mitigate the potential for release of contaminants for the construction and operational stage of the proposed East Anglia TWO project.</p>
	<p>General Assessment Comments</p> <ul style="list-style-type: none"> Concern that the underground lake feeding a local borehole has been missed. 	<p>Local Community Member</p>	1	<p>Section 18.5.4 of Chapter 18 Ground Conditions and Contamination of the ES details the hydrogeological features that have been included in the assessment. This comprises of the two groundwater Source Protection Zones within the development area for public water supplies and several private portable water</p>

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				<p>abstractions, therefore all water supplies from the local aquifers have been included in the assessment. The risk to aquifers before mitigation was assessed as minor adverse. Details of mitigation including the development of an Incident and Emergency Response Plan and Hydrological Risk Assessment, along with adherence to Environment Agency technical guidance for groundwater protection and other industry standard best practices can be found in Section 18.3.3 of Chapter 18 ground Conditions and Contamination of the ES. After the implementation of this mitigation the magnitude of the impacts was reduced to negligible, however due to the high sensitivity of the receptor the overall impact was assessed to be minor adverse, more detail can be found in Section 18.6.1.2 and 18.6.1.3 of Chapter 18 of the ES.</p>
	<p>Water supplies</p> <ul style="list-style-type: none"> The location of private water supplies should be discussed with the council. 	Ground Conditions and Contamination Expert Topic Group 2 (East Suffolk Council, Suffolk and East Suffolk District Council)	1	<p>The location of private licenced groundwater abstractions have been discussed with East Suffolk Council and Suffolk Coastal District Council. More details of the data used for the ground conditions and contamination assessment can be found in section 18.4.2 of Chapter 18 Ground Conditions and Contamination of the ES.</p>

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	Pollution of soils	Local Community Member	1	A very rigorous dust reduction regime must be put in place as the soil in this area is notorious for rising in the wind.
	Contamination of watercourses <ul style="list-style-type: none"> The majority of the onshore cable route is located in agricultural land. However, a number of sensitive areas are crossed, including the River Hundred Special Landscape Area (SLA). It is essential that contamination leaks and spills during construction are controlled in such a way as not to create any damage to the local environment. Increased surface runoff will lead to the creation of pollutant pathways for spills and leaks which will affect downstream surface waters. Pollution concerns from contamination run off that feeds into water courses for recreation and agricultural purposes and into areas of marshland and rivers which may impact ecosystems supporting wildlife, particularly important areas for migratory birds. Impacts on SSSI watercourses. Delicate water table. Vulnerable to contamination. Aquifers are at risk of being affected 	Aldringham-cum-Thorpe Parish Council; Local Community Members	7	<p>The accidental release of contamination into surface water through the creation of new exposure pathways has been assessed in section 18.6.1.4 of Chapter 18 Ground Conditions and Contamination of the ES. The conclusion was that the impact will be minor adverse after the implementation of embedded mitigation, specifically the adherence to the Environment Agency pollution prevention guidance, more details can be found in section 18.3.3 of Chapter 18 Ground Conditions and Contamination of the ES.</p> <p>Impacts to SSSI watercourses are assessed in Chapter 20 Water Resource and Flood Risk of the ES. The impact of contamination of SSSI watercourses were assessed as minor adverse after the implementation of mitigation such as retaining buffer strips of vegetation, agreeing construction methodologies with the Environment Agency and producing a hydrogeological risk assessment. More details can be found in section 20.6.1.3 of Chapter 20 Water Resource and Flood Risk of the ES.</p> <p>The impacts to aquifers have been assessed in sections 18.6.1.2 and 18.6.1.3 of Chapter 18 Ground Conditions and Contamination of the ES. The conclusion is that the</p>

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				<p>impact would be minor adverse after the implementation of embedded mitigation measures such as the production of a hydrological risk assessment and engaging with the Environment Agency.</p> <p>The majority of the onshore cable route is located in agricultural land. However, a number of sensitive areas are crossed, including the River Hundred Special Landscape Area (SLA). It is essential that contamination leaks and spills during construction are controlled in such a way as not to create any damage to the local environment.</p>
	<p>Mitigation Suggestions</p> <ul style="list-style-type: none"> Request more information on ground contamination mitigation. SCC/SCDC deem it important to implement a mitigation programme. This programme should include a CEMP and a Material Management Plan (MMP), these should be based on industry standards and codes of practice (e.g. Contaminated Land: Applications in Real Environments (CL:AIRE)). The mitigation programme should also be agreed with the relevant authorities before any works commence. Materials Management Plan (MMP) should detail all materials (i.e. soil, waste etc.) which are to be: stockpiled, relocated, removed from site for disposal purposes or safely encapsulated on site. All imported materials brought to site should be; 	<p>SCC; SCDC (now East Suffolk Council)</p>	<p>3</p>	<p>The request for more information is addressed in Appendix 18.3 Land Quality Preliminary Risk Assessment of the ES.</p> <p>A requirement of the draft DCO secures the post-consent production of a scheme detailing the measures used to mitigate the potential for release of contaminants for the construction and operational stage of the proposed East Anglia TWO project.</p> <p>A Code of Construction Practice (CoCP) will be developed pre-construction, building upon the OCoCP (Document Reference: 8.1) submitted with this DCO application. The CoCP is secured under a requirement of the draft DCO and will be agreed with the relevant stakeholders. The CoCP will include protocol for dealing with spillages and leaks of fuel and oils.</p>

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	validated, recorded and notified to both the Environmental Protection Team at Suffolk Coastal District Council/East Suffolk Council and the Environment Agency in line with a pre-agreed assessment criterion. Detailed evidence in the form of certification to 'Contaminated Land Exposure Assessment (CLEA) standard' will need to be supplied to ensure the source of the imported material is suitable for the proposed end use.			<p>The CoCP will additionally include provision for a materials management plan, developed in accordance with CL:AIRE code of practice.</p> <p>This is addressed in section 18.3.3, Table 18.2 of Chapter 18 Ground Conditions and Contamination of the ES.</p> <p>A requirement of the draft DCO secures the post-consent production of a scheme detailing the measures used to mitigate the potential for release of contaminants for the construction and operational stage of the proposed East Anglia TWO project.</p> <p>This is addressed in section 18.3.3, Table 18.2 of Chapter 18 Ground Conditions and Contamination of the ES.</p> <p>The impact of accidental release of contaminants is considered in detail within Chapter 20 Water Resources and Flood Risk of the ES.</p>

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Air Quality	PEIR Policy <ul style="list-style-type: none"> We would also highlight that following DEFRA's Clean Air Strategy, published in January 2019, the UK Government has committed to publishing new guidance for local authorities explaining how cumulative impacts of nitrogen deposition on natural habitats should be mitigated and assessed through the planning system 	Environment Agency	1	Noted. New guidance for local authorities has yet to be published. The Air Quality Management Plan submitted post-consent to discharge a requirement of the draft DCO will adhere to future legislation and best practice guidance where appropriate.
	PEIR Methodology <ul style="list-style-type: none"> Part of the Impact Assessment Methodology (specifically section 19.4.3.1.16), Environment Agency guidance (Air Emissions Risk Assessment for your Environmental Permit, 2017) is to be used to consider the significance of impacts from road traffic on ecological receptors. The conclusion in respect of impacts from Construction Phase Road Traffic Exhaust Emissions on Ecological Receptors (section 19.6.1.2.2), is that given "increases in nutrient nitrogen deposition were no greater than 1% of the most stringent critical load", "Impacts are therefore considered to be insignificant, in accordance with Environment Agency guidance". The Environment Agency guidance referred to is intended to be used in relation to industrial emissions, and it is the local authority's responsibility to manage and control air quality in relation to road traffic emission, and its impacts. The Applicant should seek confirmation from the 	Environment Agency; SCC; SCDC (now East Suffolk Council); Ricardo Energy and Environment on behalf of Suffolk County Council/East Suffolk Council	5	<p>Comments were received from the Local Planning Authority with regard to the use of the criterion as described below.</p> <p>The methodology used for the impact assessment (study area and receptors) were discussed and agreed with stakeholders at Expert Topic Group meetings in April 2018, of which the Local Planning Authority are part of.</p> <p>Model verification was revisited to more adequately represent model underprediction within the AQMA, as described in section 19.4.3.2.6 of Chapter 19 Air Quality of the ES.</p> <p>The assessment used future year emission factors and background concentrations. A sensitivity test was carried out whereby emissions would not improve in the future, as presented in Appendix 19.4 Emissions Sensitivity Test to the ES.</p>

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	<p>local authority that they are satisfied with the methodology used and guidance applied.</p> <ul style="list-style-type: none"> The air quality assessment results concluded that there would be a moderate adverse impact in the Stratford St. Andrew Air Quality Management Area (AQMA). However, the Chapters argue that there is an overall conclusion of insignificance based on the effect at other receptor sites being negligible, the conservative approach applied and in consideration of Suffolk Coastal District Council/East Suffolk's measures targeted at reducing AQMA concentrations. Verification within this location (tube STA 8 at Long Row) showed the model has a tendency to under-predict (a factor of 4.73 compared to the 3.89 average applied across the study area). In terms of absolute concentrations, the model therefore under predicts by nearly 5 µg/m³ in this AQMA post model adjustment which means that actual concentrations reported at Receptor 1, modelled at 39 µg/m³ could in fact be as high as 44 µg/m³. Accordingly, there is the potential for exceedance of the Nitrogen Dioxide (NO₂) Air Quality Strategy (AQS) objective here based on model uncertainties and as such a conclusion of insignificant effects is not supported without appropriate mitigation. Given the conservative nature of the methodology, the Applicant could demonstrate that the concentrations may not in fact be as high in this location as reported in the Chapters, either by way of sensitivity analysis or 			<p>The assessment used the latest available version of the Emission Factor Toolkit (version 9.0) as stated in section 19.4.3.2.4 of Chapter 19 Air Quality of the ES.</p> <p>Discussion of the construction vehicle fleet to be adopted is provided in section 19.6.1.2.1.1 of Chapter 19 Air Quality of the ES.</p> <p>A discussion of the assessment scenarios considered is provided in section 19.4.3.2.2 of Chapter 19 Air Quality of the ES.</p> <p>A discussion on the scope of the assessment is provided in section 19.3.1 of Chapter 19 Air Quality of the ES, which includes operational phase road traffic</p> <p>A sensitivity test using base year emission factors was undertaken and is presented in Appendix 19.4 Emissions Sensitivity Test of the ES.</p> <p>A discussion of the assessment scenarios and years considered is provided in section 19.4.3.2.2 of Chapter 19 Air Quality of the ES.</p> <p>The assessment of Cumulative Impacts with East Anglia ONE North is presented in Appendix 19.2 of the ES.</p>

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	<p>use of year-appropriate emissions and background concentrations.</p> <ul style="list-style-type: none"> The most recent version of the EFT, at the time of assessment, should be used and version made clear within the report. It is essential that construction vehicles are as accurately reflected within the EFT as possible. For example, the construction vehicle types e.g. articulated HGV, size of vehicle and associated euro standard. The applicant should either adopt Euro VI/6 standard construction vehicles or demonstrate that pre-Euro VI/6 standard construction vehicles will not cause any air quality objective exceedances. The minimum construction vehicle standards assumed within the assessment should be secured through a DCO requirement. SPR's applicant should include a reasonable worst-case assessment regarding the construction traffic flows for the individual scheme and cumulatively. This should include the combination of construction traffic flows and assessment year which result in highest emissions, rather than base it upon absolute construction traffic flows. There is a complex relationship between assumed fleet year and number of vehicles, which means that the year with highest construction traffic movements, will not necessarily have the greatest air quality impacts. As the earlier the year of assessment the more polluting the fleet will be. 			<p>At this stage, a qualitative assessment with Sizewell B and C has been carried out, as presented in section 19.7 of Chapter 19 Air Quality of the ES.</p> <p>Details of the model verification process and model performance, including the RMSE, are provided in section 19.4.3.2.6 of Chapter 19 Air Quality of the ES.</p> <p>The AQMA covers a row of four terraced houses. Diffusion tube monitoring carried out over the last five years at both ends of the AQMA extent shows that the monitoring location STA8, at the south-western end of the AQMA, experienced the highest pollutant concentrations. Location STA8 was included in the dispersion model as a sensitive receptor, and therefore it is considered that the most conservative concentrations within the AQMA have been captured. Figure 19.3 of Chapter 19 Air Quality of the ES details the receptors considered in the assessment, including those within the Stratford St Andrew AQMA.</p> <p>The modelled road network is shown in Figure 19.3 of Chapter 19 Air Quality of the ES.</p> <p>Details of the model verification process and model performance are provided in section 19.4.3.2.6 of Chapter 19 Air Quality of the ES.</p> <p>The RMSE of the model was calculated to be within the required 25%, as detailed in section 19.4.3.2.6 of Chapter 19 Air Quality of the ES.</p>

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	<ul style="list-style-type: none"> Justification for scoping out the operational phase should be established by demonstrating no traffic model road links meet the institute for air quality management's (IAQM) land-use planning and development control traffic screening criteria. Or provide justification, where links meet the screening criteria and have been excluded from assessment. It is anticipated that the construction vehicles and associated Euro standards for the proposed development can be specified through construction contracts. However, the applicant will also need to calculate emissions for non-construction related traffic, where there is less certainty on whether the assumed emissions improvements will occur in reality. Within paragraph number 19.4.3.1.7, the applicant has stated that they are going to use the EFT. This includes projections on how much the cleaner the fleet will be. Historically, these projections have not been accurate, and a sensitivity test should be undertaken to establish the impacts upon air quality concentrations which could occur if the fleet is more polluting than predicted. The applicant should explain why the assessment year has been set to 2028, especially when a peak assessment year if 2026 has been selected for each scheme individually. In addition, as mentioned within AQ2, the applicant should base their choice of scenario for assessment upon the combination of construction traffic flows and 			<p>The Air Pollution Information System states that marine-based ecological designations are unlikely to be sensitive to air pollution impacts, or they are usually dominated by other sources of inputs (Centre for Ecology and Hydrology, 2019).</p> <p>Furthermore, the Planning Inspectorate agreed that emissions from vessels offshore would be negligible in magnitude, and impacts would therefore be insignificant.</p> <p>Given the above, the assessment of offshore designated ecological sites was not carried out.</p> <p>The standards for NRMM that have been incorporated into the OCoCP (Document Reference: 8.1) submitted with this DCO application are detailed in section 19.6.1.1.5.6 of Chapter 19 Air Quality of the ES.</p>

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	<p>assessment year which result in highest emissions at sensitive locations e.g. Stratford St Andrew. This should also include consideration of heightened sensitivity associated with other schemes currently at the planning stage such as EA2, Sizewell B facilities re-location and Sizewell C early years construction.</p> <ul style="list-style-type: none"> • The applicant should provide the root mean square error (RMSE) to establish the range in predicted concentrations. Should the range of uncertainty associated with RMSE indicate a potential breach of air quality objectives, appropriate mitigation should be put forward. This mitigation should be quantified to demonstrate that the proposed scheme does not breach AQOs. • The applicant should provide figures which demonstrate that the properties most at risk of adverse impacts in Stratford St Andrew have been included in the assessment. • The applicant should provide a figure which facilitates the comparison of modelled road network and traffic screening • The applicant should provide justification for excluding monitoring locations from the verification process, and potentially revise the modelling study so that it provides a more accurate representation of air quality at the measurement locations. • The applicant should provide further information on the root mean square error. As per 			

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	<p>LAQM.TG(16)'s guidance on model verification, should the RMSE $\geq 25\%$ of the annual mean NO₂ the model should be revisited.</p> <ul style="list-style-type: none"> The applicant should provide further information on why designated sites surrounding the offshore windfarm have been excluded from the assessment. The Construction Management Plan should specify that any non-road mobile machinery (NRMM) plant should meet the applicable standards (currently stage IIIB engine standards from the NRMM emission standard 97/68/EC directive). 			
	<p>PEIR Impact</p> <ul style="list-style-type: none"> Section 19.4.3.1.16 paragraph 68 states, "Guidance provided by the Environment Agency (Environment Agency 2017) states that where the contribution of a project leads to nutrient nitrogen deposition values below 1% of the critical load, impacts can be considered to be not significant. "The 1% of critical load alone is not considered robust in the determination of significance due to recent court rulings (Ashdown Forest and the Court of Appeal). If it is to be used at all, both case law and NE's internal guidance require it to be used 'in combination' (i.e. taking account of other future sources) not for the scheme in isolation. Tables 19.28 show a change of 1% of critical load at receptor T-1, yet paragraph 120 states no results greater than 1%. the Applicant 	<p>SCC; SCDC (now East Suffolk Council)</p>	<p>3</p>	<p>The assessment considered the in-combination effects of other future sources, including Sizewell C New Nuclear Power Station, as detailed in section 19.6.1.2.2 and section 19.7 of Chapter 19 Air Quality of the ES. Increases in deposition as percentages of the Critical Load have been reported to one decimal place for clarity.</p> <p>Dust management measures have been recommended in Chapter 19 Air Quality and have been incorporated into an OCoCP (Document Reference: 8.1) submitted with this DCO application, secured under the requirements of the draft DCO. This includes measures to minimise windblown dust from soil stockpiles, such as seeding and revegetation.</p> <p>The latest version of the Emissions Factors Toolkit (v9.0) was used in the assessment.</p>

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	<p>should confirm if this is a rounding issue. The above point regarding significance criteria could also be taken into consideration here, where all future sources should be considered. T-1 perhaps then warrants further ecological investigation, as they have stated.</p> <ul style="list-style-type: none"> A Dust Management Plan (DMP) should be agreed and include a range of measures to prevent wind whipping of the long stretch of stockpiled top soil which will be created by the projects. The stockpiles will run east/west the length of the cable route and haul road and in the main will consist of light top soil. Wind entrainment is commonly seen in the 'Suffolk Sandling' area and presents a major risk to both residential and ecological receptors. Whereas individual movement of soils may be of short duration this long length of stockpile will be in place for many months and subjected to strong winds at times. Covering or fencing this length of stockpile is impracticable and seeding or re-vegetation is likely to be the only suitable measure to mitigate wind whipping of this vulnerable stockpiled material. The Councils require clarification in relation to the version of the Emissions Factors Toolkit referenced and utilised for the assessments, provenance of traffic data utilised, and cumulative peak construction year identified. 			<p>The traffic flow data were derived as described in Chapter 26 Traffic and Transport.</p> <p>Additional detail on elements scoped out of the assessment are detailed in section 19.2 of Chapter 19 Air Quality of the ES.</p> <p>Impacts associated with decommissioning are detailed in section 19.6.2 of Chapter 19 Air Quality of the ES.</p> <p>The Sizewell Marshes SSSI was considered in the assessment as described in section 19.5.3.2.2 of Chapter 19 Air Quality of the ES.</p> <p>The diffusion tube monitoring sites considered in the model verification process are detailed in section 19.4.3.2.6 of Chapter 19 Air Quality of the ES.</p>

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	<ul style="list-style-type: none"> Further information is required in relation to the decommissioning impacts and reasons behind the decision to scope out operational impacts. Greater justification is required for the exclusion of Sizewell Marshes Site of Special Scientific Interest as an ecological receptor, and the exclusion of some diffusion tub monitoring sites from the air quality assessment. 			
	<p>PEIR Cumulative Assessment</p> <ul style="list-style-type: none"> Within the dust emission magnitudes for the onshore works, the Cumulative Impact Assessment Scenario 1 (both EA1N and EA2 schemes at same time), Tables A19.3 list N/A for ecological receptors for construction. However, in the individual assessment of EA1N and EA2, the magnitude is classified as medium. This is inconsistent and should be clarified. Given proximity of ecological receptors, it is considered likely they should be included within the Cumulative Impact Assessments accordingly. The applicant should provide justification for excluding Sizewell C marshes construction and operational traffic from the assessment. The “Two-Village Bypass” is due to come online in 2024 as part of the Sizewell C planning application should it be successful in obtaining planning consent. This would have the potential to divert most offshore windfarms construction vehicles from the Stratford St Andrew AQMA. Consequently, if Sizewell C is unsuccessful in 	<p>SCC/SCDC (now East Suffolk Council); Ricardo Energy and Environment on behalf of Suffolk</p>	<p>3</p>	<p>The dust emission magnitude for construction relating to ecological receptors has been amended as presented in Appendix 19.4 Emissions Sensitivity Test to the ES.</p> <p>Embedded mitigation with additional measures as recommended by the IAQM, for example soil stockpile management measures e.g. seeding, gives a residual impact of not significant for project alone and cumulative assessments.</p> <p>The impact upon Sizewell Marshes SSSI was considered in the assessment, as presented in section 19.6.1.2.2 of Chapter 19 Air Quality of the ES.</p> <p>The effect of the Two Village Bypass has not been considered at this stage. A qualitative assessment with Sizewell B and Sizewell C activities has been undertaken at this stage, as described in section 19.7.2 of Chapter 19 Air Quality of the ES.</p>

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	gaining planning permission or if the construction programme is delayed, the offshore windfarms pose a risk to this AQMA. It is unclear within the PEIR air quality chapter whether preliminary results within Table 19.24 include the "Two-Village Bypass". The applicant should predict concentrations within Stratford St Andrew without the bypass in place. Should any exceedances be predicted the number of heavy goods vehicles (HGV) should be limited to mitigate this risk. These restricted HGV numbers will be secured through a DCO requirement.			
	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> No consideration is given to mitigating the adverse impacts in the Stratford St Andrew AQMA, which due to model under-prediction and uncertainty in this area is considered a significant effect. Concentrations and impacts are even closer to the Air Quality Strategy objective at R1 in the AQMA within the Cumulative Impact Assessment sections, Scenario 1. There is again no mention of how the Applicant will address this and little consideration seems to be given to the potential for exceedance here based on the reported results, relying instead on the assertion of a conservative methodological approach. The applicant should only present mitigation measures which will be used in practice. The reported measures should be secured through the DCO requirement process and, how these are 	<p>SCC/SCDC (now East Suffolk Council); Ricardo Energy and Environment on behalf of Suffolk County Council/East Suffolk Council</p>	2	<p>The assessment considered the use of future year emission factors and background concentrations and impacts were predicted to be negligible within the AQMA.</p> <p>As good practice, the Applicant will commit to the use of Euro VI HGVs during construction, where practicable, to minimise emissions associated with the proposed East Anglia TWO project insofar as possible.</p> <p>The mitigation measures detailed in section 19.6.1.1.5 of Chapter 19 Air Quality of the ES have been incorporated into an OCoCP (Document Reference: 8.1) submitted with this DCO application, secured under the requirements of the draft DCO. This includes measures to minimise windblown dust from soil stockpiles, such as seeding and revegetation.</p>

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	incorporated within the construction environmental management plan, should be agreed with the local authority. The construction mitigation measure should use the IAQM's high risk mitigation measures as a starting point. Given the unique nature of this development (e.g. coastal location; extended duration of construction programme; extensive storage of materials), the dust mitigation measures may need to go beyond the scope of IAQM guidance. This should be reflected in the applicant's assessment and proposed mitigation of dust impacts.			
	<p>General Assessment Comments</p> <ul style="list-style-type: none"> Concerns regarding reliability and quality of EDF data (in terms of Sizewell C construction traffic). Increase to air pollution is not negligible. No explanation given as to how air quality or dust from construction has been assessed or will be monitored. Lack of information on air quality monitoring proposals and actions to be taken if safe thresholds breached. Use of houses rather than garden boundary's or local footpath as the nearest receptor to the development. Lacks detail. Request for justifications for assessment scope and modelling results. Seek further information regarding Impacts on air quality during the operational and construction 	Air Quality Expert Topic Group 2 (SCDC (now East Suffolk Council); Local Community Members; SCC, SCDC (now East Suffolk Council).	9	<p>Air quality impacts during the construction phase are presented in section 19.6.1 of Chapter 19 Air Quality of the ES.</p> <p>Impacts associated with the operational phase were scoped out, as described in section 19.2 of Chapter 19 Air Quality of the ES.</p> <p>A qualitative assessment with Sizewell B and Sizewell C activities has been undertaken at this stage, as described in section 19.7.2 of Chapter 19 Air Quality of the ES.</p>

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	phases of the projects, justifications for assessment scope and modelling results and cumulative impacts with Sizewell C.			
	<p>Dust pollution concerns</p> <ul style="list-style-type: none"> Concern over impact of windblown dust from haul roads on sandy surfaces. Concerns over dust storms with cable trench excavation and piles of soil. Impacting tourism. Dust leading to damage to nursey stock at Bull's Hall. Light topsoil along cable route and at substation site will cause dust pollution Dust pollution kicked up by large vehicles 	Air Quality Expert Topic Group 2 (SCDC (now East Suffolk Council); Save our Sandlings; Local Community Members; Church of St Mary the Virgin, Friston; Friston Parish Council / SASES; Suffolk Coast and Heath AONB Partnership	44	<p>A construction dust assessment has been included in Chapter 19 Air Quality of the ES in accordance with Institute of Air Quality Management guidance.</p> <p>The Traffic Management Plan and the Code of Construction Practice will include measures on dust control.</p>
	<p>Air pollution and odour concerns</p> <ul style="list-style-type: none"> Air pollution caused by increased traffic. Impacting tourism. Impact of fumes from construction vehicles and generators. 	Save our Sandlings; Local Community Members; Church of St Mary the Virgin,	72	<p>A detailed air quality assessment was carried out for the EIA (see Chapter 19 Air Quality of the ES).</p> <p>Air pollution dispersion modelling was used to predict pollutant concentrations at sensitive receptors along roads which will experience an increase in traffic</p>

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	<ul style="list-style-type: none"> Increased diesel fumes and smell. 	Friston; Aldeburgh Society; Darsham Parish Council; Friston Parish Council / SASES		<p>movements as a result of the construction phase of the project.</p> <p>This included the Air Quality Management Area in Stratford St Andrew. The associated impacts on air quality as a result of development-generated traffic are presented in Chapter 19 Air Quality of the ES.</p>
	<p>Suggested mitigation measures</p> <ul style="list-style-type: none"> Emissions limits on contractor vehicles. Windblown dust should be dampened by dampening. The light top soil which is predominant in this area is often subject to wind entrainment when exposed, which will be the case at the landfall location, along the cable route and the substation sites. This presents a risk to both residential and ecological receptors. the Applicant must demonstrate they have an adequate strategy in place to prevent this occurrence. 	Air Quality Expert Topic Group 2 (SCDC (now East Suffolk Council); Leiston-cum-Sizewell Town Council; Aldringham-cum-Thorpe Parish Council	5	A Construction Traffic Management Plan (CTMP) will be submitted to and approved by the relevant planning authority to outline measures to manage impacts of construction vehicles.
Water Resources and Flood Risk	<p>Project Design</p> <ul style="list-style-type: none"> The temporary crossing of the Hundred River is suggested to be either a bridge or culvert. We would highlight that culverting can significantly impact the hydrology and ecology of a watercourse and in most cases a bridge would be the preferred method. 	Environment Agency	1	Potential impacts to the Hundred River have been further clarified in section 20.6.1.1 of Chapter 20 Water Resources and Flood Risk of the ES. Noted regarding the preference for a bridge crossing. A bridge or a culvert have both been retained as potential crossing techniques.

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	<p>PEIR Baseline</p> <ul style="list-style-type: none"> Table 20.1 states that the Expert Topic Group commented that public water supply abstractions should be considered Medium sensitivity. And that all abstractions within the study area be included as High sensitivity. For clarity, in respect of PWS abstractions the Expert Topic Group recommended that: It is acceptable to include public water supply abstractions as Medium sensitivity if their SPZ1 or 2 is outside the study area but all Principal Aquifer should be considered to be of High sensitivity. Section 20.5.2 Existing environment – Groundwater. In respect of paragraph 69, we would state that the Principal aquifer chalk is at significant depth in the study area, below the low permeability unproductive London Clay. The Crag is the Principal aquifer bedrock underlying the study area; the Crag is overlain by Secondary aquifer glacial deposits. Regarding Groundwater, Table 20.13 should also explicitly include Secondary aquifer supporting abstractions. 	Environment Agency	2	<p>This has been clarified in Table 20.7 of Chapter 20 Water Resources and Flood Risk of the ES by aligning the sensitivity of receptors with the responses received to Section 42 consultation</p> <p>Addressed in section 20.5.2 and Table 20.12 of Chapter 20 Water Resources and Flood Risk of the ES by including the Secondary aquifer supporting abstractions in the existing environment of this assessment</p>
	<p>PEIR Methodology</p> <ul style="list-style-type: none"> While we generally welcome the revised rationale in respect of surface waters and water quality in table 20.8 (definitions of sensitivity); we note that the definitions agreed by the Expert Topic Group (as included in table 20.1) in respect of flood risk vulnerability and groundwater resources do not 	Environment Agency; SCC; SCDC (now East Suffolk Council)	9	<p>This has been clarified in Table 20.7 of Chapter 20 Water Resources and Flood Risk of the ES by aligning the sensitivity of receptors with the responses received to Section 42 consultation.</p> <p>Noted, no further response required.</p>

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	<p>appear to have been incorporated. This should therefore be corrected.</p> <ul style="list-style-type: none"> Appendix 20.1 - Having reviewed the FRA we are satisfied that for issues within our remit it provides a suitable basis to make an assessment of the flood risks arising from the proposed development. In particular the FRA confirms that: <ul style="list-style-type: none"> Both the National Grid Substation and East Anglia TWO onshore substation are in Flood zone 1 The majority of the onshore cable route is located within Flood Zone 1 The FRA identifies that within the study area there are two main rivers namely the Thorpeness Hundred River and Friston Watercourse. A flood risk activity permit may be required at these locations. Environmental permits for flood risk activities are required for work in, under, over or within 8 metres of a fluvial main river. The construction method of the temporary haul roads and access roads is yet to be established, other than it will consist of a suitable imported material. It is considered likely, similar to the temporary works areas that these surfaces will not be permeable surfaces and should therefore be accounted for as an impermeable area in the design of the SWDP. This is imperative given these roads will be required for access throughout the construction of the projects and could act as 			<p>Further detail regarding the construction of the temporary haul road and access road is provided in Chapter 6 Project Description of the ES and this has been considered when completing the FRA presented in Appendix 20.3 Flood Risk Assessment of the ES. The production, and content of, of the Surface Water Drainage Plan (SWDP) is clarified in Table 20.3 Chapter 20 Water Resources and Flood Risk of the ES. The SWDP will be developed and implemented in the pre-construction period as part of the Code of Construction Practice (CoCP).</p> <p>There are no ordinary watercourse crossings present along the onshore cable route. This has been clarified in section 20.6.1.1 of Chapter 20 Water Resources and Flood Risk of the ES.</p> <p>This is discussed in sections 20.5.5 and 20.6 of Chapter 20 Water Resources and Flood Risk of the ES. No significant impacts to surface water or ground water flood risk are anticipated during the operational phase of the proposed East Anglia TWO project.</p> <p>The assessment presented in Chapter 20 Water Resources and Flood Risk of the ES has considered all parts of the Friston Watercourse catchment, from its source north of Friston to the downstream limit with the Long Reach (Alde Estuary). Figure 20.1 of Chapter 20</p>

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	<p>an exceedance route for flood flows to leave the sites defined boundaries.</p> <ul style="list-style-type: none"> It is acknowledged that the timing of watercourse works is important with periods of low flow “chosen wherever practicable”. This is critical when working across the Main River but is also important for Ordinary Watercourses and must be a consideration when developing working methods. Given the duration of works, we appreciate that watercourse crossings may be undertaken during periods of wet weather. Methods of working must be in place to prevent any increase in flood risk or pollution. During operation, the cable routes are not expected to present any surface water or ground water flood risk. The cables will present a minor impermeable surface to the percolation of water however this is not significant. The impermeable areas created by the jointing bays are smaller than the transition bays and will be located at intervals which should reduce any potential adverse impact. The PEIR fails to assess impacts to watercourses which are not designated as Water Framework Directive (WFD) Water Bodies. The Councils are also concerned that the Main River through Friston has not been adequately assessed within the consultation documents. The ‘Friston Watercourse’ that is assessed through the PEIRs, is not the Main River that runs directly through 			<p>Water Resources and Flood Risk of the ES has been updated to clarify the Main River extent.</p> <p>The assessment considers the whole Friston Watercourse catchment as a receptor. Figure 20.1 of Chapter 20 Water Resources and Flood Risk of the ES has been updated to clarify the Main River extent.</p>

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	<p>Friston. It is in fact, the WFD section of the same river which is approximately 2.5km downstream of Friston. This is not clearly stated anywhere. We are concerned that local residents reading this information may not be aware of this and could therefore be misled by the information presented. The magnitude (both prior to and following mitigation), significance and residual impacts have therefore not been assessed for the Main River through Friston as a Receptor in its own right due to the residential setting, thus high sensitivity. This is a significant shortcoming of the PEIRs.</p> <ul style="list-style-type: none"> As previously highlighted the long term impacts fail to consider the impacts to the Main River through Friston only focusing on the WFD impacts on the Main River 2.5km away. The estimated operational area utilised in the estimated catchment of the Main River through Friston is 10%, the calculation used to find this figure is set out in Appendix D. This is far in excess of the 1.6% stated by the Applicant, this demonstrates that the information contained in the PEIRs fail to assess the increased surface water flood risk to Friston. 			
	<p>PEIR Impacts</p> <ul style="list-style-type: none"> In respect of anticipated trends and section 20.5.5.2 Groundwater, it is not valid to suggest that groundwater pressures will decrease in the 	Environment Agency; SCC; SCDC (now East Suffolk Council)	11	This has been clarified by adding further clarification in section 20.5.5 of Chapter 20 Water Resources and Flood Risk of the ES in relation to future groundwater trends.

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	<p>future given the potential for climate change impacts and growth.</p> <ul style="list-style-type: none"> Section 20.6 - Potential Impacts should also include an assessment of and mitigation against direct disturbance of the aquifer flow to surface water features and groundwater abstractions. This is included later in Table 20.20 but requires a more detailed consideration. For the majority of ecological receptors, the report states that mitigation measures will be identified once detailed design is completed and the exact nature of impacts is known. The examples of the types of mitigation measures are accepted ways of working; however further judgement on likely residual impact is reserved for specific mitigation proposals. We would however highlight at this time that the temporary crossing of the Hundred River is suggested to be either a bridge or culvert. In most cases our preference is for a clear span bridge due to the potential impacts on the hydrology and ecology of a watercourse arising from the use of a culvert. Table 20.17 considers Impacts Resulting from the Accidental Release of Fuels, Oils, Lubricants, Foul Waters and Construction Materials. Whilst adverse impacts on groundwater quantity in the context of the entire WFD groundwater body are likely to be minor, impacts on a single potable water supply abstraction may have consequences much greater than “minor adverse”; this therefore requires further consideration. Additionally, an 			<p>This has been clarified by providing a more detailed consideration of disturbance to aquifer flow in section 20.6.2.1 of Chapter 20 Water Resources and Flood Risk of the ES.</p> <p>Noted regarding acceptance of the methodology. Potential impacts to the Hundred River have been further clarified in section 20.6.1.1 of Chapter 20 Water Resources and Flood Risk of the ES. Noted regarding the preference for a bridge crossing. A bridge or a culvert have both been retained as potential crossing techniques.</p> <p>This has been clarified in section 20.6.1.3 of Chapter 20 Water Resources and Flood Risk of the ES by giving further consideration to water supply abstractions. A Code of Construction Practice (CoCP) will be produced post-consent to discharge a requirement of the draft DCO. This CoCP will include measures to control the accidental release of contaminants</p> <p>Noted, no further response required.</p> <p>See Chapter 6 Project Description of the ES for further detail on the potential crossing methods of the Hundred River. HDD is only required at landfall to avoid intertidal habitats and will not be considered for crossing the Hundred River</p>

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	<p>assessment of the impacts of changes to aquifer flow at a local scale needs to be assessed in detail somewhere within the Water Resources section.</p> <ul style="list-style-type: none"> Acknowledgement of the “moderate adverse” significance prior to mitigation attributed to the Hundred River in Table 20.17, due to the potential for a direct discharge. Appendix 20.2 - The EA welcome that the assessment of WFD covers both deterioration and “to ensure status objectives (i.e. GES or GEP) will not be prevented”. It identifies the scope to deliver measures that could improve the status of the water bodies, particularly at the Hundred River crossing. This is supported but will require specific detailing to fully assess the potential. It should also include assessment of and mitigation for HDD if this is to be used at all during the works. In respect of Table A20.1, we would highlight that groundwater quality is at risk from diffuse pollution from agriculture generally, and not necessarily solely from livestock. Appendix 20.3 - A further assessment of impact upon river geomorphology is required for the river crossing and trench options. This may need further detail for the consideration of construction scenario 2 where the river would be impacted over an extended duration. Appendix 20.4 - There is potential for an increased magnitude of effects from reoccurring disturbance the watercourse, and the extent of 			<p>Addressed in Appendix 20.4 Water Framework Directive Compliance Assessment to the ES, Table A20.1. The note on agriculture as a source of diffuse pollution has been added as requested by Section 42 comments</p> <p>Appendix 20.5 Geomorphological Baseline to the ES provides details of baseline conditions only. Impacts on the geomorphology of surface watercourses are assessed in sections 20.6.1.1 and 20.6.1.2 of Chapter 20 Water Resources and Flood Risk of the ES. The CIA presented in Appendix 20.2 to the ES and summarised in section 20.7.1 of Chapter 20 Water Resources and Flood Risk of the ES provides the impact assessment expected in construction scenario 2.</p> <p>The CIA presented in Appendix 20.2 Cumulative Impact Assessment with East Anglia ONE North to the ES and summarised in section 20.7.1 of Chapter 20 Water Resources and Flood Risk of the ES provides the impact assessment expected in construction scenario 2. This takes into consideration the impact of a reoccurring disturbance.</p> <p>This has been clarified in section 20.6.1.1 of Chapter 20 Water Resources and Flood Risk of the ES. Any temporary watercourse crossings would be designed to ensure that fish passage was unimpeded.</p> <p>The potential impact of the landfall transmission bays has been clarified in section 20.6.1.4 of Chapter 20</p>

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	<p>such cumulative impact needs addressing. The construction should not prevent fish/eel passage and should be timed to prevent disruption during the fish spawning season.</p> <ul style="list-style-type: none"> The landfall transition bays have the potential to create significant disruption to natural groundwater pathways and also generate potentially significant surface water runoff volumes during construction. Two transition bays will be installed per project. The excavation during construction to install two transition bays is considerable (1,554m²), if the bays were constructed simultaneously this would double (3,108m²) and these areas would be in addition to the excavation required for the HDD construction compound and for the CCSs. The Applicant should carry out an assessment of those impacts and propose appropriate mitigation measures to ensure no worsening of risk to the nearby coastal cliffs over the full life of the landfall transition bays until their removal. The embedded mitigation measures may not be sufficient. During operation, the transition bays for the projects have the potential to alter the surface water drainage characteristics of overlying strata caused by saturation which is unable to percolate beyond the concrete structures. Dependent on the ground levels, this could result in an increase of overland flows. Given the proximity to the cliffs, the distance to which may be reducing throughout 			Water Resources and Flood Risk of the ES. Erosion impacts are addressed in Chapter 7 Marine Geology, Oceanography and Physical Processes which is supported by assessments of erosion rates.

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	the lifetime of the projects, the potential impacts on the cliffs must be considered.			
	<p>PEIR Cumulative Impacts</p> <ul style="list-style-type: none"> Appendix 20.4 - With regards to cumulative impact with Sizewell C; understandably the designs for both projects have previously been at a strategic level so CIA has been more speculative. However due to the close proximity of both projects, and the evolution of designs as time progresses, it is reasonable to suggest cumulative impacts are likely and the scale of which should be identified in more detail. 	Environment Agency	1	This has been clarified in section 20.7.2 of Chapter 20 Water Resources and Flood Risk of the ES. A further screening of projects has additionally scoped the Sizewell B Power Station Complex into the CIA. The CIA with the Sizewell C New Nuclear Power Station uses the most recent consultation material available.
	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> The embedded mitigation included in Table 20.4 states that foul drainage from welfare facilities and sub-stations will be to mains or septic tank. Mains should be the first preference, and septic tanks may not be acceptable in certain locations. Table (20.4) does not include any embedded mitigation in respect of fluvial flood risk. The study area does include Flood Zone 2 & 3, with a crossing of the Hundred River. We would expect to see embedded mitigation listed; this might include for example storing materials and equipment outside of flood risk areas and signing up to flood warnings as part of a flood warning and evacuation plan. With regard to the trenching technique detailed in 20.6.1.1, we would highlight that there is no 	Environment Agency; SCC; SCDC (now East Suffolk Council)	6	<p>Noted. Mains and septic tanks are both still considered as embedded mitigation for foul drainage. This is clarified in Table 20.3 of Chapter 20 Water Resources and Flood Risk.</p> <p>Clarified in Table 20.3 and section 20.6.1.4 of Chapter 20 Water Resources and Flood Risk of the ES. As suggested, embedded mitigation measures include material storage outside of Flood Zones 2 and 3 as far as reasonably practicable</p> <p>This has been clarified in section 20.6.1.1 of Chapter 20 Water Resources and Flood Risk of the ES. Any temporary watercourse crossings would be designed to ensure that fish passage was unimpeded.</p>

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	<p>mention of potential timings. We would expect to see, for example, some mention of the potential to impact on any elver run expected around May – July, and potentially fish spawning.</p> <ul style="list-style-type: none"> Appendix 20.1 - Note the references to surface water flood risk. Suffolk County Council as Lead Local Flood Authority will need to be satisfied with the assessment of surface water flood risk and any mitigation measures proposed to ensure that there is no increase in flood risk as a result of the development. This will include managing surface water run-off during the construction phase and from the constructed sub-station sites. We would however highlight that any attenuation ponds or similar features to manage surface water should also be designed to incorporate ecological enhancements wherever possible, providing net gains for biodiversity. As mentioned above, attenuation ponds have been suggested to manage surface runoff and these could provide areas for ecological benefit. Such beneficial features could include varying depths, gently shelved banks, an irregular outline and an area permanently retaining water; providing this does not compromise the ability of these features to function effectively as part of the drainage system. The Councils acknowledge the intention to combine SuDS with ecological and landscape mitigation and encourage this approach. 			<p>This is clarified in Table 20.3 of Chapter 20 Water Resources and Flood Risk of the ES which details the embedded mitigation proposed to manage surface water run-off during the construction phase of the proposed East Anglia TWO project.</p> <p>The OLEMS (Document Reference: 8.7) submitted with this DCO application illustrates the ecological mitigation and benefits of the proposed East Anglia TWO project, including those in relation to the management of surface water. Species are listed as per the OLEMS which incorporates a desire to plant wet woodland for biodiversity</p> <p>This is clarified in Table 20.3 of Chapter 20 Water Resources and Flood Risk of the ES which details the embedded mitigation proposed to manage surface water run-off during the construction phase of the proposed East Anglia TWO project.</p> <p>The OLEMS (Document Reference: 8.7) submitted with this DCO application illustrates the ecological mitigation and benefits of the proposed East Anglia TWO project, including those in relation to the management of surface water. Species are listed as per the OLEMS which incorporates a desire to plant wet woodland for biodiversity.</p> <p>Noted, no further specific response required.</p>

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	<p>General Assessment Comments</p> <ul style="list-style-type: none"> Historic flooding and risk has not been taken into account. Environment Agency have not been consulted with regarding flood risk. The assessment and the proposal to use collection ponds (SuDs) with controlled runoff is not an acceptable solution. Flood risk to Friston from the construction haul road has been omitted. Flood Risk Assessment does not provide sufficient detail to explain how the increased risk of flood posed by the substations would be overcome. Lacks detail. The Applicant have not recognised the existing land drainage, including the large pit, which exists and is proposed to be removed. The Applicant have carried out no assessment of the current form of drainage, nor provided any details of the increased run-off from the development of the substations or any details of how the SUDs system would be managed. Impacts on the Main River that runs through Friston have not been assessed. There is very little acknowledgement of Ordinary Watercourses throughout the PEIR documentation. The number of Ordinary Watercourse crossings along the cable route has not been established. 	<p>Local Community Members; Friston Parish Council/ SASES; SCC; SCDC (now East Suffolk Council)</p>	42	<p>A Flood Risk Assessment was carried out and identifies those realistic worst case parameters of the onshore infrastructure that are relevant to potential impacts on water resources and flood risk during construction, operation and decommissioning phases of the proposed East Anglia ONE North and East Anglia TWO projects. Changes in surface water runoff as a result of the increase in impermeable area from the onshore substations will be attenuated and discharged at a controlled rate. The controlled runoff rate will be equivalent to the greenfield runoff rate. The full specification for the attenuation ponds will be addressed as part of detailed design. A Surface Water and Drainage Plan (SWDP) will be developed and implemented to minimise water within the cable trench and ensure ongoing drainage of surrounding land and the plan will be submitted with the DCO application.</p> <p>There will be two Sustainable Drainage System (SuDS) ponds for the substation site and an additional SuDS basin which will be further north to reduce water in-flow rates to the substation area and potentially reduce flood risk for the village of Friston.</p> <p>The SuDS will be maintained as part of the onshore substation and National Grid infrastructure operation. Clarified in Table 20.3 of Chapter 20 Water Resources and Flood Risk of the ES</p>

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	<p>The Main River crossing is assessed in more detail, as would be expected, however some details regarding Ordinary Watercourses and the localised risk presented by inadequate mitigation must be assessed.</p> <ul style="list-style-type: none"> Acknowledgement is made that the Environment Agency will be consulted "to help determine the detailed method statement governing each crossing". It should be noted that any works, temporary or permanent, to an Ordinary Watercourse, not within an Internal Drainage Board area, will require Land Drainage Consent from the Lead Local Flood Authority (Suffolk County Council). If the draft DCOs intend to disapply the Land Drainage Act 1991 there must be Protective Provisions. Methods of working must be in place to reduce increased flood risk or pollution. Further details required (such as borehole logs) to inform the risk of groundwater flooding. Request for further information on flood risk impacts. Request for further information on flood alleviation. The onshore substations are incorrectly identified as being within the Hundred River catchment when they are located within the Friston Watercourse catchment. 			<p>There are no ordinary watercourse crossings present along the onshore cable route. This has been clarified in section 20.6.1.1 of Chapter 20 Water Resources and Flood Risk of the ES.</p> <p>Chapter 6 Project Description of the ES details the location and size of each CCS. CCS (which will be a maximum of 16,500m² in size) will not require their own SuDS ponds</p> <p>The risk of groundwater flooding is considered as part of the Flood Risk Assessment (FRA) presented in Appendix 20.3 to the ES.</p> <p>The production, and content of, of the Surface Water Drainage Plan (SWDP) is clarified in Table 20.3 of Chapter 20 Water Resources and Flood Risk of the ES. The SWDP will be developed and implemented in the pre-construction period as part of the CoCP.</p> <p>The onshore substation and National Grid infrastructure are identified as being located within the catchment of the Friston Watercourse, detailed within section 20.5.1.1 of Chapter 20 Water Resources and Flood Risk of the ES. The assessment considers the whole Friston Watercourse catchment as a receptor</p> <p>The assessment considers the whole Friston Watercourse catchment as a receptor. Figure 20.1 in Chapter 20 Water Resources and Flood Risk of the ES has been updated to clarify the Main River extent.</p>

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	<ul style="list-style-type: none"> It is identified in Appendix D that the Main River through Friston is at much higher risk of silt laden run-off then presented in the PEIR. There has been no assessment of how the National Grid substation and CCS will impact surface water flow paths during construction and operation. It is unclear what storm event the surface water system is being designed to. Unless there is a clear commitment to all impermeable areas being removed by 2069 then SuDS must be designed with a climate change allowance of 40%, as per national guidance. The FRA incorrectly identifies the substations as outside of the extent of the 1:1000 year surface water flooding event, when the National Grid substation is located on a 1:30, 1:100 & 1:1000 surface water flow path. The proposed 3m bunding directly north and west of the National Grid substation also intercepts surface water flow paths. There has been no assessment on the redirection of flows. The Councils are confident the mitigation measures applied to the Main River crossing could be applied to Ordinary Watercourse crossings to mitigate any impacts. However, this may be onerous and over-engineered when the type of watercourse being crossed is compared. Strongly suggest the Applicant detail mitigation measures for work to Ordinary Watercourses 			<p>Current design life of the onshore substations is assumed to be at least 25 years at which point decommissioning will reinstate to previous condition where possible. The current design is 1:200 year event. This is clarified in Appendix 20.3 Flood Risk Assessment of the ES and Table 20.3 of Chapter 20 Water Resources and Flood Risk of the ES.</p> <p>Changes to surface water flow paths in relation to the presence of the National Grid infrastructure and the onshore substations are addressed in sections 20.6.1.4.1 and 20.6.2.1.1 of Chapter 20 Water Resources and Flood Risk of the ES. This is also addressed within Appendix 20.3 Flood Risk Assessment of the ES, section 20.4.3.6. Appendix D submitted with this response has been interrogated</p>

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	<p>separately and acknowledge the requirement to obtain Land Drainage Consent. The use of clear span bridges is preferred to be used wherever possible as opposed to culverts.</p> <ul style="list-style-type: none"> The connection of Friston Watercourse to the low point in Church Road is not acknowledged, which is an area of high flood risk. FRA is inadequate in demonstrating solutions for how the proposed project is likely to be affected by current or future flooding from any source and whether it will increase flood risk elsewhere. Up-to-date information on flood risk from the Friston Watercourse has not been used. 			
	<p>Drainage</p> <ul style="list-style-type: none"> Concerns about agricultural drainage. Concerns about drainage route through village allotments. It is not clear what edge drains consist of or what they are designed to do. Construction Consolidation Sites (CCS) require their own SuDS which should be provided in the SWDP Unclear whether the proposed surface water drainage strategy will utilise the Qbar or Long Term Storage method of discharge. The drainage strategy will impact the amount of space required for SuDS. 	<p>Save our Sandlings; Local Community Members; Friston Parish Council / SASES; SCC; SCDC (now East Suffolk Council)</p>	9	<p>A Surface Water and Drainage Plan (within the OCoCP (Document Reference: 8.1)) will be developed in line with the requirements of the NPPF and NPS EN-05, which will ensure that there are no increases in runoff from the substation site during construction or operation. This will specify the Sustainable Drainage System (SuDS) measures that are required to attenuate flows and ensure that discharges do not exceed the greenfield runoff rate for the site as it currently stands.</p> <p>The Applicant has committed to providing an additional 'surface water management SuDS basin' to reduce water in-flow rates to the substation area and potentially reduce flood risk for the village of Friston, in addition to the Surface Water Drainage Strategy currently proposed. Confirmation of the size, volume and location of this additional 'surface water management SuDS</p>

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				<p>basin' will follow establishment of an appropriate catchment hydraulic model and the detailed design of the onshore substation and National Grid substation.</p> <p>The method of discharge will be in line with the SuDS discharge hierarchy.</p> <p>Further detail is provided in Chapter 20 Water Quality and Flood Risk of the ES.</p> <p>Chapter 6 Project Description of the ES details the location and size of each CCS. CCS (which will be a maximum of 16,500m² in size) will not require their own SuDS ponds.</p> <p>Temporary cut-off drains would be installed parallel to the trench-line, before the start of construction, to intercept soil and groundwater before it reaches the cable trench – see Chapter 6 Project Description of the ES.</p> <p>Final design will be agreed post-consent as part of the process of discharging a requirement of the draft DCO</p> <p>The proposed surface water drainage is clarified in Appendix 20.3 Flood Risk Assessment of the ES and has been taken into consideration through the design process of the SuDS.</p>

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	<p>Flooding</p> <ul style="list-style-type: none"> Concerns about the bottom of Sizewell Hall Lane flooding. Flooding concerns at substation site and impacts on Friston. Proposed flood mitigation is not an acceptable solution. The land the Applicant wishes to build on is the main contributing factor of historic surface flooding to the village of Friston. Concern of 'high risk' level 3 flood risk. Replacing greenfield agricultural land with a large construction (covering 30 acres) will result in increased flood risk. Increase in risk of flooding to properties close to the 'ditch' and culvert. Most recent flood was 1993, concern that the risk would increase. Area considering building on is at risk of flooding due to sea level rises. Water run off down into the Fromus Valley, leading inevitably to flooding and pollution both in Sternfield and Benhall and quite possibly further down the river Fromus to Stratford St Andrew and beyond. Low Road in Friston has flooded at least once in the last 25 years. Church and village hall car park has been flooded in the past. 	<p>Save our Sandlings; SCDC (now East Suffolk Council) Meeting; Local Community Members; Church of St Mary the Virgin, Friston; Friston Parish Council / SASES; SCC; SCDC (now East Suffolk Council)</p>	140	<p>A Flood Risk Assessment was carried out and identifies those realistic worst case parameters of the onshore infrastructure that are relevant to potential impacts on water resources and flood risk during construction, operation and decommissioning phases of the proposed East Anglia ONE North and Two projects. Changes in surface water runoff as a result of the increase in impermeable area from the onshore substations will be attenuated and discharged at a controlled rate. The controlled runoff rate will be equivalent to the greenfield runoff rate. The full specification for the attenuation ponds will be addressed as part of detailed design. A Surface Water and Drainage Plan (SWDP) will be developed and implemented to minimise water within the cable trench and ensure ongoing drainage of surrounding land and the plan will be submitted with the DCO application.</p> <p>The Applicant has committed to providing an additional 'surface water management SuDS basin' to reduce water in-flow rates to the substation area and potentially reduce flood risk for the village of Friston, in addition to the Surface Water Drainage Strategy currently proposed. Confirmation of the size, volume and location of this additional 'surface water management SuDS basin' will follow establishment of an appropriate catchment hydraulic model and the detailed design of the onshore substation and National Grid substation.</p>

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Topic	Feedback	Stakeholders	Number of times feedback received	Action
	<ul style="list-style-type: none"> Cable installation across the River Hundred Special Landscape Area (SLA) and other sensitive areas which are prone to flooding not only pose a threat of flooding the installation works but present a challenge in maintaining the function of the river floodplain to prevent flooding in downstream areas. Risk of flooding and impact on the River Alde floodplain Concern over River Hundred flooding and the possible utilisation of a 24 hour diesel engine powered pump. The Applicant should be looking to reduce the existing flood risk to the village [Friston] and not merely a half-hearted attempt at future mitigation. Two SUDS ponds seem inadequate as a solution to the acres of water run-off from the substations. SUDS suggest this is an urban not rural situation. Risk of sediment laden run off following stripping of topsoil. Increased flood risk through small localised flow paths. Leiston has a history of surface water flooding and location of a CCS in this area that could increase flood risk is discouraged. During operation the cable routes are not expected to present any surface water or ground water flood risk. Placement of stockpiles along the route of the National Grid substation and CCS flow paths has 			<p>Clarified in Table 20.3 of Chapter 20 Water Resources and Flood Risk of the ES which provides detail on the measures which will be taken to prevent top soil run-off into surface water.</p> <p>A Soil Management Plan (SMP), including construction method statements for soil handling, would be produced by a competent contractor and agreed with the relevant regulator, in advance of the works. This would be completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available to discharge a requirement of the draft DCO.</p> <p>The contractor would be required to comply with the SMP (presented in the OCoCP (Document Reference: 8.1) submitted with this DCO application). This is detailed further in Chapter 21 Land Use of the ES.</p> <p>The production, and content of, of the Surface Water Drainage Plan (SWDP) is clarified in Table 20.3 of Chapter 20 Water Resources and Flood Risk of the ES. The SWDP will be developed and implemented in the pre-construction period as part of the CoCP.</p> <p>Changes to surface water flow paths in relation to the presence of the National Grid infrastructure and the CCSs are addressed in sections 20.6.1.4.1 and 20.6.2.1.1 of Chapter 20 Water Resources and Flood Risk of the ES. This is also addressed within Appendix 20.3 Flood Risk Assessment of the ES, section 20.4.3.6.</p>

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	<p>potential to increase surface water flood risk in Friston.</p> <ul style="list-style-type: none"> It is unclear how the proposed development intends to comply with NPS EN-1. It is not clear who will maintain any SuDS installed. If grading is completed prior to the installation of surface water drainage, there is an increased risk of sediment laden runoff entering the downstream watercourse. Failure of acknowledgement that Friston has existing flood risk from heavy rainfall at Friston Moor. The substations are to be sited close to Grove Road at a high point and any run-off from this location will exacerbate flooding and run the risk of contamination in the village. Discharging water in to the ground or in to Friston Watercourse as a priority is an unacceptable risk to the village. 			<p>Current design life of the onshore substations is assumed to be at least 25 years at which point decommissioning will reinstate to previous condition where possible. The current design is 1:200 year event. This is clarified in Appendix 20.3 Flood Risk Assessment of the ES and Table 20.3 of Chapter 20 Water Resources and Flood Risk of the ES.</p> <p>The SuDs will be maintained as part of the onshore substation and National Grid infrastructure operation. Clarified in Table 20.3 of Chapter 20 Water Resources and Flood Risk of the ES</p> <p>Clarified in Table 20.3 of Chapter 20 Water Resources and Flood Risk of the ES which provides detail on the measures which will be taken to prevent sediment run-off into surface water. Grading is not considered as a required embedded mitigation measure</p>
	<p>Water supplies</p> <ul style="list-style-type: none"> Water scarcity is already an issue and not clear how the project will impact this. 	Local Community Members	1	<p>The onshore development area crosses Source Protection Zones (SPZ). If works are required within or close to the identified SPZ, then it may be appropriate for consultation with the Environment Agency to ensure that any adverse effects are minimised. Prior to construction, this will include the development of a hydrogeological risk assessment meeting the requirements of Groundwater Protection Technical Guidance (Environment Agency 2017) and the Environment Agency's Approach to Groundwater</p>

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				<p>Protection (Environment Agency 2018) for this area of the works. The potential magnitude of these effects is, however, considered to be low.</p> <p>Table 21.4 in Chapter 21 Land Use of the ES states that the continuity of water supplies during the construction works would be ensured.</p>
	<p>Suggested Mitigation Measures</p> <ul style="list-style-type: none"> Bentonite wall around the site and additional pumping. Take into account flooding at River Hundred and protect homes in Gipsy Lane Aldringham if and when making plans to install cabling and construct a bridge across the river. A flood alleviation system should be carefully planned in consultation with all relevant bodies. Consideration should be given to taking the drain in a westerly direction (to the north of the village) from the SuDS basins thereby avoiding the village altogether. In the event that it is deemed necessary to discharge the water to the south (as currently planned) it is suggested that a more suitable route would be for the drain to follow a straight north-south line along the lane immediately to the west of Woodside Farm rather than through Woodside Farm, as this will necessitate a number of bends/changes in direction thereby impeding the flow of water. 	<p>Local Community Members; Aldringham-cum-Thorpe Parish Council; SCC; SCDC (now East Suffolk Council)</p>	18	<p>A Surface Water and Drainage Plan (within the OCoCP (Document Reference: 8.1)) will be developed in line with the requirements of the NPPF and NPS EN-05, which will ensure that there are no increases in runoff from the substation site during construction or operation. This will specify the Sustainable Drainage System (SuDS) measures that are required to attenuate flows and ensure that discharges do not exceed the greenfield runoff rate for the site as it currently stands.</p> <p>The Applicant has committed to providing an additional 'surface water management SuDS basin' to reduce water in-flow rates to the substation area and potentially reduce flood risk for the village of Friston, in addition to the Surface Water Drainage Strategy currently proposed. Confirmation of the size, volume and location of this additional 'surface water management SuDS basin' will follow establishment of an appropriate catchment hydraulic model and the detailed design of the onshore substation and National Grid substation. The method of discharge will be in line with the SuDS discharge hierarchy.</p>

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Topic	Feedback	Stakeholders	Number of times feedback received	Action
	<ul style="list-style-type: none"> Cable installation across the River Hundred Special Landscape Area (SLA) and other sensitive areas which are prone to flooding not only pose a threat of flooding the installation works but present a challenge in maintaining the function of the river floodplain to prevent flooding in downstream areas. Therefore, the Applicant will need to take this into consideration when designing appropriate flood mitigation measures. The Applicant could consider a much more 'sustainable' and environmentally positive method (e.g. rain gardens) of dealing with run-off. Permeable ponds and water garden areas with overflow would also incorporate huge pluses for misplaced wildlife. the Applicant could even create a stream with amenity value for the local human population, thus turning a problem into a solution. If the above is unavoidable, the CCS must have a SuDS, which must have a factor of safety of 10 if using infiltration. Maintenance and monitoring must be more frequent than other SuDS for this location and the sizing of water storage structures must take into account the risk to Leiston. Measures to manage surface water run off need to be in place prior to construction work. Concern about the gaps in the information provided within the consultation documents and wish to see the Applicant explore the opportunity to provide betterment for the community of Friston by reducing the surface water flood risk. 			<p>Changes in surface water runoff as a result of the increase in impermeable area from the onshore substations and National Grid infrastructure will be attenuated and discharged at a controlled rate in consultation with the Lead Local Flood Authority (LLFA) (Suffolk County Council) and Environment Agency, using the aforementioned embedded mitigation measures.</p> <p>The controlled runoff rate will be equivalent to the greenfield runoff rate.</p> <p>Chapter 6 Project Description of the ES details the location and size of CCS. CCS (which will be a maximum of 16500m² in size) will not require their own SuDS ponds. This has been considered when completing the FRA presented in Appendix 20.3 Flood Risk Assessment of the ES.</p> <p>Clarified in Table 20.3 of Chapter 20 Water Resources and Flood Risk of the ES which provides detail on the measures which will be taken to prevent flood risk to Friston.</p> <p>In December 2018, Defra consulted on plans to introduce the principle of Net gain to the Planning System in England. A Defra's recent response to consultation affirms their intention to bring forward legislation to mandate Net Gain within the Environment Bill but confirms their position that Nationally Significant</p>

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	<ul style="list-style-type: none"> The potential to reduce flood risk at Friston should be discussed further with SCC and the EA. 			<p>Infrastructure Projects (NSIPs) and marine developments will remain out of scope of the mandatory requirement in the Environment Bill.</p> <p>SPR will continue to work constructively with Defra and key stakeholders such as Natural England to support the preparation of guidance on the application of Net Gain and in their work to establish potential approaches to achieving biodiversity net gains for NSIPs and marine developments.</p>
	<p>Surface Water Drainage Plan and Construction Method Statement</p> <ul style="list-style-type: none"> Temporary haul and access roads should be considered as impermeable areas in design of the SWDP. The formation of the cable route from the landfall to the substation site involves the removal of the top soil. Once topsoil has been stripped from the cable corridor there is an inherent risk of increased sediment laden surface water run-off. No details have been stated regarding how this will be managed. SCC and SCDC expect this to be included in the Construction Method Statement (CMS). Mitigation of flooding is required in the SWDP and CMS. A programme of Ordinary Watercourses monitoring throughout the construction phases must be specified in the CMS. 	Local Community Member; SCC; SCDC (now East Suffolk Council)	3	<p>The production, and content of, of the Surface Water Drainage Plan (SWDP) is clarified in Table 20.3 of Chapter 20 Water Resources and Flood Risk of the ES. Measures to ensure that any redirected overland flow routes do not cause an increase in off-site flood risk will be incorporated into the SWDP.</p> <p>Temporary haul roads and access roads have been considered when completing the Flood Risk Assessment presented in Appendix 20.3.</p> <p>Embedded mitigation measures are clarified in Table 20.3 of Chapter 20 Water Resources and Flood Risk of the ES which provides detail on the measures which will be taken to prevent top soil run-off into surface water. A Soil Management Plan (SMP), including construction method statements for soil handling, would be produced by a competent contractor and agreed with the relevant regulator, in advance of the works. This would be</p>

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				<p>completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available to discharge a requirement of the draft DCO.</p> <p>The contractor would be required to comply with the SMP (presented in the OCoCP (Document Reference: 8.1) submitted with this DCO application). This is detailed further in Chapter 21 Land Use of the ES.</p> <p>The production, and content of, of the Surface Water Drainage Plan (SWDP) is clarified in Table 20.3 of Chapter 20 Water Resources and Flood Risk of the ES. The SWDP will be developed and implemented in the pre-construction period as part of the CoCP.</p> <p>There are no ordinary watercourse crossings present along the onshore cable route. This has been clarified in section 20.6.1.1 of Chapter 20 Water Resources and Flood Risk of the ES.</p>
Land Use	<p>PEIR Methodology</p> <ul style="list-style-type: none"> Section 22.5.2.1, Para. 91 Soil is a finite resource that fulfils many important functions and services (ecosystem services) for society, for example as a growing medium for food, timber and other crops, as a store for carbon and water, as a reservoir of biodiversity and as a buffer against pollution. It is therefore important that the soil resources are protected and used sustainably. the Applicant should consider the following issues as part of the Environmental Statement: 	NE	3	<p>The extent to which soil resource will be impacted upon is detailed within section 21.6.1.4 of Chapter 21 Land Use of the ES. This section includes details of a range of embedded mitigation measures which may be employed to reduce the effect of the construction activities on the soil resource.</p> <p>The data used to inform this assessment is detailed within section 21.4.2 of Chapter 21 Land Use of the ES. This includes the use of the ALC data set.</p>

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	<ul style="list-style-type: none"> 1. The degree to which soils are going to be disturbed/harmed as part of this development and whether 'best and most versatile' agricultural land is involved. This may require a detailed survey if one is not already available. For further information on the availability of existing agricultural land classification (ALC) information see www.magic.gov.uk NETechnical Information Note 049 - Agricultural Land Classification: protecting the best and most versatile agricultural land also contains useful background information. 2. If required, an agricultural land classification and soil survey of the land should be undertaken. This should normally be at a detailed level, e.g. one auger boring per hectare, (or more detailed for a small site) supported by pits dug in each main soil type to confirm the physical characteristics of the full depth of the soil resource, i.e. 1.2 metres. 3. The Environmental Statement should provide details of how any adverse impacts on soils can be minimised. Further guidance is contained in the Defra Construction Code of Practice for the Sustainable Use of Soil on Development Sites. 			Impacts to Environmental Stewardship Schemes (ESS) are given in section 21.6.1.2 of Chapter 21 Land Use of the ES. The Applicant will consult with affected landowners to agree the necessary compensations.

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	<ul style="list-style-type: none"> Section 22.5.2.1, Para. 91 Consideration should be given to those areas in stewardship agreements and discussion held with the Rural Payments Agency and the agreement holder at the earliest opportunity 			
	<p>Surveys and pre-works</p> <ul style="list-style-type: none"> The Applicant should carry out full soil surveys prior to entry (of the cable) to enable proper restoration to take place. Such tests should assess (as a minimum): mineral and nutrient content; soil composition; pathogen content. A full pre-works schedule of drainage installations is required, undertake repair and alter schemes as required. 	Local Community Member	7	<p>A Soils Management Plan (SMP), including construction method statements for soil handling, would be produced by a competent soil science contractor and agreed with the Local Planning Authority, in advance of the works. This would be completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available. The contractor would be required to comply with the SMP. The SMP is secured under the requirements of the draft DCO.</p> <p>Any impact on the soil resource is not predicted to extend beyond the onshore development area. The precise soil type and characteristics will differ between and within individual fields and will be captured within the SMP.</p> <p>Where possible, land drainage systems would be maintained during construction and reinstated on completion. Consultation with landowners and occupiers to establish existing drainage arrangements, location of drains and any other information. In addition, following</p>

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				<p>construction, field drainage systems and ditches would be fully reinstated where possible in consultation with landowners / occupiers.</p> <p>The cable circuits would nominally be installed in a flat formation (each cable core installed alongside each other). This would allow the cables (and protective tiles and tape) to be laid below the level of typical field drainage pipes and other underground services to minimise impact and interaction where possible.</p> <p>In Chapter 21 Land Use of the ES, see section 6.1.4 for further detail on embedded mitigation procedures and Table 21.4 for further detail on the Soils Management Plan.</p>
	<p>Land use and loss of land</p> <ul style="list-style-type: none"> • Development should not be allowed on agricultural land – food production is required with increasing population. • Impacts on local farmers. • Loss of approx. 11 acres of prime agricultural land at Friston. • Short to medium term disturbance to soil structure which will compromise productive capacity and versatility of cropping. • Topsoil 'loss' due to compaction and wash. • Concern over loss of 124 Ha of agricultural, woodland and recreational land. 	<p>Local Community Members; Darsham Parish Council; SCC, SCDC (now East Suffolk Council); Friston Parish Council / SASES</p>	47	<p>A Soils Management Plan (SMP), including construction method statements for soil handling, would be produced by a competent soil science contractor and agreed with the Local Planning Authority, in advance of the works. This would be completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available. The contractor would be required to comply with the SMP. The SMP is secured under the requirements of the draft DCO.</p> <p>The construction footprint has been minimised as far as practicable (see Chapter 6 Project Description and</p>

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	<ul style="list-style-type: none"> • Disruption to the availability of grazing. • Sterilisation of land from ancillary and inability to build new agricultural buildings within the cable route easement. • Disruption to cropping. • Decrease in productive capacity. • Disturbance to soil structure will compromise productive capacity and versatility of cropping. • Impact of Herdwick sheep lambing due to noise impacts during the lambing season. • Concern over treatment and reinstatement of soil during and after construction. • The integrity of the reservoir serving the Sizewell Estate should be preserved during construction works. • Concern over reference to mitigation land on the Sizewell Estate, if such mitigation is permanent it would mean losing good arable land from the farming business, temporary areas of mitigation land would be considered only subject to the agreement of terms and confirmation of exact use. • Landfall Construction site impact on rescue horses. • Livestock will be disrupted by noise and pollution that may result in poor health. • The cable corridor for the projects predominantly crosses agricultural land. Agricultural land is vulnerable to structural damage, erosion, compaction and the introduction of notifiable weeds. 			<p>Chapter 4 Site Selection and Assessment of Alternatives of the ES). Land would be reinstated to its pre-construction condition as soon as reasonably possible following cable installation, dependent on weather conditions and excluding the onshore substation, National Grid infrastructure, CCS and jointing bay locations.</p> <p>Impacts on agricultural land taken out of existing use are detailed within section 21.6.1.1 of Chapter 21 Land Use of the ES.</p> <p>This section, and section 21.5 of Chapter 21 Land Use of the ES, provides a comparison of the agricultural land taken by the onshore substation and National Grid infrastructure in relation to Suffolk County as a whole.</p> <p>The onshore development area has been refined to avoid interaction with the best agricultural land where possible. Chapter 2 Need for the Project of the ES presents the policy support for the proposed East Anglia TWO Project.</p>

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	<ul style="list-style-type: none"> The works may significantly degrade soil quality and future agricultural productivity. In particular soil stripping, the formation and long-term presence of stockpiled top soil and the creation of a hard-packed haul road is likely to impact arable land. Scheme design should seek to minimise impact on the best and most versatile agricultural land (as stated in NPS EN-1). 			
	<p>Soils Management Plan</p> <ul style="list-style-type: none"> Mitigation measures in the form of a Soils Management Plan (SMP) should be adopted to ensure agricultural land is suitably reinstated and reused. 	<p>SCC; SCDC (now East Suffolk Council)</p>	<p>1</p>	<p>A Soils Management Plan (SMP), including construction method statements for soil handling, would be produced by a competent soil science contractor and agreed with the Local Planning Authority, in advance of the works. This would be completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available. The contractor would be required to comply with the SMP. The SMP is secured under the requirements of the draft DCO.</p> <p>The extent to which soil resource will be impacted upon is detailed within section 21.6.1.4 of Chapter 21 Land Use of the ES. This section includes details of a range of embedded mitigation measures which may be employed to reduce the effect of the construction activities on the soil resource. This includes the production of a SMP, which is secured by the requirements of the draft DCO. As part of the decommissioning phase of the proposed East Anglia TWO project, land reinstatement will be</p>

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				undertaken throughout the onshore development area where possible.
	<p>Land Use and Compensation Mitigation Suggestions</p> <ul style="list-style-type: none"> Due to topsoil loss, the Applicant should identify potential donor sites for soils of matching quality in advance of carrying out works. Restore everything to its current state after construction. The Applicant should protect farms from mains system damage and where required, provide or cover the cost of, diverting the main to ensure cropping is not interrupted. Any losses arising from inability to effectively utilise irrigation to be compensated by the Applicant. If production is not possible, there is a risk that a recent Government Grant of £54,000 may need to be repaid, any losses will need to be compensated. Losses due to being unable to claim the Basic Payment Scheme (or a future replacement after Brexit) will need to be compensated by the Applicant. 	Local Community Members	51	<p>The continuity of water supplies during the construction works would be ensured.</p> <p>A Soils Management Plan (SMP), including construction method statements for soil handling, would be produced by a competent soil science contractor and agreed with the Local Planning Authority, in advance of the works. This would be completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available. The contractor would be required to comply with the SMP. The SMP is secured under the requirements of the draft DCO.</p> <p>Where possible, drainage systems would be maintained during construction and reinstated on completion. The continuity of water supplies during the construction works would be ensured.</p> <p>Areas of land temporarily excluded from the landowners, occupiers or the public have been minimised through the route selection process as described in Chapter 4 Site</p>

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	<ul style="list-style-type: none"> Should the works impact on any of the permanent or temporary options of the Countryside Stewardship Scheme, the Applicant will need to apply for a derogation from NE and will be responsible for any losses suffered as a result of its development. Losses associated with reduced access to bridleways will need to be compensated by the Applicant. Losses associated with reduced capacity to shoot will need to be compensated by the Applicant. Compensation will be sought if diversification developments are not possible. The Applicant will be responsible for losses or costs incurred as a result of the disturbance. Compensation will be sought from loss of value of holiday cottage if sold during construction period and following completion of the scheme. As the cable route will impact properties mitigation measures should be agreed including a reinstatement programme. 18 months of prior notice will be required of when access is required. Some impacts and mitigation measures for farms include: <ul style="list-style-type: none"> Access to the main livestock building must be maintained; Mains water supply connected to each of the buildings and field troughs need to be maintained; 			<p>Selection and Assessment of Alternatives of the ES, and will be minimised further through detailed design and discussion with landowners.</p> <p>Specific landowner requests are assessed on a case by case basis. A summary of landowner consultation is provided in Appendix 10.9 of the Consultation Report.</p>

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	<ul style="list-style-type: none"> ○ The irrigation ring main and associated hydrants; ○ The electricity supply to the farm buildings, borehole and general lights that will be lost; and ○ The grass paddocks and the means of access to them must be maintained at all times. • The Applicant will need to compensate for losses due to loss in availability of grazing. • Footpaths should be maintained during the construction period and fencing retained or ancillary fencing erected to maintain the integrity and security of the Holding. • Protect mains system from damage, any losses arising from inability effectively utilise irrigation will be compensated for by the Applicant. • Impact on productive capacity will need to be compensated for. • Private water main to be protected where it crosses the cable route and haul road. Should not be damaged during construction. • Nursery and 'Gardens for the Hospice Scheme' should be compensated for if any losses arise. • A Soils Management Plan (SMP) should be produced by a competent contactor and agreed with the relevant regulator in advance of the works. Landowners should have a right to contribute and agree the terms of the SMP. • It is essential that land is returned to farming as soon as possible. 			

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	<ul style="list-style-type: none"> Minimising creating isolated land parcels permanently cutting off farm access routes and disrupting key assets such as utilities is essential. Irrigation systems should be maintained. If there is no feasible alternative to the drain being located on land north of Church Road Friston it is required that: <ul style="list-style-type: none"> Full consultation as to the precise route etc. of the drain (and there are no details at present as to the size, depth or easement width required); A lift and shift clause within an easement exercisable by our clients to enable the drain to be relocated (at the Applicant's expense) in the event that it interferes with the future permitted use of our clients' land The ability to make a future connection to that drain should that be required for the better storm water drainage of our clients' property; The full and proper reinstatement of the land following the laying of the drain; and Determination of the drainage easement in the event of the future decommissioning of the Project. 			

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Onshore Ecology	<p>PEIR Policy</p> <ul style="list-style-type: none"> NE recommends that in line with National Policy Statements there should be a clear ambition to provide net gain throughout the project development. There is currently no enhancement or net gain incorporated for habitats or species, NE advise that the project should provide a legacy in line with the 25 Year Environment Plan. National Policy Statement requires that developments show how the Applicant has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests.' NE recommends that the project aims moves away from no net loss and incorporates net gain at the earliest opportunity. Section 22.5.2.11, Para. 111 Consideration should be given to Leiston - Aldeburgh SSSI and coastal vegetated shingle in the case of a Bentonite or drilling mud outbreak. Information should be provided on engineering design, depth and break out contingencies. Section 22.5.2.1 The criteria of importance of land as set out in Table 22.9 should be revised and be in accordance with NPPF. 	NE	4	<p>Embedded mitigation is included in section 22.3 of Chapter 22 Onshore Ecology of the ES. The Applicant will continue to work constructively with Defra and key stakeholders such as NE to support the preparation of guidance on the application of Net Gain and in their work to establish potential approaches to achieving biodiversity net gains for NSIPs and marine developments.</p> <p>Consideration of Bentonite or drilling mud outbreak at Leiston-Aldeburgh SSSI - Such impacts are scoped out as per section 22.5.2.11 of Chapter 22 Onshore Ecology of the ES as agreed at the Onshore Ecology and Ornithology Expert Topic Group meetings held to date and presented in the Scoping Report (SPR 2017). Landfall will be made using HDD and therefore, there will be no direct or indirect impacts on the intertidal zone and so impacts on coastal vegetated shingle are not considered further.</p> <p>Table 22.8 of Chapter 22 Onshore Ecology of the ES is in accordance with NPPF.</p>

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	<p>PEIR Surveys</p> <ul style="list-style-type: none"> The Phase 1 and 2 2018 ecology surveys cover the indicative onshore development area and not the final East Anglia Two development Area. Further studies should be conducted across the full red line boundary of the site. Section 22.5.3.4 A commitment to conduct water vole and otter pre-construction surveys (within the optimal survey window) for both species to confirm that both species remain absent, i.e. no changes to the findings of the 2018 survey should be included in the ES. Section 22.5.3.5, Para. 130 The 5 water bodies which could not be accessed for the 2018 Great Crested Newt survey should be surveyed pre construction and suitable mitigation incorporated in any CMP/ECMP. Section 22.5.3.6, Para. 136 No further reptile surveys will be undertaken as agreed in Expert Topic Group. NE cannot find reference to this within the meeting minutes. NE advise reptile surveys are undertaken in accordance with NE standing advice. Section 22.6.1.11, Para. 205 States that no reptile surveys are required, as was agreed at the Expert Topic Group in April. NE cannot find reference to this agreement in the meeting minutes. Nevertheless, NE advise that reptile surveys are completed to quantify potential impacts of the development on reptiles and to plan the mitigation 	NE	6	<p>A further survey was conducted in March 2019, as presented to the Expert Topic Group in May 2019. Results of this Phase 1 Addendum are provided as Annex 1 of the 2018 Extended Phase 1 Habitat Survey (Appendix 22.3 of the ES).</p> <p>Appendix 22.5 of the ES details the water vole and otter survey undertaken which concluded that these species were assumed absent. Prior to works commencing, a pre-construction survey (within the optimal survey window) for both species may be undertaken to confirm that both species remain absent, i.e. no changes to the findings of the 2018 survey.</p> <p>The 5 water bodies which could not be accessed for the 2018 Great Crested Newt survey should be surveyed pre construction and suitable mitigation incorporated in any CMP/ECMP.</p> <p>Response to reptile surveys comment - Methodologies for onshore ecological receptors have been discussed and agreed with stakeholders at the Onshore Ecology and Ornithology Expert Topic Group meetings held to date. Section 22.4 of Chapter 22 Onshore Ecology of the ES provides the details of the methodologies used to inform the ES.</p> <p>Survey approach was presented in Expert Topic Groups and no objections were raised. The Extended Phase 1 Habitat Survey (Appendix 22.3) identified small areas of</p>

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	<p>works. The Phase 1 confirms reptiles use of the proposed development area. If suitable reptile habitat is available assume reptile presence. Reptile mitigation should ensure that there is no net loss of local reptile conservation status, by providing sufficient quality, quantity and connectivity of habitat to accommodate the reptile population in the long term, either on site or at an alternative site nearby. There is currently insufficient information provided to conclude level of effect.</p> <ul style="list-style-type: none"> Section 22.5.3.8 , Para. 139 Within the Leiston Aldeburgh SSSI the variety of water bodies and terrestrial habitats provides suitable breeding and hunting areas for many species of dragonfly and damselfly, including the nationally scarce hairy dragonfly Brachytron pratense. NE are surprised therefore that no suitable habitat to support invertebrates was noted during the Extended Phase 1 Habitat Survey. NE would advise this species which are included on the citation are considered within the ES. 			<p>suitable reptile habitat. There is also a commitment to pre-construction reptile surveys. Section 22.6 of Chapter 22 Onshore Ecology of the ES presents the impacts on sensitive receptors.</p> <p>Leiston Aldeburgh SSSI (water body as a habitat for invertebrates) - No suitable habitat was noted during the Extended Phase 1 Habitat Survey for this species within the onshore development area. There will be no change to the Leiston Aldeburgh SSSI because the HDD construction method used at the landfall will avoid any construction footprint overlapping the SSSI.</p>
	<p>PEIR Baseline</p> <ul style="list-style-type: none"> Section 22.5.2, Para. 89 Within terrestrial habitats, consideration should be given to ancient trees and woodland, and woodland habitat of suitable quality but not formally designated as Ancient Woodland and their location illustrated. Table 22.9 Advise that all nationally protected species, are considered of at least moderate 	NE	5	<p>Impacts to woodlands are presented in section 22.5.2 of Chapter 22 Onshore Ecology of the ES.</p> <p>Likely significant effects on European sites (SPA and Ramsar) are considered separately in the Information to Support Appropriate Assessment.</p> <p>Greater detail on the potential difference in impacts, e.g. between an open cut or HDD methodology for crossing</p>

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	<p>importance. Currently badgers are considered (PEIR section 22.5.3.2) , ‘as a regularly occurring population of a nationally important species which is not threatened or rare in the country, badgers are considered to be of low importance.’</p> <ul style="list-style-type: none"> Table 22.13 The description of Minsmere to Walberswick SAC should include Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site; Perennial vegetation of stony banks. Table 22.13 Should include details of the features of interest of the SPA and Ramsar. Table 22.13 Features of Alde-Ore Estuary Ramsar, SPA, SSSI and Alde-Ore & Butley Estuaries SAC should be clearly identified. 			<p>the SPA is provided in Chapter 4 Site Selection and Assessment of Alternatives, and section 22.6.1 of Chapter 22 Onshore Ecology of the ES, and taken into consideration for assessing construction impacts.</p> <p>Badgers are not considered to be rare or threatened within the region therefore do not meet the criteria for ‘moderate’ as being threatened or rare in the region - Table 22.8 and section 22.5.3.2 of Chapter 22 Onshore Ecology of the ES.</p> <p>Annex I habitats listed in Table 22.12 of Chapter 22 Onshore Ecology of the ES. Perennial vegetation noted; addressed in text within Table 22.13 of Chapter 22 Onshore Ecology of the ES.</p> <p>Features of interest in SACs, SSSIs, SPAs and Ramsar listed in Table 22.12 of Chapter 22 Onshore Ecology of the ES.</p>
	<p>PEIR Methodology</p> <ul style="list-style-type: none"> Section 22.6.1.8, Para. 185 Developer states that arable and hedgerow habitat provide sub optimal foraging habitat for badgers. NE would like to see an indicative assessment of the badger foraging habitat in the area, setts that would likely be destroyed and habitat that would be created 	NE	1	<p>Pre-construction surveys for badger will be undertaken – this is deemed sufficient as badger, by nature, frequently create new setts and abandon others. They will also forage in varying locations, therefore the rationale to survey pre-construction is valid in order to obtain the most accurate data. If setts cannot be avoided, then sett closure (under licence) would be undertaken and artificial setts created.</p>

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	elsewhere in the territory by either habitat creation or enhancement.			
	<p>PEIR Impact</p> <ul style="list-style-type: none"> Any risk of a reduction in or loss of a terrestrial or marine European Site should be judged to be a 'likely significant effect', and the full significance of its impact on a site's integrity should be further tested by appropriate assessment. Section 22.4.3.3, Table 22.10 The magnitude of impact table defines 10-20 % habitat loss criteria as medium and less than 10 % as low. Any risk of a reduction in or loss of a terrestrial or marine European Site should be judged to be a 'likely significant effect', and the full significance of its impact on a site's integrity should be further tested by appropriate assessment. An appropriate assessment should examine the predicted loss in more detail, clearly identifying whether or not it would affect the habitats or supporting habitats of the European Site's qualifying features within that site. There is currently insufficient information provided within the PEIR regarding the likely impacts and proposed mitigation to confidently reach the 	NE; The Wildlife Trusts / Suffolk Wildlife Trust	17	<p>Likely significant effects on European sites (SPA and Ramsar) are considered separately in the Information to Support Appropriate Assessment.</p> <p>Greater detail on the potential difference in impacts, e.g. between an open cut or HDD methodology for crossing the SPA is provided in Chapter 4 Site Selection and Assessment of Alternatives, and section 22.6.1 of Chapter 22 Onshore Ecology of the ES, and taken into consideration for assessing construction impacts.</p> <p>Table 22.4 of Chapter 22 Onshore Ecology of the ES provides mitigation measures embedded into the proposed East Anglia TWO project design.</p> <p>Impacts to habitats and associated mitigation are addressed in section 22.6 of Chapter 22 Onshore Ecology of the ES and additional mitigation measures proposed throughout this section as appropriate.</p>

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	<p>current conclusions of no Likely Significant Effect. Greater detail will need to be provided in the ES.</p> <ul style="list-style-type: none"> Section 22.6.1.8.5, Para. 189 & 185 Currently insufficient information has been provided to conclude significance of impact to badgers. Section 22.6.1.12, Para. 208 Further information needs to be provided within the ES on management of Himalayan balsam on Hundred River and preventing effects on designated sites. Section 22.6.1.1.1, Para. 148 NE welcome that the proposed EA2 project has committed to a long HDD at the landfall, which avoids any interaction with Leiston-Aldeburgh SSSI. However, consideration should be given in the ES to the possibility of Bentonite and drilling mud breakout and appropriate safeguards put in place. There is no consideration of the impact of noise or vibration on the ecology of the area, in the ecology or noise and vibration chapters. This should be considered and included in the ES. Section 22.6.1.6, Para 178 Potential impacts of alternative HDD and open cut trenching options, should be provided in case HDD is not possible. Section 22.6.1.6, Para. 178 The impact on coastal habitat from bentonite and drilling mud break outs should be considered. Section 22.6.1.7, Para. 178 Intend to trench cut the Hundred River which feeds into Sandlings SPA, NE would expect to see an assessment of alternatives to include HDD under this water course and impacts outlined. 			<p>Noise disturbance on protected species is covered in sections 25.6 and 25.7 in Chapter 25 Noise and Vibration of the ES.</p> <p>Chapter 6 Project Description of the ES details the programme of works.</p> <p>Further detail is provided in the Information to support Appropriate Assessment report.</p> <p>Lighting impacts to protected species are addressed in sections 29.6 and 29.7 of Chapter 29 Landscape and Visual Impact.</p> <p>Himalayan Balsam on the Hundred River - Addressed in section 22.6.1.12 of Chapter 22 Onshore Ecology of the ES. No areas of Himalayan Balsam were identified within the onshore development area during the relevant surveys (Appendix 22.3 of the ES).</p> <p>Badgers - In the county, the badgers are neither threatened nor rare, meaning that the species is a low value receptor. The impact upon this receptor, without mitigation is high due to the potential loss of setts, however setts will be avoided where possible by the onshore cable route, a 30m buffer will be placed around setts and precautionary working methods employed to ensure the impact will be of minor adverse significance – section 22.6.1.8.5 of Chapter 22 Onshore Ecology of the ES. If setts cannot be avoided, then sett closure (under licence) would be undertaken and artificial setts created, ensuring the minor adverse significance.</p>

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	<ul style="list-style-type: none"> Section 22.6.1.8, Para. 185 Noise, additional lighting and vibration may all disturb badgers a suitable protection buffer zone should be adopted as best practice, in line with NE's standing advice. There is currently no consideration of the impact of noise and vibration on badgers. Section 22.6.1.9 Potential impacts to bat habitat should be clearly mapped with roosting, foraging and commuting areas shown in relation to the redline boundary. In combination assessment with proposed development at Sizewell C and any other foreseeable plans or projects. PEI Chapter 6, section 6.7.3.1.2 of the PEI, makes reference to using HDD to cross the site, however this is not considered in Chapter 22. Whilst it is acknowledged that the HDD technique has its own limitations and impacts, we consider that the two methods must be assessed in order to ensure that the one that causes the least ecological impact is put forward as part of any Development Consent Order (DCO). In addition to the comments made above, we recommend that advice is sought from the land owner and land manager (the RSPB) on this matter. The PEI (Chapter 22, Impact 5) identifies that a number of hedgerows will need to be crossed by the cable corridor, a suite of generic mitigation measures are proposed to mitigate impacts on hedgerows. The PEI concludes that the implementation of these measures will reduce the impact on hedgerows from "Major Adverse" to 			<p>Bentonite and drilling mud breakout - Appropriate management of the possibility of Bentonite and drilling mud breakout will be detailed within the final CoCP, submitted post-consent to discharge a requirement of the draft DCO. This will be produced in consultation with the appropriate regulators.</p> <p>Greater detail on the potential difference in impacts, e.g. between an open cut or HDD methodology for crossing the SPA is provided in Chapter 4 Site Selection and Assessment of Alternatives and section 22.6.1 of Chapter 22 Onshore Ecology of the ES, and taken into consideration for assessing construction impacts.</p> <p>The implications of crossing techniques on sensitive ornithological receptors is detailed further in Chapter 23 Onshore Ornithology of the ES.</p> <p>At the Hundred River, it is intended an open cut methodology is used to install cable ducts. Crossing methodology options are detailed in Chapter 6 Project Description. A trenchless technique may be used to cross the Hundred River but this does not include an HDD technique.</p> <p>Badger buffer zone - 30m buffer zone is included mitigation in paragraph 188 of Chapter 22 Onshore Ecology of the ES.</p>

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	<p>“Minor Adverse”. Whilst the potential mitigation identified does include the reduction in width of the cable corridor where it crosses a hedgerow, we consider that other mitigation measures such as horizontal directional drilling (HDD) or other trenchless techniques must be considered for such crossings. The use of such techniques could significantly reduce the impact of the cable route on hedgerows.</p> <ul style="list-style-type: none"> Also, whilst the PEI considers hedgerows to be affected by the cable route, it does not appear to assess impacts on those within the proposed substations area. Figure 22.4f shows that both the East Anglia TWO substation and the National Grid substation would result in the loss of hedgerows. No assessment of this or application of the mitigation hierarchy to see if impacts can be avoided or mitigated has been included in the PEI and therefore, we do not consider that the conclusion that impacts on hedgerows can be reduced to “Minor Adverse” with mitigation is correct based on the evidence available. The Wildlife Trusts / Suffolk Wildlife Trust note that the PEI (Impact 7) states that the preferred option for the crossing of watercourses will be using open cut trenches due to the narrow nature of the watercourses to be crossed. Whilst we acknowledge that this technique can be used successfully and with relatively little long-term impact, we query whether the use of alternative techniques (such as HDD) has been assessed as 			<p>Addressed in text in section 22.6.1.8 of Chapter 22 Onshore Ecology of the ES. Figure 22.8 details the findings of a bat roost survey.</p> <p>Greater detail on the potential difference in impacts, e.g. between an open cut or HDD methodology for crossing the SPA is provided in Chapter 4 Site Selection and Assessment of Alternatives and section 22.6.1 of Chapter 22 Onshore Ecology of the ES, and taken into consideration for assessing construction impacts. The implications of crossing techniques on sensitive ornithological receptors is detailed further in Chapter 23 Onshore Ornithology.</p> <p>HDD and trenchless techniques are not considered for crossing hedgerows. Where possible, a minimum swathe (16.1m) at specified important hedgerows will be used. This is deemed to be sufficient and suitable mitigation.</p> <p>See Technical Note within Annex 2 of the Extended Phase 1 Habitat Survey (Appendix 22.3 of the ES). This details the hedgerows and their composition within the substation area. All hedgerows will be reinstated where possible, as detailed in the OLEMS (Document Reference: 8.7) submitted with this DCO application, secured under the requirements of the draft DCO. A detailed hedgerow schedule has been provided as part of the OLEMS.</p>

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	<p>part of the PEI and whether the use of such alternatives may reduce the predicted residual construction impact below “Minor Adverse”?</p> <ul style="list-style-type: none"> The Wildlife Trusts / Suffolk Wildlife Trust also note from the bat survey report (PEI Appendix 22.4) that a single recording of a lesser horseshoe bat (<i>Rhinolophus hipposideros</i>) was made within the Transect 3 area. There is only one other known location for this species in Suffolk, located in the far west of the county, where a single lesser horseshoe bat was recorded in hibernation for a number of years. Prior to the West Suffolk record that had only been one other recording of this species in the county in the last 100 years¹. Lesser horseshoe bats are restricted to Wales, the south-west of England and eastwards to Warwickshire, with the closest known colony to Suffolk being over 90 miles away. The recording of this species within Transect 3 is therefore of considerable importance and should be investigated in more detail in order to ensure that no adverse impacts occur on this species, should a hitherto unknown population be present in the area. Chapter 22 of the PEI acknowledges that the proposed scheme is in close proximity to both Grove Wood County Wildlife Site (CWS), Knodishall Common CWS and Aldringham to Aldeburgh Disused Railway Line CWS. Whilst we note the conclusion that effects on these sites will be avoided, it must be ensured that all 			<p>At the Hundred River, it is intended an open cut methodology is used to install cable ducts. Crossing methodology Options are detailed in Chapter 6 Project Description of the ES. A trenchless technique may be used but this does not include an HDD technique.</p> <p>Further investigation is not considered necessary due to the robust survey records, mitigation and reporting for this species.</p> <p>The impact assessment baseline is detailed within section 22.5.3.3 of Chapter 22 Onshore Ecology of the ES, including reference to the recording of a lesser horseshoe bat. This baseline is fully considered when assessing potential impacts on bat populations in section 22.6.1.9 of Chapter 22 Onshore Ecology of the ES .</p> <p>Chapter 29 Landscape and Visual Impact addresses impact to these locations (Grove Wood County Wildlife Site (CWS), Knodishall Common CWS and Aldringham to Aldeburgh Disused Railway Line CWS). Section 22.6.1.4 of Chapter 22 Onshore Ecology includes references to Grove Wood.</p>

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	construction and operational lighting is carefully controlled to ensure that there is no light spill towards these sites. It must also be ensured that construction activities suitably buffer these sites to ensure that no impacts may arise from sources such as increase noise and dust.			
	<p>PEIR Cumulative Assessment</p> <ul style="list-style-type: none"> Table 22.23 The in combination assessment with Sizewell C should be based on the most up to date project design available. 			See Table 22.22 and section 22.7.2.1 of Chapter 22 Onshore Ecology of the ES.
	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> 22.6.1.4.2, Para. 171 'Ensuring that at least an equivalent area of lost woodland is replanted following completion of the works (trees cannot be replanted directly above the buried cables)'; NE welcome the replanting of woodland and would encourage the developer to incorporate net gain into their strategy. The developer should provide information on the areas to be replanted and methodology of planting including timescales (in some cases mitigation planting could occur before woodland is removed) and species etc. 	NE; SCC; SCDC (now East Suffolk Council); The Wildlife Trusts / Suffolk Wildlife Trust	16	<p>Woodland - Section 22.6.1.4 of Chapter 22 Onshore Ecology of the ES details impact to woodland and highlights those areas within order limits that have been identified as being suitable tree planting. The area of woodland that will be lost will be very low and least an equivalent area of lost woodland will be replanted. The methodology and timescales of re-planting will be agreed post-consent with the relevant stakeholders.</p> <p>The Applicant will continue to work constructively with Defra and key stakeholders such as Natural England to support the preparation of guidance on the application of Net Gain and in their work to establish potential</p>

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	<ul style="list-style-type: none"> Mitigation measures intended to avoid or reduce the harmful effects of a proposed project on a European site may no longer be taken into account by competent authorities at the Habitat Regulations Assessment (“HRA”) “screening stage” when judging whether a proposed plan or project is likely to have a significant effect on the integrity of a European designated site. Section 22.4.3.5, Para. 77 With regards mitigation the developer should note recent case law and that during HRA and AA LSE must be considered prior to mitigation. Section 22.3.3, Para. 16 NE notes the embedded mitigation in the project design. the Applicant should ensure recent case law is applied when assessing Likely Significant Effects on European Sites and Appropriate Assessment. Section 22.3.4, Para. 17 Outline management plans submitted and mitigation should be of sufficient detail at the date of the DCO application to be able to confidently inform LSE on designated sites and species. Section 22.6.1.5, Para. 173 Hedgerow habitat is a UKHPI and Suffolk BAP habitat, advise that the hedgerow mitigation plan aims to re-establish all hedgerows to species rich in tact hedge, providing BAP habitat. Section 22.5.3.2, Para. 115 Any works to badger setts will require a licence, and mitigation and compensation for the destructed setts should be clearly outlined. 			<p>approaches to achieving biodiversity net gains for NSIPs and marine developments.</p> <p>Likely significant effects on European sites (SPA and Ramsar) are considered separately in the Information to Support Appropriate Assessment.</p> <p>Greater detail on the potential difference in impacts, e.g. between an open cut or HDD methodology for crossing the SPA is provided in Chapter 4 Site Selection and Assessment of Alternatives and section 22.6.1 of Chapter 22 Onshore Ecology of the ES, and taken into consideration for assessing construction impacts.</p> <p>Comment regarding information of LSE on designated sites and species – noted. Likely significant effects on European sites (SPA and Ramsar) are considered separately in the Information to Support Appropriate Assessment.</p> <p>An OLEMS (Document Reference: 8.7) has also been submitted with this application, secured under the requirements of the draft DCO, which provides sufficient detail to proposed mitigation. This will be finalised post-consent in consultation with the relevant regulators.</p> <p>Hedgerows - Section 22.6.1.5.2 of Chapter 22 Onshore Ecology of the ES – hedgerows to be reinstated following the completion of works where possible.</p>

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	<ul style="list-style-type: none"> Section 22.6.1.1.4, Para. 158 Impacts associated with onshore cable corridor. The mitigation referenced in section 22.6.1.1.4 refers only to bird species and does not extend to any other species. Section 22.6.1.2, Para. 160/161 Impacts to Arable Habitats. NE would expect to see reference to agricultural land classification and to see soil handling mitigation outlined within the ES. Any soil management or mitigation should be included in the ES. Section 22.6.1.5, Para. 176 NE would expect mitigation measures to be further outlined within the ES in order to establish potential impacts. Possible mitigation could include but is not limited to: using locally relevant species, margins to encourage biodiversity, protection against browsing animals until the shrubs are established, replanting as soon as possible in the schedule, improvement of the hedgerows either side of the section to be removed including any gapping up, tree management and the development of scrub/rough grassland margins. Prior to removal of hedgerows a mitigation plan should be drawn up and agreed with NE. Section 22.6.1.7.1, Para. 183 NE recommends that mitigation to water courses include an aim to restore and improve habitat. Section 22.6.1.8.4, Para. 187 Mitigation should include micro-siting of cable route to avoid badger setts, and mitigation and compensation as outlined within NE standing advice. The full 			<p>None of the hedgerows identified were assessed as important hedgerows in terms of ecological criteria (species rich and intact hedge). A hedgerow schedule has been submitted with this DCO application as part of the OLEMS, secured under the requirements of the draft DCO.</p> <p>Badger Setts comment - Addressed in section 22.6.1.8 of Chapter 22 Onshore Ecology of the ES.</p> <p>The Minsmere to Walberswick Ramsar and SPA, and Alde-Ore Estuary Ramsar and SPA are designated for bird species, therefore the mitigation focusses on the impacts upon birds.</p> <p>Impacts arable habitats are referenced within Chapter 21 Land Use of the ES. See sections 21.5.3 and 21.6.1.4 of Chapter 22 Onshore Ecology of the ES.</p> <p>Water course mitigation - Section 22.6.1.7.1 of Chapter 22 Onshore Ecology of the ES indicates that water course bed and bank habitats will be reinstated and where possible improved following the completion of the works.</p> <p>Paragraph 186 states that known badger setts will be avoided by the cable route. Pre-construction surveys will be undertaken to avoid damage to setts where possible.</p>

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	<p>proposed mitigation should be submitted as part of the DCO.</p> <ul style="list-style-type: none"> The Councils consider the PEIR down plays the harm or disturbance to biodiversity. The conclusions of the PEIR relies on mitigation strategies to be adopted and the Councils have not yet seen sufficient information on these. Amongst other things (such as impacts upon common birds), the Councils would like to understand what information is known and available in relation to the bats movements between and alongside the woods where the substations are proposed to be built. The positioning of the proposed substations will result in the loss of a small area of broadleaved woodland (approximately 0.3Ha) which is not assessed in the PEI, and therefore no potential mitigation or compensation measures are proposed. Felling of this area of woodland would further increase the amount of loss a UK Priority habitat as a result of this proposed development. 			<p>Appendix 22.6 Bat Survey Report of the ES identifies that each monthly activity transect survey was designed in accordance with BCT guidelines (Collins 2016) and encompassed all the 58 features that had been recorded during the Extended Phase 1 Habitat Survey. These features consisted of linear features such as hedgerows, as well as habitat features such as grassland/scrub and woodland (Figure 22.6.1a to Figure 22.6.1g). Each transect, and associated figures detail the bat activity across the site, including the woodland adjacent to the substation.</p> <p>Section 22.6.1.4 of Chapter 22 Onshore Ecology details impact to woodland and highlights those areas within the order limits that have been identified as being suitable for tree planting. The area of woodland that will be lost will be very low and least an equivalent area of lost woodland will be replanted. The methodology and timescales of re-planting will be agreed post-consent with the relevant stakeholders through submission of the OLEMS, secured under the requirements of the draft DCO.</p>
	<p>PEIR References</p> <ul style="list-style-type: none"> Section 22.4.2.1, Para. 57 This should refer to Fig 22.1 not 22.4 	NE	1	Noted and amended in the text.

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	<p>General Assessment Comments</p> <ul style="list-style-type: none"> • Include fish data in the assessment. • Impact to wildlife is not negligible or minor. • Good to see lighting will be installed at the substation to minimise the impact on bats. • No evidence that bat population along entire cabling route has been properly assessed by the Applicant. • Does not address the short/long term impacts satisfactorily. • The impacts for the proposals for both wind farms either sequentially or simultaneously are rated as of negligible significance or minor adverse significance on the impact to onshore ecology. • Creating ecological mitigation areas out of woodland that already exist is a 'tick box' exercise. • At no point does there in any way appear to have been any consideration by National Grid on the cumulative impact on the environment and the communities of the different projects. • No mention of the impact into common species of animals and plants that rely on the habitat networks at the landfall site. • Suitability for bat roosting adjacent to the proposed cable route have not been identified. • Impacts on Hundred River and ecological corridor it provides are not clear. • Lack of information on the impacts of construction compounds, parking areas, junction 	<p>Onshore Ecology and Ornithology Expert Topic Group 2 (NE, SCC, SWT and RSPB); Local Community Members; Friston Parish Council / SASES; SCC; SCDC (now East Suffolk Council); The Wildlife Trusts / Suffolk Wildlife Trust</p>	27	<p>An Ecological Impact Assessment was carried out on the potential impacts of construction, operation and decommissioning of the East Anglia TWO project on the baseline environment. The worst case scenario is considered and proposed mitigation factors explained. Some of the key points are detailed below. Further detail can be found in Chapter 22 Onshore Ecology of the ES.</p> <p>Bats - Features assessed during the initial 2018 Extended Phase 1 Habitat Survey as having either moderate or high potential to support roosting bats have been subject to bat emergence/re-entry surveys during 2018 to confirm the presence/absence of roosting bats. Results of this survey are detailed in Appendix 22.6 Bat Survey Report of the ES. Various mitigation measures will be undertaken, such as lighting sensitive to bats being incorporated according to guidance in Bats and Artificial Lighting in the UK (Bat Conservation Trust (BCT) and Institute of Lighting Engineers (ILE) 2018).</p> <p>Section 7 of Chapter 22 Onshore Ecology of the ES describes the findings of the CIA (Cumulative Impact Assessment), summarising that direct impacts on habitats and species will not be of greater significance than those anticipated for the proposed East Anglia TWO project and proposed East Anglia ONE North project, detailed in Table 22.20.</p> <p>Given the sensitivity of bats as a receptor, it is considered the impact of 'Moderate Adverse' as an</p>

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	<p>improvements, traffic movements and all associated infrastructure on biodiversity.</p> <ul style="list-style-type: none"> Concern that PEIR downplays impact on biodiversity. Full details of mitigation, monitoring and enhancement of HDD work at Coastal Vegetated Shingle habitat required. Hedgerows should be surveyed according to Hedgerow Act (1997) regulations. Lack of real, proactive commitment to net gain for biodiversity (requirement of NPS EN-1 5.3.7). New guidance from the Bat Conservation Trust and Institute of Lighting Professionals may supersede the 2009 guidance quoted in the PEIR. Extent of woodland to be removed around Aldringham Court is unclear. 			<p>impact is an appropriate assessment of the effects on this species. However, the mitigation provided is appropriate and surveys undertaken suitable to ascertain the impact on this species.</p> <p>Lesser Horseshoe Bat recording - Further investigation is not considered necessary due to the robust survey records, mitigation and reporting for this species. The impact assessment baseline is detailed within section 22.5.3.3 of Chapter 22 Onshore Ecology of the ES, including reference to the recording of a lesser horseshoe bat. This baseline is fully considered when assessing potential impacts on bat populations in section 22.6.1.9 of Chapter 22 Onshore Ecology of the ES.</p> <p>New guidance from the Bat Conservation Trust and Institute of Lighting Professionals incorporated throughout the ES.</p> <p>Coastal Vegetated Shingle - No impact is anticipated on this habitat as detailed in section 22.5.2.11 of Chapter 22 Onshore Ecology of the ES. At the landfall, HDD will be the sole method utilised.</p> <p>Section 7 of Chapter 22 – Onshore Ecology of the ES describes the findings of the CIA (Cumulative Impact Assessment), summarising that direct impacts on habitats and species will not be of greater significance than those anticipated for the proposed East Anglia</p>

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				<p>TWO project and proposed East Anglia ONE North project, detailed in Table 22.20.</p> <p>This is covered in Chapter 26 Traffic and Transport of the ES. Figure 26.4 provides a plot of sensitive features. A Traffic Management Plan (TMP) will be developed to ensure that construction work areas would be accessed using existing tracks and roads.</p> <p>Section 22.6.1.2 of Chapter 22 Onshore Ecology of the ES details that the majority of the development area is arable land; impacts upon this land are therefore assessed.</p> <p>SCC/SCDC (now East Suffolk Council) comment on Impacts on Hundred River and other ecological corridors - Section 22.6.1.7 of Chapter 22 Onshore Ecology of the ES details the impacts upon the Hundred River and mitigation that will be implemented. Further information is detailed within Chapter 20 Water Resources and Flood Risk of the ES which includes impacts to hydrology, geomorphology and physical habitat. Footpath diversions are detailed within the Outline Public Rights of Way Strategy (OPRoWS) (Document Reference 8.4) submitted with this application. The final Public Rights of Way Strategy will be developed post-consent, in order to discharge a requirement of the draft DCO, in consultation with the relevant regulators.</p> <p>Hedgerows - A full survey was undertaken in accordance with criteria set out in the 1997 Hedgerow</p>

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				<p>Act Regulations. A hedgerow schedule has been submitted with this DCO application as part of the OLEMS (Document Reference: 8.7), secured under the requirements of the draft DCO.</p> <p>Suitable maintenance of any newly planted sections of hedgerow, shelterbelts and woodlands following construction would have an aftercare period of ten years.</p> <p>Embedded mitigation and net gain - Embedded mitigation is included in section 22.3 of Chapter 22 Onshore Ecology of the ES.</p> <p>The Applicant will continue to work constructively with Defra and key stakeholders such as NE to support the preparation of guidance on the application of Net Gain and in their work to establish potential approaches to achieving biodiversity net gains for NSIPs and marine developments.</p> <p>Bat Conservation Trust and Institute of Lighting Professionals has been updated throughout the ES.</p> <p>Appendix 22.6 Bat Survey Report of the ES details where Barbastelle were recorded (transects 3, and 4). All UK habitats of principal importance are detailed in Figure 22.1. Key habitats are detailed in Figure 22.3 of Chapter 22 Onshore Ecology of the ES. Transect figures are as follows: 22.6.1c, 22.6.1d.</p>

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	<p>Onshore Ecology Impacts</p> <ul style="list-style-type: none"> Concern over bats impacted by substation. Destruction of habitats for protected species (such as bats and badgers) at substation and cable route. Impact on Sandlings habitat – it will destroy 1% of global Sandlings habitat. Impact of lighting on bats and deer at the landfall construction compound. Deer and wild horses. Impact on heathland habitat. Impact on reptiles – No plans to carry out specific reptile surveys Cable route impact on flora and fauna. Concern over protected or UK priority species (in County Wildlife Site). Impact (from runoff) on River Fromus with otters, voles, newts and bats. Impact on habitat at Moor Farm. Lighting impact on wildlife. 	<p>Local Community Members; Snape Parish Council Meeting; The Hotel Folk Ltd.; TEGAS; Friston Parish Council / SASES, Therese Coffey; Friston Parish Council / SASES; Aldringham-cum-Thorpe Parish Council; Save Our Sandlings; SCC; SCDC (now East Suffolk Council); Suffolk</p>	218	<p>Ecology Assessments have been carried out and fully consider local wildlife impacts. For example, deer, newts, birds, bats, badgers among many others are assessed. Mitigation is considered and planned and this information along with the assessments form part of the DCO application. Further information on Ecology, Guidelines and Acts adhered and followed can be found in Chapter 22 Onshore Ecology of the ES.</p> <p>The project design minimises the overlap of the onshore cable corridor designated sites (i.e. Sandlings SPA), choosing a crossing at the narrowest point, within habitat where no records of ornithological target species were found.</p> <p>Where the onshore cable corridor crosses the Sandlings SPA, open-cut or HDD techniques may be employed. For an open cut technique, the Applicant has committed to a reduced onshore cable route working width of 16.1m (reduced from 32m) within Sandlings SPA for a length up to 300m depending on the exact alignment chosen to cross the SPA. The implications of this</p>

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	<ul style="list-style-type: none"> Hedgehogs in Friston impacted by traffic increases. Once gone, cannot be replaced. Concern over impact of fragmentation of the land. Impacts on rare plants. Concern over traffic impacts on wildlife. Impacts on wildlife breeding. Impacts on SSSI habitats. Concern over impacts on water vole. Proposed route will displace far more wildlife than if sited at Sizewell. Traffic impacts on hares Impact on AONB Machinery and increased vehicles resulting in frightened animals. Impacts to coastal species and habitats. Impacts will be ecocide. Impacts to Dunwich Heath. Impacts on wildlife corridors and foraging routes. Impacts to glow-worms. Impact on meadows. Impacts on dredging on freshwater Swan Mussels in the River Hundred. Impacts to wildlife outside the AONB protected zone. Impacts will extend beyond the work sites. Impact on dragonflies and damselflies in The Fens 	Coast and Heath AONB Partnership; Environment Agency		<p>embedded mitigation mean that the area potentially affected within Sandlings SPA would be reduced from 0.957ha to 0.483ha, which represents a reduction from 0.028% to 0.014% of the SPA (total area of Sandlings SPA is 3,406ha).</p> <p>For a HDD technique used to cross the Sandlings SPA, the HDD entry pits would, where possible, be located sufficiently distant from designated sites to avoid any potential impacts. The risk of disturbance would depend on the proximity of entrance and exit pits to the SPA/SSSI boundary. The use of this technique would mean no loss of habitat within the designated site.</p> <p>Wind tunnel effect - Section 22.6.1.4.2 of Chapter 22 Onshore Ecology of the ES details the replanting of trees, although trees will not be able to be replanted directly above the buried cables. This will minimise the 'wind tunnel' effect as the area of woodland will be replaced.</p> <p>The areas of woodland to be permanently removed will cover a small area, therefore minimising the potential for a "wind tunnel" effect.</p>

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	<ul style="list-style-type: none"> Using a qualified arboriculturalist to assess woodland and hedgerows pre-construction is not mitigation The disturbances to the habitats and species within them would be affected significantly if developments were carried out sequentially as recovery time would be impaired. Along the cable route there are 36 jointing bays and 72 link boxes (for East Anglia TWO). Will these ever need to be accessed during the lifetime of the wind farm potentially disrupting habitat? HDD being used at the coast will affect the habitat through noise vibration and 24 hour lighting. In particular, vibrations on the sandy cliff could affect populations of species using this important protected habitat. All species should be included in the plan of action for reinstatement, not just protected ones. Sandlings Heath represents 1% of total lowland heath left in the world. Concern that cable corridor will become a wind tunnel resulting in impacts to wildlife. Migratory bats commute through the North Sea on this route. The proposed cable route appears likely to result in the loss of, or damage to, a number of commuting/foraging routes used by a range of bat species including rare species such as barbastelle. 			

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	<ul style="list-style-type: none"> Impacts on natural heritage during construction and operation. The proposals have the potential to negatively impact Sites of Special Scientific Interest, Special Protection Area, hedgerows and wildlife habitat. 			
	<p>Woodland and Hedgerow Impacts</p> <ul style="list-style-type: none"> Loss of Grove Wood established woodland. Old hedgerows cannot be replaced. Loss of indigenous mature woodland, established habitats. SCDC "Area Tree Preservation Order" protects trees on the entire area of land surrounding Aldringham Court, therefore there can be no justification for the cable corridor as far south as indicated in Figure 6.6e of the PEIR. Removal of ancient woodland. Impacts on SSSI woodland. Impacts on biodiversity due to hedgerow removal. Noise, light, pollution and earthworks impacts on the Ancient Woodland at Fitches Lane. A part of Laurel Covert is proposed to be removed to accommodate the substations and the contractors' compounds. This is unacceptable approach, especially since the Applicant offers Laurel Covert as the only Habitat Mitigation Area. 	<p>Local Community Members; Friston Parish Council / SASES; Aldringham-cum-Thorpe Parish Council; The Wildlife Trusts / Suffolk Wildlife Trust, Friston Parish Council / SASES</p>	36	<p>Site selection has taken into account environmental constraints and features like woodland will be avoided where possible. Where this is not possible, baseline and species specific ecological surveys of woodlands have been undertaken. The findings of which were used to inform the site selection and helped to identify mitigation and/or licencing requirements (see Chapter 22 Onshore Ecology of the ES).</p> <p>The Applicant is committed to a reduced cable corridor of 16.1m when crossing hedgerows. This will reduce impact on hedgerows as much as possible. HDD and trenchless techniques are not considered for crossing hedgerows. Where possible, a minimum swathe (16.1m) at important hedgerows will be used. This is deemed to be sufficient and suitable mitigation.</p> <p>See Technical Note within Annex 2 of the Extended Phase 1 Habitat Survey (Appendix 22.3). This details the hedgerows and their composition within the substation area. All hedgerows will be reinstated where possible, as detailed in the OLEMS (Document Reference: 8.7)</p>

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	<ul style="list-style-type: none"> There is no reference to reinstating hedgerows or woodlands such that they become species rich. Trees cannot be replanted over the cable route so habitat networks are fragmented particularly for species that rely on continuous mature woodlands and hedgerows. Trees cannot be replanted over the cable route so habitat networks are fragmented particularly for species that rely on continuous mature woodlands and hedgerows. The cable route will certainly fragment the network of hedgerows and will disrupt the connectivity of identified populations. Damage to woodland at Aldringham Aldringham-cum-Thorpe Parish Council strongly object to any unnecessary destruction of trees and hedgerows. 			<p>submitted with this DCO application, secured under the requirements of the draft DCO. A detailed hedgerow schedule has been provided as part of the OLEMS.</p> <p>Impact 4 rationale: the magnitude of effect is considered to be low given the extent of similar habitats within the surrounding area that will be retained. Following the implementation of the agreed mitigation measures considered necessary there should be no net loss of trees.</p> <p>Replanting of replacement woodland would be defined, under the mitigation hierarchy, as restoration: measures taken to restore cleared ecosystems following exposure to impacts that cannot be completely avoided and/ or minimised. The area of woodland that will be lost will be very low and least an equivalent area of lost woodland will be replanted. This is detailed further within section 22.6.1.4 of Chapter 22 Onshore Ecology of the ES. Protecting root systems, introducing biosecurity measures and assessing trees to be removed would be classified as minimisation: measures taken to reduce the duration, intensity and / or extent of impacts (including direct, indirect and cumulative impacts, as appropriate) that cannot be completely avoided, as far as is practically feasible.</p>

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	<p>Impact on SPA</p> <ul style="list-style-type: none"> HDD under the SPA. Mitigation on the Sandlings SPA could be achieved through rapid work off season (in winter). Place drilling units for HDD behind existing landscape features in the Sandlings SPA. Work in the Sandlings SPA could be undertaken in dog walking areas which are “sterile”. Work could be undertaken within the Sandlings SPA out of sequence with the rest of the works. 	Local Community Members; SCC; SCDC (now East Suffolk Council)	7	<p>The project design minimises the overlap of the onshore cable corridor designated sites (i.e. Sandlings SPA), choosing a crossing at the narrowest point, within habitat where no records of ornithological target species were found.</p> <p>Where the onshore cable corridor crosses the Sandlings SPA, open-cut or HDD techniques may be employed. For an open cut technique, the Applicant has committed to a reduced onshore cable route working width of 16.1m (reduced from 32m) within Sandlings SPA for a length up to 300m depending on the exact alignment chosen to cross the SPA. The implications of this embedded mitigation mean that the area potentially affected within Sandlings SPA would be reduced from 0.957ha to 0.483ha, which represents a reduction from 0.028% to 0.014% of the SPA (total area of Sandlings SPA is 3,406ha).</p> <p>If the HDD technique was used to cross the Sandlings SPA, the HDD entry pits would, where possible, be located sufficiently distant from designated sites to avoid any potential impacts. The risk of disturbance would depend on the proximity of entrance and exit pits to the SPA/SSSI boundary. The use of this technique would mean no loss of habitat within the designated site.</p>

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	Cumulative Impacts <ul style="list-style-type: none"> Unclear how it is intended that cumulative impacts would be reduced if EA1N and EA2 were not built separately. Would the projects commit to be constructed simultaneously? Unclear as to why only Sizewell C was included in the assessment and what other plans/projects were scoped in. Up-to-date information should be used for the cumulative impact with Sizewell C. Overlap of construction windows for other wind farms in the North Sea should be considered in the Environmental Statement and the HRA. 	The Wildlife Trusts / Suffolk Wildlife Trust	4	A CIA is provided in Appendix 22.2 Cumulative Impact Assessment with East Anglia ONE North of the ES. This details the construction scenario of building the proposed East Anglia ONE North project and the proposed East Anglia TWO project simultaneously or sequentially.
	Biodiversity and AONB Mitigation Suggestions <ul style="list-style-type: none"> Re-plant hedgerows on northern boundary of the farm on their original line to an agreed specification with container grown plants of 1000mm in height and to fence accordingly to facilitate their establishment. Mitigation land should be purchased by the Applicant, rewilded and gifted to the community, giving long term benefit, and an overall improvement to the AONB. Mitigate impacts on biodiversity. Essential to remove and rehome all creatures that will lose habitat and feeding ground. 	Local Community Members; Suffolk Coast and Heath AONB Partnership; Friston Parish Council / SASES; Aldringham-cum-Thorpe Parish Council; The Wildlife Trusts / Suffolk Wildlife Trust;	27	<p>Designated sites are also presented in section 22.5 of Chapter 22 Onshore Ecology of the ES. Site selection decisions have been made to avoid features of interest at designated sites. Table 22.12 of Chapter 22 Onshore Ecology of the ES reviews designated sites within 2km of the onshore development area. Hedgerows are specifically addressed in section 22.6.1.5 and Table 22.19 of Chapter 22 Onshore Ecology of the ES. Impacts and mitigation to other habitats are addressed in section 22.6 of Chapter 22 Onshore Ecology of the ES.</p> <p>Replanting of replacement woodland would be defined, under the mitigation hierarchy, as restoration: measures taken to restore cleared ecosystems following exposure</p>

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	<ul style="list-style-type: none"> Once the substation has been completed, the areas within the compounds should be maintained in such a way as to encourage biodiversity and provide a positive contribution to the long term viability of the area. What needs to be presented is strategically embedded mitigation that is both long term and beneficial to wildlife and will improve the resilience to future change and enhance the areas surrounding designated sites. If there is appropriate justification for the reduction or removal of some trees or hedgerows Aldringham-cum-Thorpe Parish Council would expect to see the appropriate tree, hedgerow, bird nesting and wildlife surveys completed prior to any proposals being progressed and appropriate mitigation measures applied or at least agreed before any work commences. Trees and plants should be wildlife friendly and use locally grown natives as well as quick growing evergreens (e.g. laurel) and ornamental species (e.g. crab apple) to provide quick habitat and food sources for habitat. Where the Cable Corridor Route crosses the B1122 Aldeburgh Road is of particular concern. This wooded area provides a significant wildlife corridor across the B1122 which is extensively affected by ribbon development along most of its length. Therefore, significant consideration needs to be given to how the impacts of the works in this area can be mitigated. 	Environment Agency		<p>to impacts that cannot be completely avoided and/ or minimised. The area of woodland that will be lost will be very low and least an equivalent area of lost woodland will be replanted. This is detailed further within section 22.6.1.4 of Chapter 22 Onshore Ecology of the ES. Protecting root systems, introducing biosecurity measures and assessing trees to be removed would be classified as minimisation: measures taken to reduce the duration, intensity and / or extent of impacts (including direct, indirect and cumulative impacts, as appropriate) that cannot be completely avoided, as far as is practically feasible.</p> <p>Suitable ponds will be identified post-consent should Great Crested Newt translocation be required.</p> <p>Mitigation measures are provided in section 22.6 of Chapter 22 Onshore Ecology of the ES and site investigation results are provided within the Appendices 22.3, 22.4, 22.5 and 22.6 which addresses the sensitivity of the species and habitats located within the onshore development area.</p> <p>The Applicant will continue to work constructively with Defra and key stakeholders such as Natural England to support the preparation of guidance on the application of Net Gain and in their work to establish potential approaches to achieving biodiversity net gains for NSIPs and marine developments.</p>

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	<ul style="list-style-type: none"> It is essential that complete and affective restoration of the landfall site and the cable route is carried out to a standard that is appropriate for the AONB and where possible, the areas of natural sandling vegetation should be enhanced and extended to improve the long-term viability of the area. Mitigation land should be purchased by the Applicant, rewilded and gifted to the community, giving long term benefit, and an overall improvement to the AONB and the surrounding area. The cable landfall site requires a significant area of land within the AONB to carry out major works. This will require a large amount of manpower, plant and materials. Aldringham-cum-Thorpe Parish Council require assurance from the Applicant that this area will be kept to a minimum and not impact on the SSSI (Thorpeness Common), the fragile coastal margin or the extensive footpath network in this area. Compensation land for creating new and better habitats for displaced animals (like with Sizewell). Unclear on whether the planting of replacement woodland following the completion of works is mitigation, or forms compensation under the mitigation hierarchy. Further details on how mitigation for great crested newts will be implemented. Full range of potential mitigation measures have not been adequately considered. 			<p>It is noted that design level mitigation will need be specified and agreed with the relevant stakeholders post-consent through the production of an Ecological Management Plan (EMP), secured under the requirements of the draft DCO.</p> <p>Table 22.4 of Chapter 22 Onshore Ecology of the ES provides mitigation measures embedded into the project design and considers designated sites. Where impacts cannot be fully avoided, additional mitigation is provided under each impact and subsequently the residual impact presented.</p> <p>Table 22.4 of Chapter 22 Onshore Ecology of the ES provides mitigation measures embedded into the project design. Impacts to habitats and associated mitigation are addressed in section 22.6 of Chapter 22 Onshore Ecology of the ES.</p> <p>It is noted that design level mitigation will need be specified and agreed with the relevant stakeholders post-consent through the production of an Ecological Management Plan (EMP), secured under the requirements of the draft DCO.</p> <p>The DCO process will enable the Local Planning Authorities to sign-off the conditions of the DCO only when satisfied. The design of substation infrastructure can evolve and change when greater certainty regarding the project is obtained through detailed design post-</p>

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	<ul style="list-style-type: none"> There are likely to be opportunities for habitat enhancement arising, in particular, from the reinstatement works following the installation of the cables. These, and all other, enhancement opportunities should be fully assessed. The proposal should aim to provide net gains for biodiversity in accordance with the government's 25 Year Environment Plan and the requirements of the National Planning Policy Framework. Works should recognise the importance of biodiversity and wildlife habitats in the AONB and systems should take a precautionary principle to avoid negative impacts and where these cannot be avoided, they should be minimised, mitigated or compensated for. The indication of residual impacts on habitat and protected species look viable, but as mentioned above, will be reliant on appropriate design level mitigation and enhancement measures to be specified and agreed. Design should consider the potential for embedded ecological mitigation and enhancement (such as green & brown roofs, green walls, appropriate vegetation planting and bird nesting habitat). 			consent. This includes potential to embed ecological mitigation and enhancement.

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Onshore Ornithology	<p>PEIR Policy</p> <ul style="list-style-type: none"> NE recommend that there should be a clear ambition to provide net gain throughout the project development. There is currently no enhancement or net gain incorporated for habitats or species, NE recommend that the project should provide a legacy in line with the 25 Year Environment Plan. National Policy Statement requires that developments show how the Applicant has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests. 	NE	1	<p>Woodland planting to screen the onshore substation and National Grid infrastructure (see Chapter 29 Landscape and Visual Impact of the ES) would have the benefit of providing suitable nesting habitat for a variety of bird species. Enhancement measures including provision of suitable habitat for target species throughout the operational period will be considered and discussed with stakeholders in a process separate to this EIA and DCO application.</p> <p>Detailed information on the alternative HDD and open-trenching options for crossing the SPA/SSSI and within the landfall area is presented in Chapter 6 Project Description of the ES, and summarised in Chapter 23 Onshore Ornithology of the ES for the purposes of the impact assessment. Greater detail on the potential difference in impacts, e.g. between an open cut or HDD methodology is provided in sections 23.6.3.1 and 23.6.3.2 of Chapter 23 Onshore Ornithology and taken into consideration for assessing construction impacts. Likely significant effects on European sites (SPA and</p>

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				Ramsar) are considered separately in the Information to Support Appropriate Assessment.
	<p>PEIR Surveys</p> <ul style="list-style-type: none"> Figure 23.1 The Onshore ornithology study area does now not cover the Rochdale envelope for the proposed development. The survey data should include the most westerly extent of the redline boundary and a suitable buffer. Further surveys should ensure this area is included. Section 23.4.2.1 Breeding bird surveys were conducted from Feb-Aug 2018. Advise that further surveys are conducted to provide baseline data regarding bird activity for at least two full seasons to provide a robust dataset and present annual variability, as per NE standing advice and as agreed in the Onshore Evidence Plan Agreement Log May 2018. Section 23.4.2.1 Wintering bird survey Feb-Mar 2018 and Nov – Feb 2019. Advise that surveys cover the entire winter season (Nov- March) to gather information about bird activity for at least two full seasons to provide a robust dataset and present annual variability, as per NE standing advice and as agreed in the Onshore Evidence Plan Agreement Log May 2018. 	NE	4	<p>The scoping onshore ornithology study area considered in the PEIR (shown in Figure 23.1) was created prior to finalisation of the onshore development area. The westernmost part of the onshore development area which lies outside of the scoping onshore ornithology study area, similar to the habitats to the west of Aldringham, is likely to be of low importance to target species. Nevertheless, surveys in 2019, presented in Annex 1 of Appendix 23.3 Onshore Ornithology Survey Report: Breeding Seasons 2018 and 2019 of Chapter 23 Onshore Ornithology of the ES, have been based on the onshore development area and therefore cover the westerly extent.</p> <p>In addition to comprehensive breeding bird surveys being undertaken in 2018, historic data from 2009 to 2017 have been made available from RSPB (see section 23.4.2 of Chapter 23 Onshore Ornithology of the ES) which provides a sufficiently robust long-term dataset to be able to accurately determine potential effects on target species in the chapter. Nevertheless, a series of breeding bird surveys will be conducted in 2019 (May to August), and reported separately in Annex 1 of Appendix 23.3 Onshore Ornithology Survey Report: Breeding Seasons 2018 and 2019 of Chapter 23 Onshore Ornithology of the ES.</p> <p>Wintering bird surveys were extended to cover the period of November 2018 to March 2019 (Appendix 23.4</p>

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				Onshore Ornithology Survey Report: Non-Breeding Seasons 2018-2019 of Chapter 23 Onshore Ornithology of the ES). Combined with surveys in February and March 2018 (Appendix 23.3 Onshore Ornithology Survey Report: Breeding Seasons 2018 and 2019 of Chapter 23 Onshore Ornithology of the ES), and local surveyor knowledge, the data available are considered to be sufficient to conduct a robust impact assessment in Chapter 23 Onshore Ornithology of the ES.
	<p>PEIR Baseline</p> <ul style="list-style-type: none"> Section 23.4.2.1 Target breeding species currently excludes Skylark and Bullfinch. Skylark are a Red list Bird of Conservation Concern and a UK BAP species, Bullfinch are an amber list Species of Conservation Concern. Advise all bird species which are a qualifying feature of a designated site, and/or a Bird of Conservation Concern are considered in the ES. Table 23.14 Minsmere to Walberswick Ramsar, need to include all features. Table 23.14 Minsmere to Walberswick Heath and Marshes SSSI, need to include all bird species on the citation. Table 23.14 Alde-Ore Estuary SSSI, need to include all bird species on the SSSI citation. Section 23.6.1 Scoped-in Important Ornithological Features. Advise that this list is updated to include all important Ornithological Features, and those listed on citations, for example Bittern (Annex I). 	NE	6	<p>In response to the comment on Section 23.4.2.1, Skylark and bullfinch have been included in Chapter 23 Onshore Ornithology as target species, as have the non-breeding SSSI species recorded during baseline surveys. Further scoping in sections 23.6.1 and 23.6.2 of Chapter 23 Onshore Ornithology has determined whether these species should be taken forward for assessment, based on likelihood of any significant effects at a population level.</p> <p>In response to the comments on Table 23.14, all ecological features have now been included, as shown in Table 23.12 of Chapter 23 Onshore Ornithology of the ES. Likely significant effects on European sites (SPA and Ramsar) are considered separately in the Information to Support Appropriate Assessment.</p> <p>In response to the comment on Section 23.6.1, all target species, including those listed in SSSI citations have been included in section 23.6.1 of Chapter 23 Onshore Ornithology of the ES and subject to a scoping in/out</p>

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	<ul style="list-style-type: none"> Section 23.5.5 Anticipated Trends in Baseline Condition. NE would expect these to be based on most recent data such as UKCP18. 			<p>process dependent on the likelihood of any significant effects occurring at a population level.</p> <p>Section 23.5.5 of Chapter 23 Onshore Ornithology of the ES provides a general summary of predicted conditions for ornithological features in the long-term, in the absence of the proposed East Anglia TWO project, based on a number of factors, including changes in land management as well as broad climate predictions.</p> <p>In response to the comment from the Onshore Ecology and Ornithology Expert Topic Group, all ornithological interests of designated sites within 10 kilometres (km) have been taken into consideration for inclusion in the assessment – see section 23.5.2 of Chapter 23 Onshore Ornithology of the ES for details. This buffer is to take into consideration the maximum extent of foraging range for any SSSI species present within the onshore development area.</p>
	<p>PEIR Methodology</p> <ul style="list-style-type: none"> Table 23.8 (p.18) outlines the survey periods used to establish the species present and potential impacts of the proposed onshore works corridor. The RSPB is disappointed that only one year of breeding bird surveys have been conducted. The RSPB/Expert Topic Group also recommended that surveys extending into 2019 should cover March. This does not appear to have happened. Given the presence of woodlark it is important that sufficient survey effort has been made to ensure 	RSPB; NE	6	<p>In response to the comment on Table 23.8, surveys during the 2018-19 non-breeding season extended into March, as detailed in Appendix 23.4 Onshore Ornithology Survey Report: Breeding Seasons 2018 and 2019 of Chapter 23 Onshore Ornithology. Further breeding bird surveys, similar in scope to 2018 have taken place within the onshore ornithology study from May to August 2019. As the target species present are found in distinct and predictable habitat types, the combination of two breeding seasons surveys, combined with historic data from 2009 to 2018 is considered to be sufficient to adequately determine typical distribution and</p>

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	<p>there is a complete understanding of how the works area is used by early breeding species.</p> <ul style="list-style-type: none"> Table 23.11 NE note within EA2 PEIR Chapter 23 Onshore Ornithology Table 23.11 Temporal Magnitude definitions for long, medium, short negligible. Given the sensitivity of the features of interest NE advise these are reassessed in line with the definitions of duration within the EA2 PEI CHP 22 Onshore ecology 22.4.3.4 Duration. The assessment of effects should be revised accordingly. Consideration should be given to the worst case construction timeframes. Section 23.6.3.1.6 Would expect recent datasets such as Suffolk Community Barn Owl Project, to inform the final assessment within the ES. Figure 23.1 It is not clear whether Ornithology Figures currently include biological records searches and RSPB datasets. These should be used to inform the EIA. In line with RSPB scoping response, the RSPB recommended that breeding bird surveys should be conducted over two years, rather than one due to the potential for variability between years. RSPB also noted that wintering bird surveys should cover the entire winter season (at least November to March) as coverage of February to March only is likely to miss some species. Onshore ornithology study area was agreed by the Onshore Ecology & Ornithology Expert Topic Group. 			<p>abundance of these species. Further pre-construction surveys would take place to help avoid disturbance effects during the construction period, as part of the BBPP.</p> <p>In response to the comment on Table 23.11, Table 23.9 of Chapter 23 Onshore Ornithology of the ES has been updated to be consistent with the Chapter 22 Onshore Ecology of the ES definitions of duration.</p> <p>Historic datasets provided by the Suffolk Community Barn Owl project, the Suffolk Biodiversity Information Service, and RSPB have been considered as part of the impact assessment. These data sources are listed in section 23.4.2 of Chapter 23 Onshore Ornithology of the ES. RSPB records are shown in Confidential Figure 23.10.</p> <p>In response to the comment from RSPB on the duration of breeding bird surveys, baseline surveys were designed specifically to record the abundance and distribution of Sandlings SPA and Leiston-Aldeburgh SSSI qualifying interests, as well as any other species of high conservation concern (see section 23.5 of Chapter 23 Onshore Ornithology of the ES). Surveys, as agreed with NE, were undertaken each month from February to August 2018, with follow-up surveys in May to August 2019, which is considered sufficient for determining current baseline conditions and likely distribution of qualifying interests. Winter surveys were undertaken</p>

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				each month from November 2018 to March 2019 inclusive. It was noted that the onshore ornithology study was agreed to by the Expert Topic Group.
	<p>PEIR Impacts</p> <ul style="list-style-type: none"> RSPB notes that Table 23.17 (pp.36-37) highlights the conservation status of turtle. However, the RSPB considers the conservation status of this species is not adequately reflected in paragraphs 77 and 78 (p.29) of the PEIR and the information should be improved. Highlighting the conservation status of turtle dove more fully would be consistent with the approach taken with spotted flycatcher (paragraph 99, p.32) and yellow wagtail (paragraph 100, p.32), which are reported as red-list species of conservation concern. Whilst important to identify the importance of these species, only one pair of spotted flycatcher were recorded and only 2-3 pairs of yellow wagtail. The survey area is therefore of even greater importance for turtle doves and this needs to be reflected in the assessment of impacts and any mitigation requirements. Paragraph 110 (p.32) attempts to dismiss impacts on the species within the works corridor by claiming that this will be offset by the projects contribution to reducing climate change impacts. In the long-term renewable energy projects have 	RSPB; NE	24	<p>In response to the comment on Table 23.17, the conservation status of turtle dove and other species is detailed in Table 23.16 of Chapter 23 Onshore Ornithology of the ES. Each species' conservation status has been fully considered as part of the impact assessment process in section 23.6 of Chapter 23 Onshore Ornithology of the ES and the corresponding mitigation proposed for any associated unmitigated significant effects predicted. Those impacts relevant to turtle dove in terms of habitat loss and disturbance are detailed in sections 23.6.3.1.1 and 23.6.3.2.3 respectively of Chapter 23 Onshore Ornithology of the ES.</p> <p>In response to the comment on Paragraph 110. This is a misinterpretation of the text, which has been clarified and amended (see section 23.5.5 of Chapter 23 Onshore Ornithology of the ES). The text describes the future scenario without the proposed East Anglia TWO project present, and concludes that abundance and distribution of some species would decline as a result of climate change. There is no comment on the role that the proposed East Anglia TWO project would play to specifically offset these impacts.</p>

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	<p>a part to play, but this does not negate the need for projects to be appropriately sited, or ensure that they contribute to maintenance and net gains for the species that could be impacted. Whilst habitat may remain suitable for turtle doves, once lost from an area they can be difficult, or impossible to get back under the current conditions. If the UK is to retain a breeding turtle dove population it is important that the remain pairs are protected and deterioration to nesting and foraging habitat avoided. The RSPB recommends that any proposed works in areas that support turtle dove are avoided entirely or works carried out in the least damaging way possible. Sufficient measures should also be secured to enhance the breeding and foraging habitat for turtle dove (see comment 37 below).</p> <ul style="list-style-type: none"> RSPB agrees with the conclusion in paragraph 146 (p.44) that the potential impact on the Leiston-Aldeburgh SSSI population could be significant if not mitigated. Sowing turtle dove seed mix as advised by Operation Turtle Dove is supported, as is the provision of supplementary feeding areas. The RSPB recommends that the Applicant seeks to secure such measures for the life of the project to provide net gains as a legacy of the works. NE advises that any risk of a reduction in or loss of a terrestrial or marine European Site should be judged to be a 'likely significant effect', and the full significance of its impact on a site's integrity 			<p>In December 2018, Defra consulted on plans to introduce the principle of Net gain to the Planning System in England. Defra's recent response to consultation affirms their intention to bring forward legislation to mandate Net Gain within the Environment Bill but confirms their position that Nationally Significant Infrastructure Projects (NSIPs) and marine developments will remain out of scope of the mandatory requirement in the Environment Bill.</p> <p>The Applicant will continue to work constructively with Defra and key stakeholders such as Natural England to support the preparation of guidance on the application of Net Gain and in their work to establish potential approaches to achieving biodiversity net gains for NSIPs and marine developments.</p> <p>In response to the advice from NE. Likely Significant Effects on European sites (SPA and Ramsar) within the context of the Sandlings SPA in the Information to support Appropriate Assessment report.</p> <p>Likely significant effects on European sites (SPA and Ramsar) are considered separately in the Information to Support Appropriate Assessment.</p> <p>Detailed information on the nature, location and extent of construction activities are presented in Chapter 6 Project Description of the ES, and summarised in Chapter 23 Onshore Ornithology. Further information on specific mitigation measures have also been included in Chapter</p>

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	<p>should be further tested by appropriate assessment, in accordance with case law.</p> <ul style="list-style-type: none"> Table 23.4 NE advise any risk of a reduction in or loss of a terrestrial or marine European Site should be judged to be a 'likely significant effect', and the full significance of its impact on a site's integrity should be further tested by appropriate assessment. This principle should be applied to terrestrial and marine SACs, SPAs, pSPAs, cSACs and Ramsar sites. An appropriate assessment should examine the predicted loss in more detail, clearly identifying whether or not it would affect the habitats or supporting habitats of the European Site's qualifying features within that site. Table 23.10 Any loss in spatial Magnitude for designated species of a SPA or Ramsar should be considered LSE and considered as part of a Habitats Regulation Assessment and Appropriate Assessment. Table 23.23 Potential Impacts Identified for Onshore Ornithology - Any risk of a reduction in or loss of a terrestrial or marine European Site should be judged to be a 'likely significant effect', and the full significance of its impact on a site's integrity should be further tested by appropriate assessment. An appropriate assessment should examine the predicted loss in more detail, clearly identifying whether or not it would affect the habitats or supporting habitats of the European Site's qualifying features within that site. 			<p>23 Onshore Ornithology. Likely significant effects on European sites (SPA and Ramsar) are considered separately in the Information to Support Appropriate Assessment.</p> <p>Detailed information on lighting is presented in Chapter 6 Project Description of the ES, and summarised in Chapter 23 Onshore Ornithology of the ES, as part of the impact assessment in sections 23.6.3.2 (during construction) and 23.6.4.2 (during operation) of Chapter 23 Onshore Ornithology of the ES. An Artificial Light Emissions Management Plan will be developed for the final design for the permanent infrastructure, secured under the requirements of the draft DCO, which will include measures to minimise light spill following the recommendations regarding birds set out in the Bat Conservation Trust's (BCT) Artificial Lighting and Wildlife guidance (2014).</p> <p>In response to the comment on PEIR Section 23.6.3.1.1.5, Para. 128, detailed information on project design and construction timescales are presented in Chapter 6 Project Description of the ES, and summarised in Chapter 23 Onshore Ornithology of the ES. Greater detail on the potential difference in impacts, e.g. between an open cut or HDD methodology for crossing the SPA is provided in sections 23.6.3.1 and 23.6.3.2 of Chapter 23 Onshore Ornithology of the ES and taken into consideration for assessing construction impacts.</p>

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	<ul style="list-style-type: none"> There is currently insufficient information provided on the impact of noise or vibration on the ecology of the area, in the ecology or noise and vibration chapters, this should be considered and included in the ES. There is currently insufficient information on the impact of lighting during the construction phase on bird species. Further information should be provided on lighting during the operational phase and potential habitat loss for bird species, in particular barn owl. There is currently insufficient information provided regarding areas of direct habitat loss, and indirect disturbance by noise, light and vibration to comment whether the mitigation proposed would be sufficient. NE welcome the incorporation of mitigation for Turtle dove and Barn owl. Where bird species are displaced by development, especially Section 41 birds and red and amber listed species, a suitable amount of replacement habitat should be considered as per NE's Standing advice (2015). There is currently insufficient information provided within the PEIR regarding the likely impacts to confidently reach the current conclusions of no Likely Significant Effect, greater detail will need to be provided in the ES. Section 23.6.3.1.1.5, Para. 128 The information provided is currently insufficient to inform assessment that habitat loss will not have a significant effect on nightjar. Further information 			<p>In response to the comment on PEIR Section 23.6.3.1.2.2, Para 135, detailed information project design and construction timescales is presented in Chapter 6 Project Description of the ES, and summarised in Chapter 23 Onshore Ornithology of the ES. Likely significant effects on European sites (SPA and Ramsar) are considered separately in the Information to Support Appropriate Assessment.</p> <p>In response to the comment on PEIR Section 23.6.3.1.2.5, Para. 138, detailed information project design and construction timescales is presented in Chapter 6 Project Description of the ES, and summarised in Chapter 23 Onshore Ornithology. Greater detail on the potential difference in habitat loss impacts, e.g. between an open cut or HDD methodology for crossing the SPA is provided in section 23.6.3.1 of Chapter 23 Onshore Ornithology of the ES, and taken into consideration for assessing construction impacts. The onshore development area has been refined since the presentation of the scoping onshore development area in the PEIR, to take into account potential effects on Important Ornithological Features, including those on woodlark. Generally, the onshore development area has been located in habitats of low importance, at sufficient distance from the SPA to help avoid construction disturbance (see layout, Figure 23.1 of Chapter 23 Onshore Ornithology).</p>

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	<p>is required on the final design, construction timescales in relation to features of interest and mitigation.</p> <ul style="list-style-type: none"> Section 23.6.3.1.2.2, Para. 135 There is currently insufficient information provided for NE to comment on likely significant effect to Woodlark. Any risk of a reduction in or loss of a terrestrial or marine European Site should be judged to be a 'likely significant effect', and the full significance of its impact on a site's integrity should be further tested by appropriate assessment. An appropriate assessment should examine the predicted loss in more detail, clearly identifying whether or not it would affect the habitats or supporting habitats of the European Site's qualifying features within that site. Section 23.6.3.1.2.5, Para. 138 There is currently insufficient information provided for NE to provide comment on the likely significant effect of habitat loss and disturbance to Woodlark. NE would advise that mitigation is provided. Section 23.6.3.1.7.5, Para. 183 There is currently insufficient information to confidently assess significant effects to Cetti's warbler. Table 23.20 Operational impacts- Further information should be given as to the likely location of any jointing bays or access required within the SPA/SSSI during the operational phase. Section 23.6.3.1.1.2, Para. 125 There are 7 Nightjar territories recorded within 750m of the 			<p>In response to the comment on Section 23.6.3.1.7.5, Para 183, detailed information on the nature, location and extent of construction activities in relation to target species, including Cetti's warbler, are presented in Chapter 6 Project Description, and summarised in Chapter 23 Onshore Ornithology of the ES. Greater detail on the potential difference in impacts, e.g. between an open cut or HDD methodology is provided in sections 23.6.3.1 and 23.6.3.2 of Chapter 23 Onshore Ornithology of the ES and taken into consideration for assessing construction impacts.</p> <p>In response to the comment on Table 23.20, detailed information on the project footprint and associated construction activities is presented in Chapter 6 Project Description of the ES, and summarised in Chapter 23 Onshore Ornithology for the purposes of the impact assessment. Detailed design of the onshore cable corridor will occur post consent with details submitted to discharge requirements of the draft DCO prior to construction. No jointing bays will be located within the Sandlings SPA.</p> <p>In response to the comment on the 7 Nightjar territories, the onshore development area has been refined since the presentation of the scoping onshore development area in the PEIR, to take into account potential effects on Important Ornithological Features, including those on nightjar. Generally, the onshore development area has been located in habitats of low importance, at sufficient distance from the SPA to help avoid construction</p>

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	<p>proposed onshore cable corridor. The onshore cable corridor may therefore be within the Nightjars territory and provide Functionally Linked Land, therefore habitat for nesting or foraging may be lost due to the construction of infrastructure associated with the proposed East Anglia TWO project.</p> <ul style="list-style-type: none"> • Section 23.6.3.1.5.4 With regards Marsh Harrier, as there may be direct impacts from habitat loss and indirect disturbance effects, the impact should be considered for Marsh Harriers which form part of the assemblage of Minsmere to Walberswick SPA which may use the area as Functionally Linked Land. • Section 23.6.3.1.9, Para. 193 As a Marsh Warbler was recorded within Leiston-Aldeburgh SSSI, would expect to see consideration of indirect disturbance effects on this species. • Section 23.6.3.2 There is currently no assessment of the levels of Construction disturbance associated with the alternative HDD or open cut trenching options. NE advise the assessment of alternatives be provided in the EIA. • Section 23.6.3.2 There is currently no assessment of the levels of Construction disturbance associated with the alternative HDD or open cut trenching options. NE advise the assessment of alternatives be provided in the EIA. 			<p>disturbance (see layout, Figure 23.1 of Chapter 23 Onshore Ornithology of the ES).</p> <p>In response to the comment on PEIR Section 23.6.3.1.5.4, the effects on SSSI populations of marsh harrier have been considered in the impact assessment. Likely significant effects on European sites (SPA and Ramsar) are considered separately in the Information to Support Appropriate Assessment.</p> <p>In response to the comment on Section 23.6.3.1.9, Para. 193, the disturbance effects on marsh warbler have been considered in section 23.6.3.2.9 of Chapter 23 Onshore Ornithology of the ES.</p> <p>In response to the comment on Section 23.6.3.2, detailed information on the alternative HDD and open-trenching options for crossing the SPA/SSSI and within the landfall area is presented in Chapter 6 Project Description of the ES, and summarised in Chapter 23 Onshore Ornithology of the ES for the purposes of the impact assessment. Greater detail on the potential difference in disturbance impacts, e.g. between an open cut or HDD methodology is provided in section 23.6.3.2 of Chapter 23 Onshore Ornithology of the ES and taken into consideration for assessing construction impacts.</p> <p>In response to the comment on lighting impacts in Table 23.23, detailed information on the project footprint and associated lighting is presented in Chapter 6 Project Description of the ES, and summarised in Chapter 23</p>

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	<ul style="list-style-type: none"> Table 23.23 During the operational phase lighting impacts associated with the substations may increase the extent of effective habitat loss for protected species. Consideration should be given to this and mitigation in the form of lighting design and screening outlined. Section 23.6.3.1.6.5, Para. 175 NE welcome that 'Any potential losses of territories will aim to be compensated for by the erection of new nest boxes in suitable locations within the local area, in consultation with the Suffolk Community Barn Owl Project'. NE would advise that any compensatory habitat is provided in appropriate timescales. 			<p>Onshore Ornithology of the ES for the purposes of the impact assessment. The onshore substation and National grid substation will require motion-sensitive security lighting surrounding the perimeter, and are not anticipated to be permanently lit. Consideration of operational disturbance is given in section 23.6.2 of Chapter 23 Onshore Ornithology.</p> <p>Detailed information on the nature, location and extent of construction activities are presented in Chapter 6 Project Description of the ES, and summarised in Chapter 23 Onshore Ornithology of the ES. Potential habitat loss (Impact 1) and noise, light and vibration disturbance (Impact 2) are described and assessed for each species, in sections 23.6.3.1 and 23.6.3.2 respectively of Chapter 23 Onshore Ornithology of the ES. Further information on specific mitigation measures in relation to Impact 1 and Impact 2, as described above, have also been included in sections 23.6.3.1 and 23.6.3.2 of Chapter 23 Onshore Ornithology. Enhancement measures including provision of suitable habitat for target species throughout the operational period will be considered and discussed with stakeholders in a process separate to this EIA and DCO application.</p> <p>Detailed information on the nature, location and extent of construction activities in relation to the SPA are presented in Chapter 6 Project Description of the ES, and summarised in Chapter 23 Onshore Ornithology of the ES. Greater detail on the potential difference in impacts between an open cut or HDD methodology for</p>

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				crossing the SPA are provided in sections 23.6.3.1 and 23.6.3.2 of Chapter 23 Onshore Ornithology of the ES and taken into consideration for assessing construction impacts. Likely significant effects on European sites (SPA and Ramsar) are considered separately in the Information to Support Appropriate Assessment.
				The comment on PEIR Section 23.6.3.1.6.5, Para. 175 was noted and Barn owl nest boxes would be erected prior to construction commencing. Any habitat management required to mitigate construction impacts would also begin prior to construction.
	<p>PEIR Cumulative Impacts</p> <ul style="list-style-type: none"> Until more detail is provided on the full suite of mitigation measures for Sizewell C and the East Anglia zone projects it is not certain that the cumulative impacts will have been addressed. Section 23.6.3.2.1.5 Cumulative Impact Assessment with Sizewell C Power Station. The final assessment in the ES should be based on the most up-to-date project design and impact assessment available at the time. The ES should consider cumulative disturbance and displacement effects of proposed development at Sizewell C power station and any other relevant projects. 	RSPB; NE	2	Updated information on proposed Sizewell B and Sizewell C developments have been included in section 23.7 of Chapter 23 Onshore Ornithology of the ES. Further information on the proposed East Anglia ONE North project is included in Appendix 23.2 Cumulative Impact Assessment with East Anglia ONE North of the ES.
	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> Inadequate measures have been proposed to address impacts on species of conservation 	RSPB; NE; SCC; SCDC	11	Mitigation associated with minimising the likelihood of a significant effect of construction activities on the Sandlings SPA have been outlined in section 23.6 of Chapter 23 Onshore Ornithology of the ES.

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	<p>concern. Additional measures to ensure such species will be maintained and enhanced (in accordance with the National Planning Policy Framework) should be secured.</p> <ul style="list-style-type: none"> RSPB supports the need to avoid disturbance to this species and for any habitat loss to be reinstated, as outlined in paragraph 160 (p.47). We also recommend net gains for habitat for nightingale be secured as part of the legacy of the project given the conservation status of this species and the need to ensure that conservation objectives for the SSSI are not simply maintained but improved. Additional measures to limit the impact of disturbance on nightjar have been set out within the HRA (paragraph 216 EA2 and paragraph 216 EA1N), which primarily relate to a Breeding Bird Protection Plan (BBPP) and the presence of an Ecological Clerk of Works to ensure no activities take place that could cause disturbance to breeding birds. The principles of these may be appropriate but will rely heavily on a suitable schedule of surveys to ensure accurate understanding of changes to breeding birds in the works area is known. The RSPB recommends that the BBPP update site managers on the works schedule to ensure any impacts on site management or surveys required to effectively manage the site to maintain conservation objectives are minimised. We support the final bullet point of the proposed mitigation, 	(now East Suffolk Council)		<p>The Applicant will not undertake onshore cable route construction works to cross the Sandlings Special Protection Area (SPA) / Leiston – Aldeburgh Site of Special Scientific Interest (SSSI) within the SPA/SSSI boundary or within 200m of the SPA/SSSI boundary during the breeding bird season of mid-February to end of August, unless otherwise agreed with Natural England that (based on monitoring information provided by the Ecological Clerk of Works) bird breeding activities within 200m of the SPA/SSSI crossing works area have ceased.</p> <p>The Applicant will continue to work constructively with Defra and key stakeholders such as Natural England to support the preparation of guidance on the application of Net Gain and in their work to establish potential approaches to achieving biodiversity net gains for NSIPs and marine developments.</p> <p>The comment on the nightjar has been noted. A detailed schedule of works would be provided to RSPB prior to construction commencing. RSPB's recommendations would be followed by the Ecological Clerk of Works during the construction period.</p> <p>In response to the comment on the BBPP, the BBPP would be drafted and agreed with the relevant stakeholders post-consent. Details regarding the content of the BBPP are provided within the OLEMS (Document Reference: 8.7) submitted with this DCO application,</p>

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	<p>specifically, "...Where, in the opinion of the suitably qualified ecologist, disturbance cannot be avoided by mitigation, construction works within the area of disturbance will be suspended until chicks have fledged." The RSPB recommends that such decisions should be taken in conjunction with NE and with the relevant landowners and/or site managers to ensure a fully informed and agreed approach is taken.</p> <ul style="list-style-type: none"> Whilst impacts to habitat may be temporary, it may still take time for any replacement habitat to function. Replacement habitat should be 'like for like' and be in place and fully functional before impacts occur. We recommend that the BBPP also sets out opportunities to make enhancements to retained habitats that would benefit the impact species, such as supporting habitat improvement for the affected species. This would contribute towards overall biodiversity net gains from the onshore elements of the proposed projects. The revised National Planning Policy Framework¹ states that 'planning policies and decisions should contribute to and enhance the natural and local environment by "...providing net gains for biodiversity." To have confidence in any BBPP, we recommend that this be drafted for consideration at examination to ensure that appropriate principles, and the key measures needed to be in place, have been formally agreed. 			<p>secured under the requirements of the draft DCO. No woodlark habitat would be affected by construction activities. Mitigation measures outlined in Section 23.6.3.1.3.5 of Chapter 23 Onshore Ornithology of the ES, would be applied to minimise the effects of habitat loss on turtle dove during the construction phase. Enhancement measures including provision of suitable habitat for turtle dove throughout the operational period will be considered and discussed with stakeholders in a process separate to this EIA and DCO application.</p> <p>In response to the comment on Table 23.23 (pp. 77-80), surveys conducted prior to the commencement of construction activity forms part of the BBPP which provides mitigation during construction. Enhancement measures including provision of suitable habitat for target species throughout the operational period will be considered and discussed with stakeholders in a process separate to this EIA and DCO application.</p> <p>This comment from NE on mitigation measures was noted. Likely Significant Effects on European sites (SPA and Ramsar) within the context of the Sandlings SPA in the Information to support Appropriate Assessment Report.</p> <p>It was noted that NE welcome the incorporation of Turtle dove mitigations.</p> <p>The comment on Section 23.6.3.2.1.5 was noted. Greater detail on the potential difference in impacts, e.g.</p>

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	<ul style="list-style-type: none"> RSPB notes that foraging habitat will be provided for habitat loss (see first comment on turtle dove above). However, breeding habitat should be avoided in the first instance. Additional habitat (for breeding and foraging) should be secured to enhance the area for turtle dove through this project to support national efforts to conserve this species. Table 23.23 (pp. 77-80) summarises the assessments and conclusions for important ornithological features. Within the potential mitigation measures, pre-construction monitoring is listed. The RSPB disagrees that monitoring is a mitigation measure in its own right; it is an activity to inform mitigation requirements or the effectiveness of mitigation. Whilst they will be included within the BBPP, it is important at this stage to ensure clarity on what is appropriate as mitigation and what is not. The RSPB recommends that measures to enhance the sites affected should also be identified in the table to highlight the potential benefits that could be provided as a legacy of the project. Mitigation measures intended to avoid or reduce the harmful effects of a proposed project on a European site may no longer be taken into account by competent authorities at the Habitat Regulations Assessment ("HRA") "screening stage" when judging whether a proposed plan or project is likely to have a significant effect on the integrity of a European designated site and must 			<p>between an open cut or HDD methodology is provided in sections 23.6.3.1 and 23.6.3.2 of Chapter 23 Onshore Ornithology of the ES and taken into consideration for assessing construction impacts. Detailed information on the proposed East Anglia TWO project footprint and associated construction activities is presented in Chapter 6 Project Description of the ES, and summarised in Chapter 23 Onshore Ornithology of the ES for the purposes of the impact assessment. Greater detail on the potential difference in impacts, e.g. between an open cut or HDD methodology is provided in sections 23.6.3.1 and 23.6.3.2 of Chapter 23 Onshore Ornithology and taken into consideration for assessing construction impacts.</p> <p>The comment from SCC and SCDC (now East Suffolk Council) was noted. Detailed information on the alternative HDD and open-trenching options for crossing the SPA/SSSI and within the landfall area is presented in Chapter 6 Project Description of the ES, and summarised in Chapter 23 Onshore Ornithology of the ES for the purposes of the impact assessment. Mitigation measures for habitat loss and disturbance associated with work within and in proximity to the SPA have been included in the impact assessment for turtle dove and nightingale. No habitat loss for woodlark is predicted, based on distribution of historic records.</p> <p>If an open-cut methodology is used to cross the narrowest point of the SPA, the construction would last an estimated one month in duration. The Applicant has</p>

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	<p>be considered at the appropriate assessment stage.</p> <ul style="list-style-type: none"> "Section 23.6.3.2.1.5 Mitigation- NE note a detailed Method Statement would be developed for working within and / or in proximity to the Sandlings SPA and advise this also applies to the Leiston-Aldeburgh SSSI. As the method statement currently forms the main means of mitigation to bird species NE advise that a draft copy would be submitted with the DCO. There is currently insufficient information provided regarding areas of direct habitat loss, and indirect disturbance by noise, light and vibration to comment whether the mitigation proposed would be sufficient." Section 23.6.3.1.3.5, Para. 147 NE welcome the incorporation of Turtle dove mitigation. It is important to note that the bird breeding season for Woodlark starts in February until early August and Nightjar tend to arrive later in spring (April) and tend to leave in August. SCC and SCDC's understanding is that the Applicant propose to cut across the narrowest part of the SPA which is about 150 metres. There is also a network of footpaths in this area. Footpaths well used by walkers with dogs will effectively 'sterilise' an area either side of the path. Mitigation for the works can be seasonal (i.e. over winter) and spatial (i.e. within the sterile zone). It is anticipated that NE, RSPB and Suffolk Wildlife Trust will provide further comments on this in their 			<p>committed to conducting this estimated one month of open cut trenching through the SPA outside of the breeding bird season (mid-February to August inclusive), therefore minimising potential impacts to the features of this designated site. If an HDD technique were to be employed, construction would be approximately 12 months in duration and it would not be possible to impose a seasonal restriction on such works.</p>

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	submissions. Other possible mitigation might be placing the drilling units (for HDD) behind existing landscape features (such as buildings, hedgerows, tree-lines) and having sympathetic hours of operation. It will be for the Applicant to come up with a satisfactory mitigation strategy but there does not appear to be any reason why this particular stretch could not be dealt with out of sequence, should that be necessary.			
	<p>Project Design</p> <ul style="list-style-type: none"> NE preference for HDD under the narrowest point of the Sandlings SPA in preference to open trenching. Section 23.6.3.1.4.6, Para. 162 NE would expect to see potential effects of alternatives of HDD and open trenching across the SPA/SSI presented and used to inform assessment of potential effects and residual impacts There is currently no mention of construction timetable in relation to sensitive periods for designated species, nor any mitigation in this regard. There is currently insufficient information on alternative project design options for NE to provide substantive comments on adverse effect on integrity to Sandlings SPA. The methods for crossing the SPA should be confirmed and the timing of works in relation to features of interest outlined. NE would like to reiterate their preference for HDD under the Sandlings SPA, 	NE	5	<p>The comment from NE in regard to their preference for HDD under the narrowest point of the Sandlings SPA was noted.</p> <p>In response to the comment on Section 23.6.3.1.4.6, Para. 162, detailed information on HDD and open-trench methods across the SPA is presented in Chapter 6 Project Description of the ES, and summarised in Chapter 23 Onshore Ornithology of the ES as part of the impact assessment. Greater detail on the potential difference in impacts, e.g. between an open cut or HDD methodology for crossing the SPA is provided in sections 23.6.3.1 and 23.6.3.2 of Chapter 23 Onshore Ornithology of the ES and taken into consideration for assessing construction impacts.</p> <p>It was noted that NE reiterate their preference for HDD under the SPA/SSSI.</p>

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	over open cut trenching, as outlined in response to the scoping 2017 (231180).			
	<p>General Assessment Comments</p> <ul style="list-style-type: none"> • Consideration over deterring birds from breeding if construction starts before the breeding season. • Skylarks should be assessed. • Desk-based assessment • Areas of arable land seem to be considered to be of low importance. This takes no account of farmland bird species, many of which are on the UK Red List. • Although Schedule 1 Target species of birds and Red List bird species are mentioned in the ornithology methodology, there is no information on the more common species that live in these habitats. • There is a lack of information regarding farmland birds and the impact of these proposals. • It is suggested that "...it is likely that without the proposed East Anglia TWO project, most target species currently found within the indicative onshore development area would decline in numbers over the long-term, should climate changes occur as predicted" (vide Chapter 23, par. 110/111), implying that these wind farms will contribute to the reduction in emissions on such a scale as to prevent the indirect loss of habitats. This is a bold statement and unsupported by any 	<p>Onshore Ecology and Ornithology Expert Topic Group 2 (NE, SCC, SWT and RSPB);</p> <p>Thorpeness Residents Meeting; Local Community Members;</p> <p>Friston Parish Council / SASES; SCC; SCDC (now East Suffolk Council); The Wildlife Trusts / Suffolk Wildlife Trust</p>	11	<p>It was noted that SCC and SCDC (now East Suffolk Council) welcome the appointment of an ECoW. The ECoW would endeavour to maintain good communication with all relevant stakeholders.</p> <p>A Construction Method Statement (CMS) will be developed for the construction activities and will adhere to construction industry good practice guidance. This will incorporate a BBPP which will ensure that the nests, eggs and young of any bird species are protected. Detail with regard to mitigation measures and the content of the BBPP is given in the OLEMS (Document Reference: 8.7) submitted with this DCO application, secured under the requirements of the draft DCO.</p> <p>Connectivity of SSSI noted features and individuals found within the onshore ornithology study area is considered unlikely, with SSSI birds unlikely to move widely away from SSSI wetland habitats to those of lower suitability within the onshore development area. Further rationale for scoping out wildfowl and waders can be found in Table 23.19 in Chapter 23 Onshore Ornithology of the ES.</p>

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	<p>data within the PEIR. It would be useful to have quantifiable data to back this statement up.</p> <ul style="list-style-type: none"> Justification is required for why wildfowl and waders have been scoped out of the assessment, as 75% of Europe's wildfowl commute through the North Sea and are often important migratory visitors to Suffolk. This includes migrators from east- west and north-south. An Appropriate Assessment is required. New guidance from the Bat Conservation Trust and Institute of Lighting Professionals may supersede the 2009 guidance quoted in the PEIR. 			
	<p>Impacts on birds</p> <ul style="list-style-type: none"> Concern over impacts on nightingales. Migratory birds should be protected. Close proximity to Minsmere. Impacts on owls, buzzards, skylarks, sparrow hawks, swifts, sand martins and sparrows. Impact on bird habitats. Impact on ground nesting birds. Impacts on migration patterns. Thorpeness Meare would be blighted by pollution and noise. Impacts to raptors and birds of prey. Impacts on nightjars. Impacts to sand martins nesting in the cliffs at Thorpeness. 	<p>Save our Sandlings; Local Community Members; Friston Parish Council / SASES; Aldringham-cum-Thorpe Parish Council; SCC; SCDC (now East Suffolk Council)</p>	70	<p>The onshore ornithology assessment has been carried out by MacArthur Green, following relevant guidance provided by the Chartered Institute of Ecology and Environmental Management (CIEEM) (2018), NE (2010; 2015a) and Scottish Natural Heritage (SNH 2016; 2018) relevant to the surveying and assessment of onshore renewable energy projects.</p> <p>Potential impacts in relation to woodlark, turtle dove, nightjar, nightingale and other protected birds are given with regard to habitat loss and disturbance in sections 6.3.1 and 6.3.2 respectively of Chapter 23 – Onshore Ornithology of the ES. This includes consideration of populations within the Sandlings SPA. Some key mitigation factors are outlined below:</p>

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	<ul style="list-style-type: none"> The cable landfall site is adjacent to the Thorpeness Common SSSI and the cable route borders the Sandlings SPA, crosses the river hundred SLA and travels through the wooded area adjacent Aldringham Court and along Fitches lane. All are important habitat for several species of protected birds and rare wildlife including nightingales, nightjars, turtle doves, woodlarks, marsh harriers and glow-worms. Aldringham-cum-Thorpe Parish Council are very concerned that the loss of habitat and significant disturbance to habitat during the construction will have a devastating impact to our protected and rare species. We would like to see a level of mitigation that will ensure that these birds are able to remain within these areas. Impacts on breeding Woodlark and Nightjar in the Sandlings SPA. 			<p>In response to possible loss of turtle dove feeding habitat, a location within the onshore development area has been identified for sowing turtle dove seed mix, to create optimal feeding habitat throughout the construction phase when works are being undertaken along cable route sections 1 and 2 . This supplementary feeding area has in recent years been used for arable and pig farming, and based on advice provided by Operation Turtle Dove initiative, is located within 300m of previously recorded turtle dove territories, in an open location adjacent to field boundaries, and also in proximity to water (the agricultural reservoir). It would comprise a strip of land measuring a minimum 50m long by 5m wide, or similar. More information on the assessment and mitigation of Turtle Dove populations can be found in section 6.3.1.3 of Chapter 23 Onshore Ornithology of the ES.</p> <p>If HDD techniques are used for the cable to cross the SPA/SSSI, no additional mitigation is required.</p> <p>Under the scenario of open-cut trenching being used to cross the SPA/SSSI, the cable route working width would be minimised to the minimum required (16.1m), and limited to cable trenches and working area only. Micro-siting will be used to avoid nightingale nest locations when trenching through the SPA/SSSI, where possible.</p>

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				In addition to this embedded mitigation, habitat suitable for nightingale that is within both the SPA/SSSI and the onshore development area (i.e. where the onshore development area overlaps the SPA/SSSI), would be managed following recommended guidelines (e.g. BTO 2015), with the aim of providing optimal habitat for breeding nightingale prior to the breeding season that overlaps with construction activities. This may involve maintenance of scrub by cutting any patches that are getting too old and 'leggy', and therefore providing a supply of vigorous new growth. A dense field margin of rank grass and taller herbs around the scrub should also be retained by avoiding mowing during the breeding season. This management would commence prior to the breeding season that overlaps with construction activities to provide the best opportunity for nightingales to utilise the habitat, so that birds displaced by construction works are not lost from the SSSI population. The management would continue through the duration of construction undertaken along cable route sections 1 and 2, until any suitable nightingale habitat which would be subject to temporary loss is reinstated post-construction. Further details and timings of this habitat management would be included in the final Ecological Management Plan (EMP), secured under the requirements of the draft DCO.
Onshore Archaeology and Cultural Heritage	PEIR Survey <ul style="list-style-type: none"> The Expert Topic Group has consistently advised that there is high potential for as yet unknown 	Suffolk Preservation Society; Historic England	6	Post-consent survey approach outlined in Table 24.3, section 24.3.3.1 of Chapter 24 Onshore Archaeology and Cultural Heritage of the ES.

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	<p>below ground remains, especially at the pinch point where the cable route crosses the B1122. Accordingly, it has been recommended that a systematic earthwork assessment was necessary pre determination so that the mitigation could be incorporated into the scheme at the design stage. The SPS maintains its position that trial trenching pre determination is necessary for those key areas of the scheme previously identified by the Expert Topic Group.</p> <ul style="list-style-type: none"> • The technical summary at para 142 states that a Written Scheme of Investigation will be submitted with the DCO alongside the Environmental Statement. However, the mitigation strategy is reliant upon post consent. The SPS strongly objects to this approach and calls for appropriate levels of trial trenching pre decision. The call for upfront trenching has been rejected by the Applicant which raises serious concerns, in particular in fixed locations such as Aldringham Court and Friston, where there is little flexibility in the scheme. In addition, there is a strong case for detailed archaeological investigation in the vicinity of St Mary's Church where there is significant potential for human remains. • Below ground archaeological remains have not as yet been fully evaluated through non-intrusive or intrusive evaluation approaches, and so all interpretations should be regarded as preliminary until the outstanding survey work has been 			<p>Below ground archaeological remains – noted.</p> <p>Comment relating to geophysical techniques recommended as part of scoping has been noted.</p> <p>Comment relating to onshore geophysics has been noted.</p> <p>Noted.</p>

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	<p>completed (Chapter 24.1, paragraphs 5 & 6 (EA1N & EA2)).</p> <ul style="list-style-type: none"> As part of the Scoping Response (8/12/17), Historic England recommended that the most appropriate geophysical techniques should be utilised, which in some cases may result in more than one technique being applied. We are therefore pleased to see that although magnetometry is being employed as standard across all of the proposed development areas, alternative techniques may be considered at a later stage (Table 24.1 (EA1N & EA2)). Noted that the onshore geophysics survey is ongoing and that only preliminary information is available at present (Appendix 24.2 (EA1N & EA2)). Despite this, it can be concluded that the survey work is producing useful information both to guide the iterative design process and to provide information about buried archaeology present within the development area. Pleased to see that the limitations within the walkover survey data caused by access restrictions are considered in Section 24.5.3.2.2 (EA1N & EA2), and that the potential for additional features to survive is recognised on top of the ones discussed within the PEI report. 			
	<p>PEIR Baseline</p> <ul style="list-style-type: none"> Having considered the heritage assessment we affirm our position that the final list of heritage assets identified for further assessment is 	<p>Suffolk Preservation Society; Waveney District Council;</p>	9	<p>The settings assessment has been progressed since the submission of the PEIR (see Appendices 24.7 in Chapter 24 Onshore Archaeology and Cultural Heritage</p>

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	<p>inadequate and limits the assessment of onshore assets to a meagre 6 listed buildings: Friston Church, Little Moor Farm, High House Farm, Woodside Farm, Friston House and Aldringham Court. The Expert Topic Group gave thorough feedback on other assets that must form part of the assessment and we welcome the Applicant's confirmation that The Post Mill and the Friston War Memorial will now be included in the heritage assessment. However, we object to principle of the final selection of substation site before undertaking a detailed assessment of the effects on the significance of the heritage assets.</p> <ul style="list-style-type: none"> • Post publication of the PEIR, SPS wishes to reaffirm that multiple viewpoints from Grove Road across the landscape toward Little Moor Farm and High House Farm and looking south on the PROW toward the church must be included within the heritage assessment. These are key viewpoints across an historic rural landscape that in all probability has remained substantially unchanged for centuries and will be obliterated if the substation goes ahead. Visualisations from these viewpoints are essential to correctly record and illustrate the impact on the setting of those heritage assets. • The Applicant has not yet undertaken a setting assessment for the heritage assets on the coastline that would potentially be impacted by the offshore elements of the projects. At a minimum all Grade II* and I listed buildings, the 	Aldeburgh Town Council; Historic England		<p>of the ES) and takes into consideration the recommendations made by the Expert Topic Group in the January 2019 Expert Topic Group meeting. The results of the settings assessment inform Chapter 24 Onshore Archaeology and Cultural Heritage where relevant (see Sections 24.4, 24.5 and 24.6 in Chapter 24 Onshore Archaeology and Cultural Heritage of the ES).</p> <p>A screening exercise has been undertaken which addresses the impact of the offshore infrastructure on the significance of coastal heritage assets (see Appendix 24.8 Assessment of Offshore Infrastructure on the Significance of Coastal Heritage Assets: A Screening Exercise), the results of which inform Chapter 24 Onshore Archaeology and Cultural Heritage where relevant (see sections 24.4, 24.5 and 24.6 of Chapter 24 Onshore Archaeology and Cultural Heritage).</p> <p>Comment relating to baseline evidence has been noted.</p> <p>The LiDAR data assessment undertaken as part of the DBA (Appendix 24.3 Onshore Archaeology and Cultural Heritage Desk Based Assessment of the ES), used data (made available online) from the Environment Agency, and was undertaken to more broadly characterise the area with regards to currently unrecorded archaeological and cultural heritage remains. This assessment was further supplemented by walkover surveys to support this assessment and will be further informed by a post-consent survey approach outlined in Table 24.3, section</p>

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	<p>Martello Towers and other historic coastal military infrastructure, and the coastal conservation areas should be considered in initial scoping work. Without this work it is not possible to comment on the heritage impacts of this part of the scheme. The need for the setting assessment is amplified by the findings of the SLVIAs.</p> <ul style="list-style-type: none"> • During the Phase 3.5 consultation, the impact of the cable route on the setting of Aldringham Court was highlighted and a full assessment was required. “ the Applicant has still not undertaken this.” • Pleased to see that there is an awareness about the gaps that currently exist in the baseline evidence, and that the potential for below ground remains are based on the potential as indicated by available data (Section 24.5.1, paragraph 94 (EA1N & EA2)). The conclusions may change as new data becomes available and will be updated when necessary (e.g. Section 24.5.3.2.1, paragraph 118 (EA1N & EA2)). • Chain Home Extra Low radar stations, sometimes referred to as ‘K’ stations, which operated as a defensive network for identifying advancing enemy • ships, boats and aircraft approaching the East Coast War Channels and wider area, as well as land-based strategic targets. Therefore, it is worth considering these relationships in further detail. For instance, Orford Castle (known as K138 - which was equipped with ‘surface watching’ 			24.3.3.1 of Chapter 24 Onshore Archaeology and Cultural Heritage of the ES.

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	<p>capability during the Second World War) has a visible and perceivable link to the coastal and offshore seascape, and seabed heritage assets, in the vicinity of where the offshore renewable energy infrastructure is planned. And it could also therefore be inferred that change - through the placement of a series of linear wind turbines, adjacent to the current coastline – acts as a helpful physical reminder to us all as to significant events that occurred during both wars, within the offshore visible seascape.</p> <ul style="list-style-type: none"> Section 2.4 (pp 5) states that Environment Agency LIDAR data at 2m resolution was interrogated as part of the DBA. It should be noted that the Historic England guidance document 'Using Airborne Lidar in Archaeological Survey: the Light Fantastic (2018, p28) states that 2m resolution data are generally inadequate for recording many archaeological features; 1m resolution is the basic minimum. 			
	<p>PEIR Methodology</p> <ul style="list-style-type: none"> The PEIR assesses that there will be significant long term and permanent effects on the area north of Friston within approximately 1km around the on shore substations (page 80 Chapter 29 LVIA) with mitigation at 15 years (page 84). SPS support this conclusion but question whether the LVIA can be relied upon when it states that there will be no significant long term visual effects other than on view point 8 (Saxmundham Road, North 	Suffolk Preservation Society; Historic England.	9	Agreement on the conclusions that significant effects of the onshore substations will occur within a localised area is welcomed. 'With mitigation' impact assessments (at 15 years) have been updated to address changes in National Grid Infrastructure, the updated OLMP, (presented in the OLEMS (Document Reference: 8.7) submitted with this DCO application), and revised assumptions for woodland heights at 15 years post planting. Heights of woodland planting at 15 years post planting have been reduced from PEIR to ES, to

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	<p>of Friston), Viewpoint 9 (Aldeburgh Road, South of Friston) and at Grove Wood (Manor Farm) to northern edge of Friston.</p> <ul style="list-style-type: none"> As discussed during the recent meeting with the Applicant, post publication of the PEIR, SPS reaffirms that views from Grove Road across the landscape must be included within the landscape and visual impact assessment. Grove Road provides a series of viewpoints across an historic rural landscape that in all probability has remained substantially unchanged for centuries and will be obliterated if the substation goes ahead. Visualisations from Grove Road are essential to correctly record and illustrate the impact on receptors which will include not just those driving along Grove Road but those walking along the road to connect with the network of footpaths either side of the road and cyclists using cycle route 42 from Snape to Bramfield. We are also concerned that longer views from important viewpoints have not been identified or assessed. For example, chapter 29 LVIA figure 29.9 Onshore substation ZTV (with visual receptors) includes the Sandlings Long Distance Walking Route but not Snape Maltings. We consider that the long views from Snape Maltings, particularly the upper floor of the concert hall, may be impacted and requires assessment. The realignment of the pylon line, including 4 sealing end compounds, will bring the wirescape closer to the heritage assets Little Moor Farm and 			<p>address feedback from SCC/ESC, guidance and precedents from other NSIP projects. 'With mitigation' impact assessments have been updated in Appendix 29.3 Landscape Assessment and 29.4 Visual Assessment, and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment.</p> <p>Two viewpoints were included from Grove Road in the PEIR at Viewpoint 3 (Figure 29.15) and Viewpoint 4 (Figure 29.16). An additional viewpoint has been added to the ES at the closest point of Grove Road at Viewpoint 14 (Figure 29.26).</p> <p>The ZTV in Figure 29.7 shows that there is no visibility of the substations from Snape Maltings, due to screening by intervening landform and vegetation.</p> <p>The photomontage visualisations in Figures 29.13 – 29.26 show the proposed National Grid overhead line modifications, including sealing end compounds. This National Grid infrastructure is also shown in the OLMP (presented in the OLEMS (Document Reference: 8.7) submitted with this DCO application), together with proposed mitigation. The landscape and visual impacts assessed in Appendix 29.3-29.5 and summarised in Chapter 29 Landscape and Visual Impact Assessment include these National Grid overhead line modifications and infrastructure.</p>

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	<p>High House Farm. This will have a significant unacceptable negative visual impact on the landscape and the setting of the heritage assets. No details are provided about the sealing end compounds which appear on the Indicative Landscape Mitigation Plan (but are not included within the key). There have only been minimal attempts to demonstrate the impacts of these and the overhead line realignment works on Friston as they do not appear in the Visualisations. Clarification is required on the visual impacts of these works.</p> <ul style="list-style-type: none"> Table 24.1, notes that we have raised this as a concern and although it will be used as a standard EIA approach, the cultural heritage chapter and appendices will be underpinned by professional judgement and narrative. While we welcome this approach, the matrices assessment still seems to be confusing. These use the term 'perceived heritage importance' which is described as being associated with or to heritage significance. We do not recognise or use the term 'perceived heritage importance' and consider it would be more straightforward to simply use the term heritage significance, which is more widely understood. We strongly recommend this term is removed from the full ES to avoid further confusing the assessment. Heritage importance definitions are also not consistent in the PEIR and the DBA and as the latter informs the former this does not seem 			<p>The impact assessment methodology as presented in Chapter 24 Onshore Archaeology and Cultural Heritage (see section 24.4.3) has been updated since the submission of the PEIR to ensure consistency with regard to the assessment and supporting documentation, particularly with regards to Appendices 24.3, 24.7 and 24.8.</p> <p>Comment relating to onshore and offshore assessment methodologies correlating has been noted.</p>

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	<p>helpful. For example, in Table 24.8 assets of high perceived international/national importance include GI II* and II buildings and conservation areas with buildings of high heritage significance (it does not refer to other conservation areas although almost every conservation area will contain a listed building). In the DBA the criteria for assessing the importance of heritage assets, Table 1, classes conservation areas and grade II buildings as being of medium importance. This is a contradictory and the text needs to be amended in the ES.</p> <ul style="list-style-type: none"> • Pleased to see that the assessment methodologies used onshore and offshore have been correlated in order to ensure an integrated and coherent account of the historic environment and the degree to which the project may impact on this resource (Section 24.1, paragraph 9 (EA1N & EA2)). • Pleased to see that there is an awareness about the gaps that currently exist in the baseline evidence, and that the potential for below ground remains are based on the potential as indicated by available data (Section 24.5.1, paragraph 94 (EA1N & EA2)). • The conclusions may change as new data becomes available and will be updated when necessary (e.g. Section 24.5.3.2.1, paragraph 118 (EA1N & EA2)). 			
	PEIR Impacts	Suffolk Coast and Heath	21	Potential impacts upon all archaeology and cultural heritage assets (as indicated by known / available data)

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	<ul style="list-style-type: none"> Concern about the impact on the nationally designated AONB during the construction phase of the installation of the cables. In particular it raises concern about: <ul style="list-style-type: none"> Impacts on cultural heritage during construction and operation. The proposals have the potential to negatively impact the archaeology and historic assets of the AONB and associated hinterland. Works should recognise the importance of archaeological and historic asset features in the AONB and systems should take a precautionary principle to avoid damage and where damage cannot be avoided to safeguard such features. SPS objects to the inadequate information provided regarding the impacts of offshore and onshore elements on the cultural heritage and landscape value as evidenced by the PEIR, including an absence of any assessment of the offshore impacts on the heritage coastline and in particular the AONB. SPS objects to the absence of trial trenching prior to submission of the DCO in areas of known archaeological sensitivity. Settlements along the Heritage Coast include numerous heritage assets which historically and functionally relate to the sea and derive their significance from their relationship to it. It is therefore necessary to consider the potential impact on the setting of designated heritage 	AONB Partnership; Suffolk Preservation Society; Historic England		<p>are considered in Section 24.6 in Chapter 24 Onshore Archaeology and Cultural Heritage of the ES, including those within the AONB (where within the parameters of the study areas and onshore development area). The impact of offshore infrastructure on the significance of coastal heritage assets has been addressed as part of a screening exercise (see Appendix 24.8 Assessment of Offshore Infrastructure on the Significance of Coastal Heritage Assets: A Screening Exercise in Chapter 24 Onshore Archaeology and Cultural Heritage of the ES).</p> <p>The settings assessment has been progressed since the submission of the PEIR (see Appendix 24.7 Assessment of the Impact of Onshore Infrastructure in the Setting of Heritage Assets in Chapter 24 Onshore Archaeology and Cultural Heritage of the ES). The results of the settings assessment inform Chapter 24 Onshore Archaeology and Cultural Heritage of the ES where relevant (see sections 24.4, 24.5 and 24.6).</p> <p>A screening exercise has been undertaken which addresses the impact of the offshore infrastructure on the significance of coastal heritage assets (see Appendix 24.8 Assessment of Offshore Infrastructure on the Significance of Coastal Heritage Assets: A Screening Exercise in Chapter 24 Onshore Archaeology and Cultural Heritage of the ES), the results of which Chapter 24 Onshore Archaeology and Cultural Heritage of the ES where relevant (see sections 24.4, 24.5 and 24.6).</p>

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	<p>assets both in daylight and during the hours of darkness when illuminated.</p> <ul style="list-style-type: none"> Chapter does not include an assessment of the impacts of the offshore element of the project on the heritage of the coastline. Aldeburgh, Southwold, Orford, South Lowestoft and Dunwich are all designated conservation areas which are characterised by their coastal location and relationship with the sea and make important contributions to the special qualities of the AONB. For example: sea defences such as Aldeburgh Martello tower; Southwold and Orford Ness lighthouses; Covehithe and Walberswick churches, St Bartholomew's Church Corton which has received a grant from the MHCLG Coastal Revival Fund with the view to restoring the church tower as a coastal viewing point; sea resort architecture including the House in the Clouds at Thorpeness; and other domestic architecture such as Marine Villas in Southwold that have been designed to capture views of the sea. Furthermore, the conservation areas along the Suffolk coastline also have key views that need to be fully identified and assessed in order to properly quantify the cultural heritage impacts of the offshore development. <ul style="list-style-type: none"> It is crucial to consider the impact on the setting of these heritage assets and coastline both in daylight and during the hours of darkness when the turbines are illuminated. In view of the conclusions of 			<p>Post-consent survey approach is outlined in Table 24.3, section 24.3.3.1 of Chapter 24 Onshore Archaeology and Cultural Heritage of the ES.</p> <p>Offsite highway works are temporary mitigation measures to facilitate the construction of the proposed East Anglia TWO project. Consideration of this does not form part of the heritage assessment work.</p> <p>The settings assessment has been progressed since the submission of the PEIR and takes account of Historic England's views upon the matter (see Appendix 24.7 Assessment of the Impact of Onshore Infrastructure in the Setting of Heritage Assets). The results of the settings assessment inform 24 Onshore Archaeology and Cultural Heritage where relevant (see sections 24.4, 24.5 and 24.6).</p> <p>The results of the settings assessment are provided in Appendix 24.7 Assessment of the Impact of Onshore Infrastructure in the Setting of Heritage Assets and inform Chapter 24 Onshore Archaeology and Cultural Heritage of the ES where relevant (see sections 24.4, 24.5 and 24.6).</p> <p>The woodland area to the south of Aldringham Court (Raidsend), a Grade II Listed Building, is considered within Appendix 24.7 Assessment of the Impact of Onshore Infrastructure in the Setting of Heritage Assets of the ES. The onshore development area has been refined to maintain a woodland buffer between Raidsend</p>

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	<p>the LVIA Chapter 29 - that the impacts upon the AONB will be significant - it is surprising that the project can have progressed this far without due regard being paid to this key area of environmental impact. Clarification is therefore required regarding the potential impacts upon the setting of heritage assets.</p> <ul style="list-style-type: none"> The impact of the 16m wide tree loss associated with the cabling at Aldringham Court will result in permanent harm to the setting of this asset. Despite raising this from a very early stage the assessment of the proposed works on the setting of the asset is still outstanding. In the absence of this crucial piece of work to determine heritage harm it is not possible to consider how those impacts can be mitigated. Heritage assessment has excluded consideration of any potential impacts from the proposed offsite highway modifications. Without further information it is not possible to assess the extent of any impacts, but a number of listed buildings may be affected at both the A12 River Ore bridge strengthening and the Farnham junction improvements. Clarification of the impacts is required and therefore these should be included in the final heritage assessment study. Historic England's principal concern is the impact of the national grid and onshore substations on the significance of the Church of St. Mary at 			<p>and the onshore development area; embedded mitigation reduces the onshore cable width to 16.1m at this location, in order to reduce woodland loss; and replanting is to be considered as a feasible option.</p> <p>Comment relating to main mitigation approach has been noted.</p> <p>Comment relating to joined-up approach has been noted.</p> <p>Noted. This is acknowledged in section 24.5.3.2.1.1 of Chapter 24 Onshore Archaeology and Cultural Heritage of the ES.</p> <p>Noted. This is included within the Outline Written Scheme of Investigation (Document Reference: 8.5) which accompanies the DCO application, secured under the requirements of the draft DCO.</p> <p>Noted. The former chapel site at Buxton (KND 009 and HA 6) has been subject to geophysical survey and will also be targeted in the post-consent survey outlined in Table 24.3, section 24.3.3.1 of Chapter 24 Onshore Archaeology and Cultural Heritage of the ES.</p> <p>Noted. An 'action plan' (approach) can be provided to Historic England in advance of construction works as part of the final Code of Construction Practice (CoCP), produced post-consent to discharge the requirements of</p>

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	<p>Friston which is listed grade II*. We are however concerned by the PEI conclusion which states that on the basis of the analysis undertaken to date, it considers the harm would be less than substantial (see Paragraph 229: EA1N & 2). The daytime visual effects are helpfully illustrated in the visualisations that have been produced to support the PEIR. Having reviewed these and using our own analysis and professional judgement we consider the development would result in a high degree of residual harm to the setting of the church, and although we accept this would be less than substantial, this would be in our view be severe harm.</p> <ul style="list-style-type: none"> In our previous correspondence we have identified the grade II* post mill which lies on the western side of the village as a building of interest. It dates from the early nineteenth century and was modified some 60 years later. Its form articulates this evolution and the listing description notes it is judged to be one of the finest post mills in the world. It is encircled by the village but as one of the tallest post mills in the country it is visible in places above the houses and potentially in longer views from the surrounding area. The DBA notes that the Zone of Theoretical Visibility predicts there is potential for views of the mill in combination with the substation locations to the south of the mill. It considers this would not adversely affect the contribution that setting makes to significance and proposes no further 			<p>the draft DCO. This will also be included within the Outline Written Scheme of Investigation (Document Reference: 8.5) , submitted with this DCO application, with appropriate cross reference made.</p> <p>Assessment of potential impacts to landscape receptors associated with the onshore substations is contained within Chapter 29 Landscape and Visual Assessment of the ES.</p> <p>Assessment of potential impacts to designated and undesignated heritage assets associated with the onshore substations is contained within Chapter 24 Onshore Archaeology and Cultural Heritage of the ES.</p>

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	<p>assessment (see DBA pp 41: EA1N & EA2). It would be helpful if more information in the form of further analysis and photomontages could be provided in relation to this.</p> <ul style="list-style-type: none"> While Historic England's primary concern relates to the operational impacts of the development and the resulting residual harm, we are also concerned that the impacts from the construction phases are likely to cause harm to the significance of the church. The Desk Based Assessment states that due to the temporary nature of the construction works, they would not result in material harm, (see DBA pp 35: EA1N & EA2). There does not appear to be a reference to the length of the construction period (which should cover the options of simultaneous and sequential building of both developments). However, given the proximity of the substation site to Friston church, it seems likely that there would be both visual and environmental impacts, for example noise and light, during construction. This would detract from the appreciation of the church in its essentially rural setting. We recommend information is provided on the construction period relating to both scenarios and a full assessment of all the likely impact of this is undertaken. The PEIR also says there is no reason to predict other effects (environmental) would materially affect heritage significance, and we recommend this is reconsidered (see Chapter 24, Paragraph 102: EA1N & EA2). 			

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	<ul style="list-style-type: none"> Concerns about the impact of the proposal upon the setting and significance of the grade II listed Aldringham Court (formerly known as Ridsend). We are pleased you have recognised that this development would bring permanent change to the significance of Aldringham Court through a development within its setting, as noted in the ADBA (Appendix 24.1: EA1N & 2). Likewise, we agree that the changes are likely to diminish the contribution that setting makes to the heritage significance of the house and consider this would result in a high degree of harm. We also agree that this and any proposed mitigation merits further consideration and analysis in the full ES (para 219). We note this garden area of the house represents the only significant area of tree felling as noted in the Summary of Significant Effects – Construction (Figures 29.12a and b: EA1N & 2). Pleased to see that the main mitigation approach used will be avoidance, micro-siting and route refinement. The detailed design of the onshore elements will be informed by evidence such as the archaeological assessment of the geophysical surveys (paragraph 29 (EA1N & EA2)). Pleased to see a joined-up approach being implemented and that the archaeological considerations are at the heart of the design process. We also considered there is a possibility of locating archaeological sites of equivalent value to a scheduled monument (as set out in policy under footnote 63 of the National Planning and 			

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	<p>Policy Framework). In this landscape we would be particularly interested in understanding more about the prehistoric settlement and distribution of burial mounds, as these, particularly upstanding barrows are the dominant surviving designated archaeological features in the vicinity of the development.</p> <ul style="list-style-type: none"> As discussed at the Expert Topic Group meetings we are aware that the cable corridor would involve significant impacts upon a number of non-designated sites. We recognise the Applicant have provided large scale geophysical survey and that this has in turn provided a great deal of new information in relation to the range of non-designated archaeological assets. We remain concerned however that no evaluation will be undertaken to ground truth any of these new sites, or the previously known HER records. Given our experience of development along the Suffolk coast and the extraordinary archaeological and evidential value that has been identified in other projects we need to raise the issue of risk. Likewise given our experience of the Bawdsey cable landing site we recommend thought be given to further evaluation of the EA1N and 2 landing site, to ensure that the archaeological evidence can be characterised. This will help inform decision making in terms of the timing and resourcing during the construction phase. Agreement that there is the potential for the non-designated heritage assets to suffer from both 			

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	<p>direct and indirect impacts as a result of the proposed development (Section 24.5.3.1, paragraph 108 (EA1N & EA2)), but as the remains have not yet been fully evaluated the full extent of any impacts cannot be determined in detail. Despite this, the archaeological potential of the onshore development area has been classed as being 'medium' at this stage, but this may change as the evaluation stages are completed (Section 24.5.3.2.1.1, paragraph 114(EA1N & EA2)).</p> <ul style="list-style-type: none"> • Table 24.12 (EA1N & EA2) provides a summary of archaeological areas identified in the interim geophysical survey report, which has highlighted the potential for several complex sites. One of the sites may include the remains of a post-medieval windmill. If wooden remains are present within this structure, then the potential for dendrochronology to date the remains should be considered. • Agreement that the areas of archaeological potential should be considered in terms of the worst case scenario when developing appropriate mitigation strategies at this stage due to the fact that the evaluation process has not been completed and because it can be modified/updated as more information becomes available (Section 24.5.3.4, paragraphs 127 & 128; Section 24.6.1.1.1.1, paragraph 157; Section 24.6.1.1.1.2, paragraph 163; Section 24.6.1.1.1.3, paragraph 167 (EA1N & EA2)). For example, the 			

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	<p>potential for human remains to be associated with the former chapel site at Buxton should be considered and should be evaluated carefully (Section 24.6.1.1.1.3, paragraph 165) and/or avoided (Section 24.6.1.1.2, paragraph 168 (EA1N & EA2)). We are also pleased to see that the archaeological importance of deposits of paleoenvironmental and geoarchaeological potential are also included in the discussion, and that they have been classified as being of high potential as a worst case scenario at this stage (Section 24.5.3.4, paragraph 130(EA1N & EA2)).</p> <ul style="list-style-type: none"> • Section 24.6.1.5 (EA1N & EA2) discusses the potential impact that the bentonite drilling fluid used in HDD may have on buried archaeology. We are pleased to see that a strategy has been developed to mitigate the risks of bentonite slurry outbreak to ensure that fluid pressures are monitored and an action plan developed so that any breakout will be handled quickly and efficiently (Section 24.6.1.5.1, paragraph 209 (EA1N & EA2)). Historic England would like to see the action plan to ensure that the buried archaeology will be managed appropriately in relation to the potential impact upon the historic environment. • Our primary concern is the impact of the onshore substations (EA1N and 2), and for the National Grid Substation on the significance of the Grade II* listed Friston church through a development within its setting. Both schemes if completed 			

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	would result in a cumulative impact. They also both require landscape planting as a buffer for the scheme, which would bring some additional harm to the wider setting of the church. In our view this impact would be residual and would equate to a severe level of harm. We are also concerned about the residual harm to the setting of the Grade II House known as Aldringham Court.			
	<p>PEIR Cumulative</p> <ul style="list-style-type: none"> If developments are built sequentially, the duration and therefore the impact would be longer, but is still considered temporary, we do not therefore consider that this has been adequately assessed in relation the impact on the highly graded assets in Friston. Concerns about the impact of the planting itself on the setting and significance of the church. Although extensive woodland and tree planting belts exist in the landscape to the north and northeast of Friston, the landscape which forms the immediate setting of the church is much more open and contributes to the distinctive context of the church. Undertaking extensive planting by way of mitigation does have the potential to screen a harmful development but it also has the potential to bring considerable change to the historic landscape in its own right, through the use of dense planting in an area or view that is characterised by open countryside and long range 	Historic England; Suffolk Preservation Society.	4	<p>Cumulative impacts are addressed in Section 24.7 and Appendix 24.2 Archaeology and Cultural Heritage Cumulative Impact Assessment with the Proposed East Anglia ONE North Project in Chapter 24 Onshore Archaeology and Cultural Heritage of the ES. As well as consideration made to East Anglia TWO in conjunction with East Anglia ONE North in Appendices 28.7 and 28.8 in Chapter 24 Onshore Archaeology and Cultural Heritage of the ES.</p> <p>More detailed information is available than at the time of the PEIR, therefore section 26.7.2 of Chapter 24 Onshore Archaeology and Cultural Heritage now includes a detailed assessment of the potential for cumulative impacts with Sizewell C New Nuclear Power Station.</p> <p>The results of the settings assessment are provided in Appendices 24.7 Assessment of the Impact of Onshore Infrastructure in the Setting of Heritage Assets and inform Chapter 24 Onshore Archaeology and Cultural</p>

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	<p>views. Planting therefore has the potential to contribute to the cumulative impact and has a residual effect.</p> <ul style="list-style-type: none"> Indicative Landscape Mitigation Plan see Fig 29.11 - interested in understanding the impact of the planting to the south of the substation site which is closest to the church and village of Friston. Further information is required in the ES about the contribution this landscape makes to the setting and significance of the church, and the impact of the mitigation, including bunds, planting and other measures would have upon it, particularly the heavy screening to the south and nearest to the church (e.g. Figure: 29.14c & e: Viewpoint 2: Friston, Church Road - EA1N & 2). We also note there are similar issues and concerns in relation to the Grade II listed building to the north of the sub-station site. SPS objects to the lack of analysis of the cumulative landscape and heritage impacts of EA1(N) with EA2, National Grid substation and Sizewell C. Clarification is required on the impacts on the special qualities of the AONB and its setting, including the cumulative HGV and other vehicular movements during the construction phase of the offshore and onshore infrastructure. 			<p>Heritage where relevant (see sections 24.4, 24.5 and 24.6).</p> <p>The OLEMS (Document Reference: 8.7) secured under the requirements of the draft DCO and submitted with this DCO application, and the text in rows above provides further detail.</p> <p>Cumulative effects with the Sizewell C Project are assessed in Appendix 29.5.</p>
	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> The majority of harm arising from the development would occur in heritage terms during the operational phase and would therefore be 	Suffolk Energy Action Coalition; Suffolk Preservation	3	The Applicant is committed to working with the Local Planning Authority to develop an appropriate masterplan for the substation site that incorporates necessary landscaping proposals for screening purposes that does not have a significant impact on cultural heritage assets.

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	<p>long term, if not permanent. the Applicant is yet to provide a full assessment of the development's impact in heritage terms and has therefore failed to discharge the presumption in favour of conservation of designated heritage assets as required by paragraph 193 of the NPPF which states "<i>when considering the impact of proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation ... this is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance.</i>"</p> <ul style="list-style-type: none"> The indicative landscape masterplan shows large blocks of planting to the south and west of the Friston substation site. However, the scale and nature of the planting shows no regard to the setting of heritage assets or the character of the historic landscape and we are concerned that it will, of itself, be harmful. SPS are also concerned that the proposed water management zones and screen planting do not reflect the existing landscape character and would appear alien and disruptive. The deeply rural character with its landmark features of the church and the windmill will be irrevocably altered and adequate mitigation is limited by the physical constraints. Would also be useful for the outline Written Scheme of Investigation to be as detailed as possible in terms of the sort of approaches that 	Society; Historic England		<p>An updated version of the landscaping proposals is presented within the OLEMS (Document Reference: 8.7) submitted with this DCO application.</p> <p>The OLMP (presented in the OLEMS (Document Reference: 8.7) submitted with this DCO application) has been developed since the PEIR in consultation with the Expert Topic Group and following public information day feedback. The planting has been designed to find a balance between the need to screen the substations and be set back from heritage receptors to maintain their open, agricultural setting. The landscape mitigation proposed is described in section 29.3.4 of Chapter 29 Landscape and Visual Impact Assessment and in the separate OLEMS (Document Reference: 8.7).</p> <p>The Outline Written Scheme of Investigation (Document Reference: 8.5) has been submitted as part of the DCO application, secured under the requirements of the draft DCO.</p> <p>SUDS basins are proposed to the west and south-west of the substations, as shown in the OLMP (presented in the OLEMS (Document Reference: 8.7) submitted with this DCO application) and will be designed in accordance with best practice (CIRIA, 2015). Effects on the setting of Friston Church and Windmill are assessed in Chapter 24 Onshore Archaeology and Cultural Heritage. National Grid substation with AIS electrical infrastructure is assessed as the realistic worst-case in</p>

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	<p>may be used and the remains that will be evaluated/assessed. We are pleased to see that the preferred option for mitigation is preservation in situ and/or avoidance (Section 24.6.1.1.3, paragraph 173; Section 24.6.1.2.2, paragraph 190 (EA1N & EA2)).</p> <ul style="list-style-type: none"> • Good to see that a reporting protocol will be developed for areas where intrusive works will be carried out without an archaeologist present, and that it will follow the protocols and procedures outlines in the Offshore Windfarms Archaeological Protocol document and ORPAD (paragraph 36 (EA1N & EA2)). • All impacts and archaeological mitigation also needs to be captured in the terrestrial Written Scheme of Investigation , which would also need to ensure there is adequate overlap with the marine Written Scheme of Investigation in relation to the intertidal area. The applicant also needs to ensure the wording of DCO captures all works particularly if these works would lie outside of the main construction phases, or in the event that these are considered to be preliminary matters. 			<p>the LVIA. Visualisations showing the National Grid substation with GIS electrical infrastructure have been produced in Figures 29.27 - 29.40 for comparison.</p> <p>Reporting protocol has been noted</p> <p>Noted. The Outline Written Scheme of Investigation (Document Reference: 8.5) , which accompanies this DCO application, has been prepared in a manner which acknowledges this comment.</p>
	<p>Further Assessment Comments</p> <ul style="list-style-type: none"> • Potential presence of earthwork features needs to be considered to be mitigated effectively. 	Archaeology and Cultural Heritage Expert Topic Group (Historic England, Suffolk	66	<p>Post-consent survey approach is outlined in Table 24.3, section 24.3.3.1 of Chapter 24 Onshore Archaeology and Cultural Heritage of the ES.</p> <p>The settings assessment has been progressed since the submission of the PEIR (see Appendix 24.7 Assessment</p>

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	<ul style="list-style-type: none"> Viewpoints to be considered in the settings assessment: <ul style="list-style-type: none"> Friston War Memorial to be considered. Group value between Friston War Memorial and Friston Church should be considered. Friston Moor properties should be considered as a group. Friston Post Mill to be included in the settings assessment. Views from The Green should be included. Views from Grove Road towards listed farmhouses (cultural heritage specific). LVIA viewpoint to the east of Friston (south of Grove Wood woodland). Views from the church tower of Church of St Marys is recommended. Geophysical survey of the wider scheme aspects (overhead realignment areas, water management, offsite access areas etc.). These aspects should be considered in terms of sub-surface remains and above ground heritage assets. Results of the geophysical survey needs to be tested by trial trenching. However, an alternative option could be trail trenching in parallel with submission (post submission before examination or discharge of conditions). Potential for Anglo-Saxon remains to be considered. 	Coastal and Waveney District Council (now East Suffolk Council), SCC, Headland Archaeology and SPS); Historic England; SCDC (now East Suffolk Council) Meeting; SPS; Church of St Mary the Virgin, Friston; Local Community Members; Friston Parish Council / SASES; Aldringham-cum-Thorpe Parish Council; Suffolk Energy Action Coalition; SCC; SCDC (now East Suffolk Council)		<p>of the Impact of Onshore Infrastructure in the Setting of Heritage Assets of the ES) and takes into consideration the recommendations made by the Expert Topic Group in the January 2019 Expert Topic Group meeting. The results of the settings assessment inform Chapter 24 Onshore Archaeology and Cultural Heritage where relevant (see sections 24.4, 24.5 and 24.6 of the ES).</p> <p>Where possible (land access permitting), further geophysical survey has been undertaken in areas not previously accessible for the PEI stage, the results of which are detailed in Appendix 24.4 Geophysical Survey Report, Section 24.5 and Section 24.6 of Chapter 24 Onshore Archaeology and Cultural Heritage of the ES. Other areas still requiring completion of geophysical survey will be undertaken pre-consent, again land access permitting, as discussed in consultation with SCCAS. Although these works will not be completed in time for their results to inform and be incorporated within Chapter 24 Onshore Archaeology and Cultural Heritage of the ES, it has been agreed with the Expert Topic Group that the results will be available for review. The results of these survey works will ultimately serve to inform and contribute to the development of post consent mitigation strategies in relation to the archaeological and cultural heritage resource.</p> <p>Given anticipated timescales and the logistics associated with coordinating optimum conditions for fieldwalking across potentially multiple land parcels with</p>

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	<ul style="list-style-type: none"> • Metal detecting and targeted field walking to be undertaken (ideally pre-consent) – use experienced metal detectorists. • Suggestion that ground truthing the development area should be done pre-consent. • Lack of settings assessment at Friston and Aldeburgh Road. • Intrusive works should be included in the onshore and offshore Written Scheme of Investigations. • Concern over misleading results from geophysical surveys with sandy type soils. • The same standards of quality as EDF should be used. • Regarding coastal heritage assets, there are exceptions to group value (i.e. impacts on some individual heritage assets may be relevant). • Lacking detailed analysis of heritage impacts and cumulative heritage impacts. • St Mary's church should have been included in the historic assessment. • No formal assessment of the impacts of crossing Aldeburgh Road on Aldringham Court (Grade II listed building), and its wooded setting (at present 'protected' by an Area Tree Preservation Order). • the Applicant declined to carry out trial-trenching before DCO decision. • Cable route is likely to contain important archaeology. • All archaeology should be assessed, logged and secured during trenching. 			<p>various access provisions, field-walking will not be undertaken.</p> <p>The results of the settings assessment are provided in Appendices 24.3 and 24.7 and Chapter 24 Onshore Archaeology and Cultural Heritage where relevant (see sections 24.4, 24.5 and 24.6).</p> <p>Existing survey and assessment results are included in Appendices 24.3, 24.4 and 24.7 and inform Chapter 24 Onshore Archaeology and Cultural Heritage (see sections 24.5 and 24.6). Reference to further forthcoming investigatory works is included in sections 24.3.3 and 24.4.2 of Chapter 24 Onshore Archaeology and Cultural Heritage, with the agreed scope of works outlined in the Outline Written Scheme of Investigation (Document Reference: 8.5) submitted with this DCO application. Although such investigatory works will not be completed in time for their results to inform and be incorporated within Chapter 24 Onshore Archaeology and Cultural Heritage, it has been agreed with the HSG that the results works will at the earliest opportunity, inform the post consent mitigation strategy in relation to the archaeological and cultural heritage resource.</p> <p>The impact assessment is provided in sections 24.6 and 24.7 of Chapter 24 Onshore Archaeology and Cultural Heritage of the ES. A screening exercise has been undertaken which addresses the impact of the offshore infrastructure on the significance of coastal heritage</p>

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	<ul style="list-style-type: none"> Church Walls Cottages (adjacent to the Church and Listed Grade II) has been omitted by the Applicant in its assessment. Also omitted is Friston Mill (Grade II*) which is a prominent feature in the landscape and whose setting will be compromised by the building of the substations. Contrary to advice in the Scoping Report that trial-trenching for archaeology should be carried out prior to a DCO application being made, the Applicant have declined to do this until after consent is given. Concerned that a full assessment in relation to archaeology and heritage assets that could be affected by this project has not occurred at this stage. The development proposal should be considered against its current setting which comprises an historic rural landscape. The assessment failed to consider the impact on Grade II* Friston Mill. Selecting the preferred site in advance of the detailed assessment calls into question the importance the Applicant has attributed to the development proposal's impact on heritage assets and more generally, as well as the Applicant's commitment to historical conservation. the Applicant has failed to give proper consideration to the impact of the proposed development 'on the significance or on the ability to appreciate the assets' as required by Stage 3 of Historic England's Guidance (Assessing of Heritage Assets, 2017). Specifically, key vantage 			<p>assets (see Appendix 24.8 Assessment of Offshore Infrastructure on the Significance of Coastal Heritage Assets: A Screening Exercise of the ES), the results of which inform Chapter 24 Onshore Archaeology and Cultural Heritage where relevant (see sections 24.4, 24.5 and 24.6).</p> <p>The setting assessment has been progressed since the submission of the PEIR to address Steps 1-5 of Historic England's guidance. The results of the settings assessment are provided in Appendix 24.7 Assessment of the Impact of Onshore Infrastructure in the Setting of Heritage Assets and inform Chapter 24 Onshore Archaeology and Cultural Heritage where relevant (see sections 24.4, 24.5 and 24.6). The impact of offshore infrastructure on the significance of coastal heritage assets has been addressed as part of a screening exercise (see the Outline Written Scheme of Investigation (Document Reference: 8.5) submitted with this DCO application).</p> <p>As above, the results of the settings assessment are provided in Appendices 24.7 Assessment of the Impact of Onshore Infrastructure in the Setting of Heritage Assets and inform Chapter 24 Onshore Archaeology and Cultural Heritage where relevant (see sections 24.4, 24.5 and 24.6).</p> <p>The woodland area to the south of Aldringham Court (Raidsend), a Grade II Listed Building, is considered within Appendix 24.7 Assessment of the Impact of</p>

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	<p>points from Grove Road across the landscape towards Little Moor Farm and High House Farm will suffer more than substantial harm and are worthy of preservation.</p> <ul style="list-style-type: none"> The cable route will require considerable woodland tree felling, estimated to be in the region of 0.9 hectares in total. Such felling would fundamentally alter the setting of this heritage asset from its original design, with very little scope for effective mitigation. The indicative landscape mitigation plan provided by the Applicant shows the constrained nature of Aldringham Court and suggests that the proposed screening will itself have an unacceptable impact of the setting on Aldringham Court. The scale of the proposed planting is itself problematic and does not sit comfortably within the landscape resulting in an unacceptable impact. To date, the archaeological assessment has been desk-based and is therefore insufficient to arrive at the Applicant's conclusion that the cumulative impacts of the development are not archaeologically significant. At several points along the proposed cable route there is a high potential for unknown ground remains, including an area where military remains are recorded, as well as the potential for human remains at the medieval church at Friston. Request further information regarding Archaeological surveys and results. 			<p>Onshore Infrastructure in the Setting of Heritage Assets. The onshore development area has been refined to maintain a woodland buffer between Ridsend and the onshore development area; embedded mitigation reduces the onshore cable width to 16.1m at this location, in order to reduce woodland loss; and replanting is to be considered as a feasible option.</p> <p>Comment relating to prehistoric funerary monuments has been noted.</p> <p>The acquisition and archaeological assessment of geophysical survey data continued following the submission of the PEIR, the results of which are detailed in Appendix 24.4 Geophysical Survey Report of the ES. Further geophysical survey work is anticipated in areas where access was not previously possible, the results of which will be available for review. The results of these survey works will ultimately serve to inform and contribute to the development of post consent mitigation strategies in relation to the archaeological and cultural heritage resource.</p>

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	<ul style="list-style-type: none"> Request further information on the impact of on heritage assets including assessment of coastal heritage areas. No settings assessment for heritage assets on the coastline that could be impacted by the offshore elements of the proposal. Without full assessment (Step 3 of Historic England's Guidance) of the impacts there is a limit to the comments that can be provided on the assessment. Impacts during operation are more harmful than construction/decommissioning and are very long term or permanent. The substation site, associated construction and infrastructure areas should be subject to trial trenching and metal detecting before consent is granted. Prehistoric funerary monuments defined along the cable route, especially forming part of the cemetery associated with upstanding Scheduled monuments on Aldringham Green and Aldringham Common have the potential to be considered as nationally significant. Early assessment of the Hundred River valley is advised due to the potential for complex deposits, including paleoenvironmental evidence and waterlogged archaeological deposits. A systematic earthwork survey is required across the landing area including where military remains and other earthwork features have been identified 			

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	<p>in the Desk Based Assessment, this survey should be undertaken as soon as possible.</p> <ul style="list-style-type: none"> The landfall site should be included in the pre-DCO trial trenched evaluation. The Aldringham crossing point and adjacent land parcels should be included in the pre-DCO trial trenched evaluation. The section of the route north of Friston which leads to the substation site should be included in the pre-DCO trail trenched evaluation. Key land parcels are not included in the geophysical surveys which include high archaeological potential areas. These areas should be surveyed prior to DCO submission. Leaving all evaluation until post consent could lead to delays in project timetables if extensive areas requiring archaeological mitigation are defined. There is sufficient time for a trial trenched evaluation to be undertaken during DCO, and for this information to be sufficient for examination. 			
	<p>Concern over Impacts on Listed Buildings</p> <ul style="list-style-type: none"> Concern over proximity to listed buildings (350m). Buffer zones should be increased from 250m to 500m. Close to Friston church (St Mary's) Grade II* listed building. Impact on the setting of listed buildings. 	<p>Local Community Members; Church of St Mary the Virgin, Friston; Suffolk Preservation Society; Friston</p>	112	<p>Direct and indirect impacts on designated and non-designated buildings and potential impacts to archaeological remains have been assessed as part of the heritage assessment presented in Chapter 24 Onshore Archaeology and Cultural Heritage of the ES.</p>

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	<ul style="list-style-type: none"> At least four listed buildings, including the village church, within 350m of the substations. Tallest post mill in Suffolk. The removal of a section of woodland, which forms part of the setting of Aldringham Court, a significant and important Grade II property. The loss of part of the original garden would fundamentally alter this setting as it was part of the architect's original design, resulting in harm to the significance of the listed building. There is very little scope to mitigate this harm. Grade II listed farmhouses There are 5 Listed Buildings within the study area of the substation site. These are the Parish Church of St Mary (Grade II*), High House Farm, Little Moor Farm, Woodside Farm and Friston House (all Grade II). 	Parish Council / SASES; Aldringham-cum-Thorpe Parish Council; SCC; SCDC (now East Suffolk Council)		<p>Post-consent survey approach is outlined in Table 24.3, section 24.3.3.1 of Chapter 24 Onshore Archaeology and Cultural Heritage of the ES.</p> <p>Details of the existing environment are provided in the ADBA (Appendix 24.3 Onshore Archaeology and Cultural Heritage Desk Based Assessment), the heritage settings assessment (Appendix 24.7 Assessment of the Impact of Onshore Infrastructure in the Setting of Heritage Assets) and where relevant summarised in section 24.5 of Chapter 24 Onshore Archaeology and Cultural Heritage of the ES.</p> <p>Comment relating to impacts during construction/decommissioning have been noted.</p>
	<p>Concern over impacts on heritage assets</p> <ul style="list-style-type: none"> Landscape maintains historic character. Grove Wood substation site is a medieval landscape which retains much of its historic character. St Mary's church has several historic artefacts and the churchyard is the resting place of the three former Lord Mayors of London. Landfall at Thorpeness is an area with substantial heritage of World War I and II remains. Potential for below ground remains at B1122, a systematic earthwork assessment is necessary. 	Local Community Members; Church of St Mary the Virgin, Friston; Suffolk Preservation Society, Friston Parish Council / SASES; SCC; SCDC (now East Suffolk Council)	26	

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	<ul style="list-style-type: none"> Impacts on historic sites and houses. It is highly likely that further considerable archaeological features are likely to exist within the sites identified for the three substations The building of an 8M access road compromises the rural setting of historic Friston Moor. The 9km cable route is rich in archaeology, particularly in the region of the Hundred River. No analysis has been carried out by the Applicant on the harm to the settings of these buildings nor has any mitigation been considered. Concern over changes to setting of historic buildings and their farmland. Concern over changes to setting of village. 			
	<p>Historical Footpath</p> <ul style="list-style-type: none"> Grove Wood site footpath formed part of a medieval pilgrims way linking Orford, Snape & Friston, to Leiston and Dunwich both of which had large Abbeys. The Sandlings is an ancient right of way from Ipswich to Southwold. World War 2 remains found in fields and nearby paths. FP6 ancient path will be lost by building substations. There is an ancient track (FP6) which connects the village to Friston Moor and follows historic field boundaries. This PRoW will be extinguished by the building of the substations. 	<p>Local Community Members; Friston Parish Council / SASES</p>	12	<p>Details of the existing environment are provided in the Onshore Archaeology and Cultural Heritage Desk Based Assessment (ADBA) (Appendix 24.3 of the ES), the heritage settings assessment (Appendix 24.7 Assessment of the Impact of Onshore Infrastructure in the Setting of Heritage Assets of the ES) and where relevant summarised in section 24.5 of Chapter 24 Onshore Archaeology and Cultural Heritage of the ES.</p> <p>The PRoW Strategy will be agreed with the Local Planning Authority post-consent. The OPRoWS (Document Reference: 8.4) submitted with the DCO application includes the principles for management of PRoWs during construction and proposed alternative routes if required.</p>

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	<ul style="list-style-type: none"> Concern over changes to Fitches Lane 			
	<p>Cumulative Impacts</p> <ul style="list-style-type: none"> Cumulatively there will be landscape scale impacts to below ground archaeological remains as a result of large projects in the area. 	SCC; SCDC (now East Suffolk Council)	1	Cumulative impacts are addressed in section 24.7 of Chapter 24 Onshore Archaeology and Cultural Heritage of the ES and in Appendix 24.2 Archaeology and Cultural Heritage Cumulative Impact Assessment with the Proposed East Anglia ONE North Project.
	<p>Suggested Mitigation Measures</p> <ul style="list-style-type: none"> Screening should be appropriate and beneficial to the existing historic landscape. Mitigation planting at Aldringham Court should form part of the Landscape Management Plan. “Outreach” (public engagement) should be included as proposed mitigation. Archaeology should be factored into traffic management, water management, dust and spoil management and ecological works plans, as proposals have the potential to have archaeological impacts. To avoid conflicts between different priorities and proposed mitigations for other aspects, a joined-up, holistic approach is needed. Archaeological matters, as well as being in the Written Scheme of Investigations, should be considered in other management plans. Retention of a section of woodland to the south of Aldringham Court could provide limited mitigation. 	Archaeology and Cultural Heritage Expert Topic Group (Historic England, Suffolk Coastal and Waveney District Council (now East Suffolk Council), SCC, Headland Archaeology and SPS); Suffolk Coast and Heath AONB Partnership; SCC; SCDC (now East Suffolk Council); Local	10	<p>A screening exercise has been undertaken, in line with recommendations made by the HSG, which addresses the impact of the offshore infrastructure on the significance of coastal heritage assets (see Appendix 24.8 Assessment of Offshore Infrastructure on the Significance of Coastal Heritage Assets: A Screening Exercise in Chapter 24 Onshore Archaeology and Cultural Heritage of the ES), the results of which inform Chapter 24 where relevant (see sections 24.4, 24.5 and 24.6 Archaeology and Cultural Heritage of the ES).</p> <p>Suggested Mitigation Measures specific to the issues raised are covered in Section 24.3.3 Embedded Mitigation in Chapter 24 Onshore Archaeology and Cultural Heritage of the ES. Where further mitigation measures have been deemed appropriate these have been set out throughout Chapter 24 Onshore Archaeology and Cultural Heritage of the ES. They have also been summarised in Section 24.10 in Chapter 24 Onshore Archaeology and Cultural Heritage of the ES.</p>

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	<ul style="list-style-type: none"> The Applicant has a responsibility to offer and fund a survey of every individual building within the vicinity for current state to have a baseline to measure against should damages occur, then should put in place a guarantee of recompense for any and all damages. 	Community Members		<p>Further opportunities for the display, promotion and management of (and events around) archaeological discoveries will be discussed between the Applicant, their advisers and the Expert Topic Group as the proposed East Anglia TWO project progresses.</p> <p>The settings assessment has been progressed since the submission of the PEIR (see Appendices 24.7 Onshore Archaeology and Cultural Heritage of the ES) and takes into consideration the recommendations made by the Expert Topic Group in the January 2019 Expert Topic Group meeting. The results of the settings assessment inform Chapter 24 Onshore Archaeology and Cultural Heritage where relevant (see sections 24.4, 24.5 and 24.6).</p> <p>The results of the settings assessment are provided in Appendix 24.7 Assessment of the Impact of Onshore Infrastructure in the Setting of Heritage Assets and inform Chapter 24 Onshore Archaeology and Cultural Heritage of the ES where relevant (see sections 24.4, 24.5 and 24.6).</p> <p>The woodland area to the south of Aldringham Court (Raidsend), a Grade II Listed Building, is considered within Appendix 24.7 Assessment of the Impact of Onshore Infrastructure in the Setting of Heritage Assets. The onshore development area has been refined to maintain a woodland buffer between Raidsend and the onshore development area; embedded mitigation reduces the onshore cable width to 16.1m at this</p>

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				<p>location, in order to reduce woodland loss; and replanting is to be considered as a feasible option.</p> <p>Cumulative impacts are addressed in section 24.7 of Chapter 24 Onshore Archaeology and Cultural Heritage of the ES and Appendix 24.2 Archaeology and Cultural Heritage Cumulative Impact Assessment with the Proposed East Anglia ONE North Project.</p> <p>Comment relating to Expert Topic Group agreeing to revised pre-consent investigation has been noted.</p> <p>Comment relating to HE requesting contingency has been noted.</p>
Noise and Vibration	<p>Assessment Methodology</p> <ul style="list-style-type: none"> Should be consideration of the sound produced by the overhead lines and the impact of moving the lines towards houses. Concern over receptor CRR9 recorded as a higher background baseline noise level as some readings were taken from Aldeburgh Road, Aldringham and not at CRR9. Concern over assessment methods to assess construction noise and vibration. There is usually a 500m standard distance to residents rather than 250m. (This was used for Galloper Substation and a 600m radius was used at Bramford). 	Noise and Vibration Expert Topic Group 2 (East Suffolk Council and SCDC (now East Suffolk Council)); Local Community Members; Friston Parish Council / SASES; SCC; SCDC (now East Suffolk Council)	44	<p>The approach to the assessment methodology, monitoring/measurement locations and what to include in the assessment for noise and vibration have been discussed in depth and agreed with the Noise and Vibration Expert Topic Group.</p> <p>Further to the above, the assessment methodology for Noise and Vibration follows guidance contained in BS 5228:2009+A1:2014 (Code of Practice for Noise and Vibration Control on Construction and Open Sites) for construction and BS 4142:2014 (Rating and Assessing Industrial and Commercial Sound) for operation.</p> <p>Details of the construction plant and equipment to be used, and considered in this assessment, can be found in section 25.4.3.1.2 of Chapter 25 Noise and Vibration</p>

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	<ul style="list-style-type: none"> 65 dBA is not an acceptable limit for construction noise. 55 and 65 dBA at the weekend is not negligible or minor. No mention of “track patter” associated with bulldozers or of vehicle reversing alarms. No predicted noise contours which would aid understanding. Short/long term impacts of noise have not been assessed adequately. Use of houses rather than garden boundary’s or local footpath as the nearest receptor to the development. Change for not exceed the current average sound readings at nearby receptors to a tolerance of 35dB is inappropriate. Does not consider the impacts of additional planned noise from Nautilus and Eurolink. Unclear whether the noise from all three substations has been aggregated. Lacking detail. Ignored data and used inappropriate models to produce the PEIR that gives an incorrect overall impression of negligible, minor or no impact. Site mitigation measures as proposed in Table 25.4 are minimal, and of questionable efficacy. Concern over chosen noise monitoring sites to assess noise at night. No consideration has been given to the effects of noise and vibration on the fabric or usage of the Church, either during construction or operation. 			<p>and details of the modelled operational equipment at the onshore substation can be found in section 25.6.2.1 of Chapter 25 Noise and Vibration of the ES.</p> <p>Impacts of planned noise from Nautilus and Eurolink has been noted, this has been taken account of in Section 5.7 within Chapter 5 Environmental Impact Assessment Methodology of the ES.</p> <p>Appropriate operational noise limits are addressed within section 25.3.3 of Chapter 25 Noise and Vibration of the ES. Operational noise from the onshore substation will be no greater than 34dB above the representative background L_{Aeq} (5 minutes) during the day time and night at the NSRs in accordance with BS4142:2014+A1:2019.</p> <p>The National Grid infrastructure does not produce operational noise that requires modelling in this assessment. The equipment required at the National Grid substation for operation does not include components which would contribute any significant noise contributions in the area. Further details provided below in section 25.3.2.1 of Chapter 25 Noise and Vibration of the ES.</p>

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	<ul style="list-style-type: none"> There is no evidence presented that the Applicant will abide with best practice with regards to suppressing strong tonal qualities Within the PEIR there is no evidence that the Applicant understands its obligations to identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason. A dB(A) Leq approach allows periods of increased loudness to be 'offset' by quieter period. The adoption of a 35 dB LA eq to be applied at two substations simultaneously represents a serious attempt by the Applicant to gain acceptance of increased noise levels by "parameter creep" As with the onshore construction corridor, the Applicant have failed to publish maps showing predicted noise contours, which is a norm for this type of project. the Applicant should have published a substation layout, populated by all noise emitters which would have allowed their predictions of "negligible" impact significance to be verified independently. Evident that several of the detailed noise level recordings for SSR receptors are erroneous. Chapter 25 fails to address adequately, the concerns expressed by residents at all PIDs regarding the likely impact of noise on their lives from a construction programme which may last 7 or more years. 			

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	<ul style="list-style-type: none"> Noise issues are over generalised, commit absolutely nothing in any factual way and not discussed in any detail. Mitigation and technical methods need to be clarified, assessed and discussed. Request for further information regarding noise sources on site including National Grid infrastructure. Concerns that operational noise assessment has not followed the appropriate methodology and guidance to protect local residents. Tables 25.20 within Chapters 25 of the Phase 4 consultation is misleading as it suggests the background noise level (LA90) equates to 35 dB (expressed as LAeq 15 min) and then utilises this ambient noise level as a 'rating level' for both day and night time intervals at noise sensitive receptors (NSRs). This does not accord with noise assessment criteria previously agreed, this being BS 4142:2014. The methodology for assessing operational plant noise within the consultation again utilises 'SoundPLAN', a noise modelling software incorporating; intervening ground cover, topography and proposed building elevation layout to predict the spread of noise from fixed plant and its impact at the nearest noise sensitive receptors. It is understood that the model represents both EA1N and EA2 substations in combination and that the National Grid infrastructure substation does not add to this 			

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	<p>prediction. This will need further modification should it be determined that the combination of the three substations will be of greater magnitude or impose tonal noise which is currently not believed to be significant. At present it has not been established whether the National Grid substation will be constructed as an “Air Insulated Switchgear Substation (AIS)” or as a “Gas Insulated Switchgear Substation (GIS)”. More components are located within the building of a GIS substation and presumably this will affect the modelling and operational noise characteristics of the site. Full details of both options will be required should this decision be left to the date of ES or beyond</p> <ul style="list-style-type: none"> It is reported that diesel generators and circuit breakers will be present on site in the event of a systems failure, whilst these will only be activated for short time periods for maintenance purposes and in an event of an emergency, further details of the likely noise output of each should be provided within the ES for each project so that impact from these can be assessed at nearby receptors. 			
	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> Concern over mitigation methods to mitigate high amplitude low frequency noise propagation. 	Friston Parish Council / SASES	1	Embedded mitigation measures are covered in section 25.3.3 of Chapter 25 Noise and Vibration of the ES. A Construction Phase Noise and Vibration Management Plan will be submitted to, and approved by, the relevant regulators and will form part of the Code of Construction Practice (CoCP).

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				During operation, noise emissions from the onshore substation will be governed by a noise restriction of no greater than 34dB above the representative background L_{Aeq} (5 minutes) during the day time and night time at the NSRs. Industry standard noise mitigation schemes (including consideration of design) around the substation will ensure that noise emissions from the onshore substation does not exceed the levels stated in the noise requirement.
	<p>Noise Impacts</p> <ul style="list-style-type: none"> Concerns over construction noise 35dba at substation is inappropriate for rural background, especially during the night when levels rarely exceed 30 dB (A). Noise impacts due to traffic in residential areas. Impacting tourism, deterring visitors. Concern over beeping of lorries and vehicles. Traffic noise impact in Aldeburgh. Noise impacts on bridleways and horses. Would exceed the background noise of 35dB. Impacts on houses on Gipsy Lane or Fitches Lane. Noise impacts on 24 hour working during HD drilling. Noise generated from diesel engine powered pumps on 24 hour basis at River Hundred to avoid flooding. 7am to 7pm working say will affect sleep patterns. 	<p>Save our Sandlings; SCDC (now East Suffolk Council) Meeting; Local Community Members; Church of St Mary the Virgin, Friston; Friston Parish Council / SASES; SCC; SCDC (now East Suffolk Council); Suffolk Coast and Heath AONB Partnership</p>	189	<p>Noise Assessments have been carried out and form part of Chapter 25 Noise and Vibration of the ES. Construction impacts will be temporary in nature and include noise and vibration. The results show that predicted daytime noise levels from construction works during the proposed East Anglia TWO project at the substation and cable route locations would be of no impact magnitude on receptors of medium sensitivity and therefore impacts would be of negligible significance.</p> <p>Appropriate operational noise limits are addressed within section 25.3.3 of Chapter 25 Noise and Vibration of the ES. Operational noise from the onshore substation will be no greater than 34dB above the representative background L_{Aeq} (5 minutes) during the day time and night at the NSRs in accordance with BS4142:2014+A1:2019.</p> <p>The operational noise emissions from the onshore substation will be governed by a noise restriction</p>

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	<ul style="list-style-type: none"> Mitigation measures are minimal and of questionable efficacy. Current background noise levels are around 15-20dBA. Damp and wet spells will make noise significantly louder and of a higher frequency. Noise impact on holiday cottages near construction works. Not possible to mitigate lorry noise Breach W.H.O. noise levels Affecting livestock and animals. Concern over building noise which will be louder than 35dB for several years. Increased noise disruption if developments were carried out sequentially. A constant low level hum, such as that originating from HVAC transformers and fan cooling arrangements is highly disturbing at night, particularly for light sleepers. Temperature inversion increasing the noise footprint for residents in Friston and surrounding areas. Transformer normally produce a low hum (100hz) which will be noticed by some people. Concerns that operation will lead to adverse impacts on health, quality of life of the local community or to the existing tranquil environment. Reduce noise impacts to minimise impacts on AONB characteristics. Noise of waiting HGVs. 			secured through the requirements of the draft DCO which states that operational noise from the onshore substation will be no greater than 34dB above the representative background L_{Aeq} (5 minutes) during the day time and night time at the NSRs. A Noise and Vibration Management Scheme will be submitted to and approved by the relevant planning authority and form part of the OCoCP (Document Reference: 8.1).

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	Vibration Impacts <ul style="list-style-type: none"> Impacts of construction vibration such as deep piling associated with building of substations). Vibration associated with traffic. Large vehicles driving over 'cats eyes' on A1094 causing vibrations into resident properties Impact of horizontal drilling next to Thorpeness pavilion on users. HGV vibration impacts on houses lining transport routes. Potential vibration issues to road side receptors from passing heavy goods vehicles where potholes are present and further mitigation may be required in these circumstances. 	Save our Sandlings; Local Community Member; Church of St Mary the Virgin, Friston; SCC; SCDC (now East Suffolk Council)	21	<p>A Noise and Vibration Management Scheme will be submitted to and approved by the relevant planning authority and form part of the OCoCP (Document Reference: 8.1) which will set out how these potential impacts are managed.</p> <p>Embedded mitigation measures and best practice will also be included. Embedded mitigation measures have been set out in Table 25.3 in Chapter 25 Noise and Vibration of the ES.</p> <p>Noted. The potential for vibration impacts is considered in section 25.6.1.3 of Chapter 25 Noise and Vibration. The assessment considers that impacts are unlikely and would be of minor adverse significance therefore no additional mitigation is required at this stage.</p>
	Cumulative Impact <ul style="list-style-type: none"> If the same cable route is used for other energy projects there will be adverse noise and vibration impacts on local residents at Aldeburgh Road over many years. 	Local Community Members.	1	Cumulative impacts are summarised in section 25.7 of Chapter 25 Noise and Vibration of the ES.
	Suggested Mitigation Measures <ul style="list-style-type: none"> Transformers and reactors for conditioning the supply from the wind turbines should be housed in acoustic buildings to mitigate noise. Bunding to reduce noise pollution. Haul road into Friston must have sound barriers. 	Local Community Members; Friston Parish Council / SASES; Aldringham-	24	Best practice noise mitigation measures, to be implemented and controlled through the Noise and Vibration Management Scheme. The scheme will look at (for example) the use of screens and noise barriers / acoustic screens. In addition, a Construction Phase Noise and Vibration Management Plan will also be secured by the DCO during application. More

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	<ul style="list-style-type: none"> Install temporary acoustic and visual screening during construction of those sections of the Cable Corridor closer than 250 metres from residential homes or their gardens. Remove 'cats eyes' on Farnham Road to minimise vibrations from large vehicles driving over them. Generators and pumps should be located within industry standard soundproof containers. Mitigation of high amplitude low frequency noise propagation is exceedingly difficult. The only practical solution is sound suppression at source or increased separation between emitter and receptor. Transformer should be located further away from Friston to reduce noise. The noise and vibration generated at the Landfall construction site, activities along the entire length of the cable route and construction of the substations, together with the additional HGV and other traffic that will be required to support this development will have a massive impact on this rural community. There is no indication of how these significant impacts will be satisfactorily mitigated. Dense tree planting can slow down wind speed and reduce the noise carried towards dwellings. Further mitigation for disturbance from site infrastructure noise considered necessary. 	cum-Thorpe Parish Council; SCC; SCDC (now East Suffolk Council)		<p>information can be found within Chapter 25 Noise and Vibration of the ES.</p> <p>Appropriate operational noise limits are addressed within section 25.3.3 of Chapter 25 Noise and Vibration of the ES. Operational noise from the onshore substation will be no greater than 34dB above the representative background L_{Aeq} (5 minutes) during the day time and night at the NSRs in accordance with BS4142:2014+A1:2019.</p> <p>Proposed East Anglia TWO project refinements (as present in Chapter 4 Site Selection and Assessment of Alternatives) following Section 42 consultation mean there is no longer the requirement for construction HGVs to access the onshore development area via Thorpeness Road, therefore there is no longer the requirement for a convoy system or waiting area. This has been removed from the proposed East Anglia TWO project description and this impact assessment.</p> <p>Embedded mitigation is presented in section 25.3.3 of Chapter 25 Noise and Vibration. Any additional mitigation required is considered in section 25.6.1 of Chapter 25 Noise and Vibration.</p> <p>Working hours have been amended following Section 42 consultation. Working hours will typically be 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays (with no work on Sunday or Bank Holidays).</p>

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	<ul style="list-style-type: none"> Further mitigation required to ensure receptors SSR2 and SSR5 operational noise levels that at night are within agreed standards. Request for more information on noise mitigation. Careful consideration of the design of construction compounds can help reduce the impact and disturbance to nearby residential properties. Working hours should be restricted to finish at 13:00 on Saturdays. Standard noise and vibration mitigation measures are to be implemented by utilising a Code of Construction Practice Management Scheme together with a Traffic Management Plan. 			An OCoCP (Document Reference: 8.1), secured under a requirement of the draft DCO, and Outline Construction Traffic Management Plan (OCTMP) (Document Reference: 8.9), secured under a requirement of the draft DCO, have been submitted with this DCO application.
Traffic and Transport	<p>PEIR Baseline</p> <ul style="list-style-type: none"> ATC believes that the Applicant has not provided sufficient details of the level or type of traffic the Aldeburgh route would be expected to accommodate. It is also not clear for what period and at what volume such traffic should be expected. Without precise figures, the realistic projected impact on Aldeburgh cannot be determined. 	Aldeburgh Town Council	1	The Applicant has committed to removing the landfall access via Thorpeness Road (B1353). This has significantly reduced the numbers of HGVs that would pass through Aldeburgh and on to Thorpeness from that presented within the PEIR. The OCTMP (Document Reference: 8.9) provided with the DCO application, sets out measures to ensure that any HGVs that are required to pass through Aldeburgh (a peak of 10 two-way movements per day, 5 in and 5 out) would be of an appropriate size, or where the load cannot be carried by a smaller vehicle, the HGV would be escorted by a pilot vehicle. This has been reduced from 55 vehicles as assessed in the PEIR.

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	<p>PEIR Surveys</p> <ul style="list-style-type: none"> The Councils note the Suffolk Automatic Traffic Count data shows significant difference in HGVs numbers in Tables 26.11 compared to the Applicant Automatic Traffic Count and Suffolk County Council Manual Classified Turning Counts; this is due to differing classification of HGVs. In Tables 26.12 Link Based Sensitive Receptors the Councils consider there are a small number of errors or omissions: <ul style="list-style-type: none"> Link 3: For clarity include Stratford St Andrew (high sensitivity) Link 4c: For A12 read B1122 Link 6b: Church Common not a village but part of Snape <p>The above issues should be addressed within the DCO submissions.</p>	SCC/SCDC (now East Suffolk Council)	1	<p>Section 26.5.2 of Chapter 26 Traffic and Transport of the ES has been updated to note the difference in methodology.</p> <p>The comments on link descriptions have been incorporated within section 26.5.3 of Chapter 26 Traffic and Transport of the ES.</p>
	<p>PEIR Methodology</p> <ul style="list-style-type: none"> Changes to non-motorised user (NMU) routes have the potential to impact on usage, create displacement to other routes and potentially lead to increased road traffic collisions. The PEIR does not provide any data for NMU within the traffic assessments. Without such data it is unclear how the impact on NMU (pedestrians and cyclists) from the presence of large numbers of HGVs can be assessed. Similarly, no data has been presented on the usage of each PRoW affected by the scheme, nor does it identify the 	Public Health England; SCC; SCDC (now East Suffolk Council)	5	<p>Section 26.5.3 of Chapter 26 Traffic and Transport of the ES provides a detailed review of the sensitivity of each of the highway links within the onshore highway study area in the context of all user groups and modes of travel.</p> <p>Traffic impacts are assessed in Chapter 26 Traffic and Transport of the ES. The PRoW assessment and Outline PRoW strategy are also discussed in Chapter 30 Tourism Recreation and Socio-economics of the ES.</p>

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	<p>specific impact and mitigation to be put in place for each PRoW, for example through diversions. Diverted routes must be designed, installed and maintained to allow for access to the community. A scheme of this scale and nature can also provide mitigation opportunities to enhance the existing infrastructure that supports active travel, physical activity and access to green/blue space. Public Health England expect the proposal to contribute to improved provision of infrastructure that supports this type of activity.</p> <ul style="list-style-type: none"> The traffic assessment should include data on non-motorised users. The overall risk to NMU and impact on active travel should be considered on a case by case basis, taking into account, the number and type of users and the effect that the temporary traffic management system or increased vehicle activity will have on their journey and safety. Any traffic counts and assessment should also, as far as reasonably practicable, identify informal routes used by NMU or potential routes used due to displacement. The ES should identify the temporary traffic management system design principles or standards that will be maintained with specific reference to NMU. This may be incorporated within the Code of Construction Practice. The Councils have some concerns in relation to the assessment methods and threshold selection utilised within the Transport Assessments. A GEART methodology has been adopted during 			<p>Potential impacts upon PRoW are considered within Chapter 30 Tourism Recreation and Socio Economics of the ES. These are detailed further with the Outline Public Rights of Way Strategy (OPROWS), secured under the requirements of the draft DCO, and submitted with this DCO application.</p> <p>An OCTMP (Document Reference: 8.9), secured under the requirements of the draft DCO, has been submitted with this DCO application. This sets out the principles for temporary traffic management for all user types.</p> <p>The Applicant has engaged with SCC regarding this comment and understand that the comment relates to the assessment of driver delay impacts. The assessment of driver delay within section 26.6.1.11 of Chapter 26 Traffic and Transport of the ES has been prepared in accordance with WEBTAG.</p> <p>The adopted car-share ratio has been discussed with SCC and it has been agreed that the ratio is acceptable if this forms a measurable and enforceable target within the Outline Travel Plan (OTP) (Document Reference: 8.11). The OTP (Document Reference: 8.11), secured under the requirements of the draft DCO, has been submitted with this DCO application and includes this ratio as a target and provides details of measures, monitoring and reporting practices to ensure this target can be complied with. With regards to worker origins, these have been informed by a socio economics study</p>

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	<p>the preparation of the Transport Assessments to identify locations where impacts would occur but the Councils would not expect this method to be used as part of the DCO submissions and would suggest guidance such as WEB Transport Appraisal Guidance (WEBTAG). The Councils are also concerned that the severance and pedestrian/cycle amenity assessments fail to consider the facilities that are in place at the specific locations.</p> <ul style="list-style-type: none"> In relation to the traffic data the employee car share ratio of 1.5 put forward by the Applicant is not accepted by the Councils. the Applicant also make assumptions based on worker origins but the effects of Sizewell C do not appear to have been considered. It is also assumed the construction workforce shift patterns will overlap with the PM peak hour but evidence from the EA1 project should be provided to identify whether the shift patterns overlap a g with the AM peak hour. If this is shown to occur further assessment would be necessary. Further clarification is also required in relation to the peak daily movements identified by the Applicant to understand whether this is an average, and if so how much variance from the average exists and what the absolute peak is. Finally, the Councils wish for the Applicant to identify what methods would be utilised to control and monitor the traffic movements to ensure they compliance with the data provided. Further information in relation to the Councils concerns 			<p>and provide a proportionate approach to quantifying potential employee distribution. The assessment of driver delay (presented within section 26.6.1.11 of Chapter 26 Traffic and Transport of the ES) has been updated to consider the potential overlap of the proposed East Anglia TWO project's traffic with both the network am and pm peak hours.</p> <p>With regards to peak HGV flows these comments have been discussed with SCC and it has been agreed that the numbers presented are representative of actual peak demand. In addition, these peak numbers have been adopted as a target within the OCTMP (Document Reference: 8.9). The OCTMP (Document Reference: 8.9), secured under the requirements of the draft DCO, has been submitted with this DCO application and includes details of the measures, monitoring and enforcement measures to ensure these peak numbers are not exceeded.</p> <p>Appendix 26.18 Proposed Preliminary Access Concepts provides designs including swept path analysis for each of the accesses and crossings. A Stage 1 Road Safety Audit and designer's response are provided within the Outline Access Management Plan (OAMP) (Document Reference: 8.10), secured under the requirements of the draft DCO, which has been submitted with this DCO application. Each of the accesses presented within Appendix 26.18 of the ES have been designed in accordance with the DMRB. It has been agreed with</p>

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	<p>regarding assessment methodology and threshold selection, trip distribution and traffic data utilised in the transport and traffic assessments has been detailed in Appendix E.</p> <ul style="list-style-type: none"> The Councils have expressed concerns in relation to the impact of the positioning of access 7 on the setting of Aldringham Court and protected woodland which has been detailed previously under the heading 'Aldringham Court'. For all of the proposed access arrangements, the Councils will require detailed design, swept path assessment and a road safety audit. The use of Design Manual for Roads and Bridges (DMRB) rather than Manual for Streets design guidance is considered by the Councils to be appropriate for the proposed access locations. 			SCC that the Manual for Streets standard is appropriate for the crossing of Grove Road.
	<p>PEIR Traffic Impacts</p> <ul style="list-style-type: none"> It is noted from Figure 26.3 that the traffic data through Sternfield is inferred from data collected to the east of the village (under the line of the transmission cables). Redhouse Farm, which is between the survey site and Sternfield, has a 48,000 duck rearing unit which attracts a substantial number of HGVs, as well as being the base for arable agricultural activity, light industrial units, and an events barn – in all a significant traffic generator. Most of the traffic to and from the farm passes through Sternfield, as can be evidenced from the increased damage to the 	Benhall and Sternfield Parish Council; SCC; SCDC (now East Suffolk Council); Snape Parish Council	23	<p>Upon completion of construction works, in the unlikely event that any of the transformers need to be replaced during the operational life of the proposed East Anglia TWO project, the Applicant would seek agreement with the relevant highway authorities regarding the timing and routing of any abnormal loads.</p> <p>Section 26.6.1.7 of Chapter 26 Traffic and Transport of the ES details that it is proposed that traffic flows via link 5 (the B1121 through Friston and Sternfield) could increase by up to 6%. Increases in total traffic flows of less than 10% are considered to be within daily</p>

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	<p>verges to the west of the access. It has been identified that the B1121 through Sternfield (link 5b) to be of high sensitivity (Figure 26.4). We fully endorse this. However, you state that on this link two HGVs cannot pass (Chapter 26, page 34). The truth is that there are places along link 5b where a car and an HGV cannot pass. For this reason, we are deeply concerned regarding the implications of additional light vehicles accessing your construction site along the B1121, particularly since you have not taken into account the additional HGVs accessing Redhouse Farm. The situation is exacerbated by the regretful habit of speeding, which is observed to be particularly prevalent at the end of the working day. It is invariably speed which prevents vehicles stopping in safe places to allow on-coming vehicles to pass.</p> <ul style="list-style-type: none"> Link 5a, Main Road Benhall, is categorised as low sensitivity (Figure 26.4). The road is of good width with a 40 mph speed limit. However, there are several side roads / accesses along the link, in particular Forge Close, the main access into Benhall Green, and Chalfont Drive. The visibility for drivers leaving these roads to access the B1121 is considerably sub-standard. In addition, there is a current housing development of 9 houses, which under the Local Plan proposals would be increased by a further 50, generating additional turning movements, as well as the Whitearch mobile home development, which 			<p>fluctuations and are therefore assumed to result in no discernible environmental impact.</p> <p>No decision has yet been made regarding a preferred base port for the offshore construction and operation of the proposed East Anglia TWO project. Such facilities would be provided or brought into operation by means of one or more planning applications or as port operations with permitted development rights. Chapter 26 Traffic and Transport of the ES therefore considers the impacts of constructing and operating the onshore infrastructure only.</p> <p>An OTP (Document Reference: 8.11) is provided with the DCO submission, secured under the requirements of the draft DCO. The OTP (Document Reference: 8.11) provides details of proposed measures to support sustainable travel.</p> <p>This comment has been discussed with SCC and it has been agreed that detailed modelling of these junctions would not be required on the proviso that HGV traffic would not turn through these junctions. Section 26.5.5 of Chapter 26 Traffic and Transport of the ES confirms that HGV would not turn off at these junctions and therefore no further assessment has been presented. This commitment is also captured within the OCTMP (Document Reference: 8.9), secured under the requirements of the draft DCO, has been submitted with this DCO application.</p>

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	<p>consists largely of permanent homes. The Benhall and Sternfield Parish Council has recently been petitioned by residents to seek a reduction in speed along Main Road, to make accesses safer. More weight has to be given to the sub-standard visibility from the site roads when assessing the sensitivity rating.</p> <ul style="list-style-type: none"> the Applicant has stated that foundation components would be manufactured onshore and delivered to site as close to fully assembled as practical (6.5.4). This also applies to the turbines and scour prevention materials, cable protection, cables and ancillary structures. Further clarity is needed in relation to this claim and whether the consequential impacts on transport have been fully assessed. The PEIRs state that it is possible that wind turbines could be fully assembled and commissioned onshore and transported to site as a single unit installation (6.5.15.2.3). It is understood that this method is being explored by the wind industry but the Applicant considers it is not possible to commit to this method as it is not technically proven at this stage. The Councils request clarity is provided by the Applicant on whether the impacts of the complete assembly of wind turbines have been included in the PEIR. The PEIRs indicate that an outline Construction Traffic Management Plan (CTMP) would be submitted as part of the DCOs and would include details of the measures to be adopted to ensure 			<p>The Applicant has committed to removing the landfall access via Thorpeness Road (B1353). This has significantly reduced the numbers of HGVs that would pass through Aldeburgh and on to Thorpeness from that presented within the PEIR. The OCTMP (Document Reference: 8.9) provided with the DCO application, sets out measures to ensure that any HGVs that are required to pass through Aldeburgh (a peak of 10 two-way movements per day, 5 in and 5 out) would be of an appropriate size, or where the load cannot be carried by a smaller vehicle, the HGV would be escorted by a pilot vehicle.</p> <p>It has been agreed with SCC as the local highway authority that an assessment of junction capacity north of Yoxford would not be required unless HGVs were to turn off the A12 at either the junction with the A144 or A145. The OCTMP (Document Reference: 8.9), submitted with this DCO application, details that HGVs would not turn off the A12 at these locations and therefore no further assessment of impacts is presented.</p> <p>Upon completion of construction works, in the unlikely event that any of the transformers need to be replaced during the operational life of the proposed East Anglia TWO project, the Applicant would seek agreement with the relevant highway authorities regarding the timing and routing of any abnormal loads.</p> <p>Section 26.4.3.1.5 of Chapter 26 Traffic and Transport of the ES identifies that the requirement for localised</p>

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	<p>that traffic demand forecasts are not exceeded, mitigation measures and Travel Plan measures, and the Councils would expect greater clarity on how the proposals will support sustainable transport including through protection of and improvements to the Public Rights of Way network.</p> <ul style="list-style-type: none"> Although details of the sources of materials are not known at this stage the Councils accept that by assessing HGV movements in terms of 100% arriving from the north or south of the A12/A1094 junction is robust with the exception of the impact of such traffic on the junctions between Saxmundham and Lowestoft (i.e. A12/A144, A12/A1095, A12/A145). An assessment has been undertaken of the delays associated with the 'the pilot vehicle strategy', this includes a very simplified assessment based on a pilot vehicle taking three minutes to travel the distance and two vehicles arriving on average every minute. This results in an estimated average queue of six vehicles. Clearly given the potential for platooning and variation in arrival patterns, the maximum queue could be far more than the average. The assessment should identify the risks of the queue being greater than that indicated and what implications that has on road safety. <p>Local Highway Authority</p>			<p>widening at this junction is required to accommodate the swept path of the AIL vehicle. A concept plan of this widening is provided within Appendix 26.4 Abnormal Indivisible Load Swept Path Analysis of the ES. It is proposed that Stage 1 Road Safety Audit would not be required as the works would be temporary. The OCTMP (Document Reference: 8.9), submitted as part of this DCO application, includes a commitment to agreeing routes and accommodation measures with SCC prior to the movement of any AIL's.</p> <p>Section 26.4.3.1.5 of Chapter 26 Traffic and Transport of the ES identifies that there is uncertainty regarding the future availability of the abnormal load offloading facilities in Lowestoft. Therefore, the abnormal load study (provided within Appendix 26.3 Abnormal Indivisible Load Access to the Proposed East Anglia TWO and Proposed East Anglia ONE North Offshore Windfarm Substation of the ES) has considered both an option from Lowestoft and from Felixstowe. The abnormal load study identifies that both routes would be negotiable. Any future movements would be subject to consultation with the relevant highway authorities prior to movement.</p> <p>There is no certainty that the Sizewell C New Nuclear Power Station proposals would come forward or that EDF Energy would be prepared to make their facility available to the Applicant.</p>

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	<ul style="list-style-type: none"> The AIL study (appendix 26.01) has identified that although abnormal loads could come from either Felixstowe or Lowestoft, Network Rail has advised that a rail bridge over the A1094 should be avoided. This will result in all AILs regardless of origin travelling via the B1122 from Yoxford and passing through Leiston along the B1069 to the junction with the A1094 where localised widening is required. From this point the vehicle would then travel along the A1094 and B1121 through Friston to access the onshore substation sites over the new access road. It is presumed but not evidenced that this will remain the route for AILs required for future maintenance or replacement. The Councils have significant concerns regarding the route from Felixstowe as it passes through Stratford St Andrew, Farnham, Yoxford, Leiston, Knodishall and Friston with issues such as footbridge on Park Hill, Leiston (height), pinch point on Haylings Road, Leiston (width) and Farnham (geometry) are well known. the Applicant should note AILs should only be routed through Friston when use of the temporary haul road is not a practical option (i.e. due to weight). The Local Highway Authority that HR100 is used for AILs associated with this project. The Councils recommend that the Applicant engage with EDF Energy regarding their proposals at Sizewell C and what potential exists for use of their proposed Beach Landing Facility (BLF). This would significantly reduce the length 			<p>The Applicant has discussed this comment with SCC and advised that the traffic numbers presented within section 26.6.1 of Chapter 26 Traffic and Transport of the ES have been derived from volumes of materials for HGVs and numbers of personnel for LCVs. The employee movements would be completed by a range of LCV types such as, cars, vans, pickups and minibuses. This matter, and the distinction between LGV and LCV vehicles, is clarified in the ES.</p> <p>Noted – Detail is provided in section 26.5.4.1 of Chapter 26 Traffic and Transport of the ES.</p> <p>No decision has yet been made regarding a preferred base port for the offshore construction and operation of the proposed East Anglia TWO project. Such facilities would be provided or brought into operation by means of one or more planning applications or as port operations with permitted development rights. Chapter 26 Traffic and Transport of the ES therefore considers the impacts of constructing and operating the onshore infrastructure only.</p> <p>The Applicant has committed to removing the landfall access via Thorpeness Road (B1353). This has significantly reduced the numbers of HGVs that would pass through Aldeburgh and on to Thorpeness from that presented within the PEIR. The OCTMP (Document Reference: 8.9) provided with the DCO application, sets out measures to ensure that any HGVs that are required to pass through Aldeburgh (a peak of 10 two-way</p>

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	<p>of time that the AILs would spend on the road network, however it is recognised that this is:</p> <ul style="list-style-type: none"> a) Outside of the applicant's control, and b) There may not be an appropriate route from the BLF to the substations. While work has recently been completed to protect the A12 at Blythburgh from tidal flooding both this area and that at Latimer Dam south of Kessingland remain susceptible to disruption from rising sea levels in the medium to long term. The Councils request confirmation that LGVs have been included in the assessments, both for the National Grid works and for all of the other sites, especially the substations which it is expected would generate LGV trips. Further to this, the Councils have concerns about what variance there is in LGV trips per day i.e. that if the average day is 38 LGVs for the National Grid works, what is the peak day. It is worth noting that EDF Energy as part of their consultation for Sizewell C indicated that the busiest day for materials could be as much as twice the average day. Given the apparent omission of LGV trips the Councils have concerns that the peak impact has not been assessed and the traffic impacts are being underestimated. A junction that has a history of collisions, relating to right turning vehicle movements across the A12 and it is reasonable to assume that the proposed developments will further exacerbate these issues given the peak hour (9 HGVs and 64 cars) and 			<p>movements per day, 5 in and 5 out) would be of an appropriate size, or where the load cannot be carried by a smaller vehicle, the HGV would be escorted by a pilot vehicle.</p> <p>The OTP (Document Reference: 8.11) submitted with this DCO application includes details of the proposed numbers of parking spaces that should be provided. The number of proposed spaces seeks to ensure that the target of 1.5 employees per vehicle is managed whilst also managing the potential for overspill parking on the public highway</p> <p>The Applicant has committed to removing the landfall access via Thorpeness Road (B1353). This has significantly reduced the numbers of HGVs that would pass through Aldeburgh and on to Thorpeness from that presented within the PEIR. The OCTMP (Document Reference: 8.9) provided with the DCO application, secured under the requirements of the draft DCO, sets out measures to ensure that any HGVs that are required to pass through Aldeburgh (a peak of 10 two-way movements per day, 5 in and 5 out) would be of an appropriate size, or where the load cannot be carried by a smaller vehicle, the HGV would be escorted by a pilot vehicle.</p>

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	<p>daily (104 HGVs and 64 cars) increase of right turn movements from A12 south to the A1094 for one project.</p> <ul style="list-style-type: none"> It is evident that the B1121 (links 5 and 7) has a collision rate that is higher than the national average for a comparable road type and may be particularly sensitive to changes in traffic flow/type. In addition, the A1094 (links 6 and 8) has a collision rate that is just below the national average. These links (5, 6, 7 and 8) are considered potentially sensitive to changes in traffic flow and therefore need to be assessed further. The Councils accept that the impacts on the highway during operation (26.6.2) are relatively minor with the exception of any future major maintenance refurbishment or renewal and the support services based at local ports. To mitigate any potential delays associated with HGVs turning at the A1094/B1122 junction, HGVs are required to loop around the roundabout. This strategy would be communicated to drivers through the issuing of delivery instructions and also supplemented by advanced signing. The proposals do not identify the car parking provision for staff. The proposed developments need to demonstrate that the proposed car parking can meet the calculated demand, whilst minimising the number of staff cars on the network through demand management and travel planning within the CTMP. 			

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	<ul style="list-style-type: none"> The HGV Marshalling Area (6.7.3.12) proposed along the B1353 at Elm Tree Farm is accepted in principle in highways terms as a practical method to manage deliveries of material and equipment for the landfall HDD. The Councils consider that of the three proposed options the use of escorts for large vehicles is the safest and most practical. Widening will be disruptive and may still result in driver error causing vehicles to manoeuvre outside their lane and looping around the roundabout will not be understood by other drivers. The number of occasions this occurs can be reduced by careful programming by breaking of loads into smaller elements wherever possible. Analysis and calculations were based on average traffic movements which given the nature of traffic in the area seemed to ignore the GEART guidance cited in Chapter 26, of making calculations based on site specific information and circumstances. Reference was made to a falling number of road traffic collisions since 2013 and a conclusion drawn that this may reflect a downward trend without any recognition that all recording is almost entirely dependent on police reporting and attendance, and that police numbers both nationally and locally have fallen significantly since 2012 onwards; which may well be an alternative explanation for the fall. 			

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	<p>PEIR Pedestrian and Cyclist Impacts</p> <ul style="list-style-type: none"> No consideration appears to have been given by the Applicant for how pedestrians or cyclists will access the site, including segregated facilities and cycle parking. The Councils would expect consideration to be undertaken to support safe travel by these modes as indicated as appropriate by NPS-EN1 and the NPPF. For Access 2 off Sizewell Gap Road, due consideration should be given towards the proposals for a cycleway associated with Sizewell C at this location and how the proposed footway could tie-in with this facility. The Councils consider that the impacts of construction traffic identified in Tables 26.31, particularly HGVs have been underestimated on the following links: <ul style="list-style-type: none"> 2a Yoxford, 3a Farnham/Stratford St Andrew, 3c Little Glemham/Marlesford, 4b Theberton, 5b Sternfield, 7 Friston, 10a Aldeburgh, 13 Aldringham, 14 B122 Leiston, and 15 Knodishall/Leiston. The majority of these settlements have narrow footways and few formal crossing facilities. The Councils also disagree with the 	<p>SCC/SCDC (now East Suffolk Council)</p>	<p>4</p>	<p>The issue of pedestrians and cyclists accessing the sites accesses has been discussed with SCC. The Applicant has advised that due to the location of the proposed East Anglia TWO project and the workforce demographic there would be a limited number of employees who may be able to walk or cycle. Therefore, it has been agreed with SCC that it would be disproportionate to provide new pedestrian and cycle accesses.</p> <p>SCC have further advised that the comment relates to the assessment of amenity and severance effects. Section 26.6.1.8 of Chapter 26 Traffic and Transport of the ES includes a more detailed review of the highway environment for each of the screened links.</p> <p>Following consultation feedback the Applicant has committed to not closing any roads.</p> <p>This comment has been discussed with SCC and agreement reached on those junctions that require further assessment. The detailed junction modelling provided within section 26.6.1.11 of Chapter 26 Traffic and Transport of the ES reflects this agreement.</p>

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	<p>comment that through the village of Theberton a footway is provided on at least one side of the road (26.5.1.2). The footway does not extend to the extremities of the settlement and there is a small gap outside The Old Manor. The footway is narrow in places, as is the adjacent carriageway; with large vehicles overhanging the footway and no crossing points (dropped kerbs) are present.</p> <ul style="list-style-type: none"> • The Councils expect, unless there are exceptional circumstances that pedestrian and cycling access will be maintained on closed sections of roads. Exceptions will only be accepted where it is physically impossible to do so (e.g. bridge removed) or it is unsafe to do so. In such cases alternative pedestrian and cycle routes must be provided along the shortest practical route. • Clarification is sought as to why the impacts are greater at A14 Junction 55 than A14 Junction 58 (Seven Hills roundabout), which is nearer to the proposal site. Given the impacts at A14 Junction 58, there are clearly a number of other junctions along the A14 corridor that are likely to be detrimentally impacted by the proposed developments, for which the projects do not include any mitigation. Further assessment should be undertaken of the impacts on the road network, including the A12 and the Leiston and Saxmundham town centre signal junctions. 			

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	<p>PEIR Cumulative Assessment</p> <ul style="list-style-type: none"> Particular attention should be given to Traffic and transport impact, with particular regard to impacts on driver delay / stress and impacts on the safety and amenity of non-motorised users (NMU) and Potential impacts of increased vehicle movements on air quality. The applicant should consider the nearby development of Sizewell C, assess the cumulative implications on the proposed East Anglia TWO and ensure assessments and mitigation measures are consistent and interoperable. The proposals could result in a significant increase in HGV movements on the A12, both to the north and south of Saxmundham. Although outside of the assessed highway network, the Councils believe that the majority of movements from the A12, especially the HGV movements would travel via the A14; this would exacerbate pre-existing issues along the route. EDF Energy's Stage 3 consultation for Sizewell C includes proposals for a bypass of the villages of Stratford St Andrew and Farnham. Without this mitigation in place all of the Applicant traffic from the south would travel through the two villages, with impacts on air quality, noise, severance, road safety and congestion, especially as a result of the pinch point at Farnham bend. The pinch point would result in an increase in HGV movements passing at the bend as well as in very close proximity to 	Public Health England; SCC; SCDC (now East Suffolk Council)	5	<p>Section 26.7.2 of Chapter 26 Traffic and Transport of the ES includes a detailed assessment of the potential for cumulative impacts with Sizewell C New Nuclear Power Station. Chapter 19 Air Quality contains an assessment of Air Quality with respect to the increase in traffic movements.</p> <p>Section 26.6.1 of Chapter 26 Traffic and Transport of the ES provides detailed analysis of the potential severance, amenity, road safety and driver delay impacts within Farnham and Stratford.</p> <p>Potential impacts upon air quality and noise are considered separately within Chapter 19 Air Quality and Chapter 25 Noise and Vibration of the ES.</p> <p>The Applicant has engaged with SCC regarding the extent of highway capacity modelling that would be required. Section 26.6.1.11 of Chapter 26 Traffic and Transport of the ES provides detailed junction and link capacity modelling that reflects this agreement.</p> <p>The Applicant has engaged with SCC regarding this comment and understand that the comment relates to the assessment of driver delay impacts. The assessment of driver delay within section 26.6.1.11 of Chapter 26 Traffic and Transport of the ES has been prepared in accordance with WEBTAG.</p>

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	<p>the footways increasing the risk to all road users. The impact of additional vehicles through this network should be proportionately mitigated. The proposed development would also result in an increase in HGV movements through the villages of Marlesford and Little Glemham resulting in impacts on air quality, noise, severance and road safety that should be mitigated.</p> <ul style="list-style-type: none"> • The Councils recognise that the A12 at Woodbridge would see some congestion without the development in the future; however, given the impacts of the developments on an already congested network, we would expect the Applicant to contribute towards mitigating their impacts at the location. The most effective way to address the additional pressures on the alternative routes is likely to be improvements to the A12, reducing the potential for re-routeing as demonstrated by assessment of traffic for Sizewell C. • the Applicant has proposed two scenarios in relation to the cumulative impacts of the projects; the impacts have been assessed as if the projects have been built simultaneously or sequentially. Building sequentially would generate a higher total number of trips due to the additional remediation necessary between the two projects and repeated mobilisation. Building simultaneously creates a smaller overall trip total but a shorter duration and hence higher daily flows. The different traffic flows for each scenario 			Section 26.7 of Chapter 26 Traffic and Transport of the ES provides a clear explanation of the construction scenarios that have been assessed.

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	<p>should be clearly explained and presented in the Transport Assessment supporting the DCOs.</p> <ul style="list-style-type: none"> ○ The specific cumulative impacts are considered by the Councils likely to be: ○ A12 Woodbridge (congestion) ○ A12/A1094 junction, Farnham (road safety) ○ A12 Marlesford, Little Glemham, Stratford St Andrew and Farnham ○ (Environmental, Severance, Pedestrian Amenity, Geometry/road safety at Farnham bends) ○ A12 / B1122 junction Yoxford (congestion, road safety) ○ A1094/B1069 and B1122 junctions at Snape, Sternfield and Knodishall (road safety). ● The Councils are concerned that the poor visibility for westbound traffic turning into the B1121 at Sternfield has not been adequately considered. 			
	<p>Project Design</p> <ul style="list-style-type: none"> ● The Councils would request that ducts are used within the limits of the public highway to avoid disruption to the highway later. Wherever possible the jointing bays will be located at the edge of field boundaries or roads to allow future access (297) and jointing bays would not be permitted within the public highway. 	<p>SCC/SCDC (now East Suffolk Council)</p>	<p>6</p>	<p>Chapter 6 Project Description of the ES provides details of the cable installation methods that are considered. Detailed design post consent will confirm methods.</p> <p>Noted. Detail is provided in Chapter 6 Project Description of the ES.</p>

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	<ul style="list-style-type: none"> The temporary substation construction access haul road (6.7.8.5) would in principle be acceptable as it would allow access to the substation avoiding Friston for works traffic. In principle the Councils accept the proposal that traffic should be routed along strategic lorry roads identified within the Suffolk Lorry Route Network with limited access points via local roads. The Councils however disagree that while these local roads commonly handle large agricultural plant this is only on rare occasions and does not make them suitable for other large vehicles or loads. Pre-construction activities (6.7.3.2) would include modifications to the highway such as the new access points. The Councils concur that these should be installed in advance of the main works providing access to the CCSs. In addition, early completion of offsite highway improvements would be required to facilitate access of HGVs and AILs to the CCSs. An Outline Access Management Plan will be submitted with the DCO applications and the Councils would expect to be consulted on this. The Councils support the proposals to undertake temporary works such as widening the carriageway to avoid road closures causing delay and driver anxiety. Any road closures will require permission from the Suffolk County Council as Local Highway Authority following consultation with statutory organisations, unless included as specific measures in the DCOs. The proposed 			<p>The applicant considers that the roads identified within the Suffolk Lorry Route Network are suitable for HGV traffic.</p> <p>Noted. Details would be provided in the final AMP submitted to discharge the requirements of the draft DCO.</p> <p>An OAMP (Document Reference: 8.10), secured under the requirements of the draft DCO, is provided in support of the DCO submission.</p> <p>Section 26.3.3 of Chapter 26 Traffic and Transport of the ES identifies that there would be no planned road closures associated with the proposed East Anglia TWO project and that access for all road users would be maintained at all times.</p>

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	<p>procedure for crossing major roads is the same as described for Minor Road Crossings except that generally the road will not need to be temporarily widened prior to beginning excavation. The Councils concur that temporary closures of major roads should be overnight or over a weekend to avoid disruption to road users and specifically public transport including school buses. Access for pedestrians and cyclist shall be maintained at all times.</p>			
	<p>General Assessment Comments</p> <ul style="list-style-type: none"> Sizewell C's consultation identified Middleton Moor as being sensitive due to the proximity of the cottages to the road (this was highlighted as low sensitivity by the Applicant). Link 12 between B1122 and Minsmere entrance is well used by cyclists and sensitivity should be reviewed. No accurate assessment during peak holiday periods and increased traffic flows. A1094 not covered well in the document in regard to how it impacts the village. 70% increase in traffic should be significant. Estimation of current road usage from traffic counts of HGVs alone is totally insufficient. Traffic disruption is not 'negligible' (24.99% increase). Cumulative impact is not minor. PEIR does not acknowledge that the sea-based transportation strategy to support the construction 	<p>Traffic and Transport Expert Topic Group 3 (Highways England, SCDC (now East Suffolk Council) and SCC); Local Community Member; Snape Parish Council Meeting; Church of St Mary the Virgin, Friston; SCC; SCDC (now East Suffolk Council); The Hotel Folk Ltd.; Friston</p>	85	<p>Section 26.4 of Chapter 26 Traffic and Transport of the ES includes the assessment methodology for the traffic and transport assessment.</p> <p>The comments on link descriptions have been incorporated within section 26.5.3 of Chapter 26 Traffic and Transport of the ES.</p> <p>The Applicant has engaged with SCC regarding this comment and section 26.6.1.11 of Chapter 26 Traffic and Transport of the ES presents highway modelling assessments that reflect these discussions.</p> <p>Section 26.6.1 of Chapter 26 Traffic and Transport of the ES includes details of the increases in traffic along all links within the onshore highway study area and potential construction impacts.</p> <p>Section 26.7.2 of Chapter 26 Traffic and Transport of the ES includes a detailed assessment of the potential for</p>

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	<p>of Sizewell C has been abandoned in favour of a road led approach.</p> <ul style="list-style-type: none"> • Forecasts of Sizewell C generated HGV and employee traffic have not been included in Table 26.22 Existing and Proposed Daily Traffic Flows. • PEIR does not provide data on the nature, scale, AADT volumes and timings of traffic (HGV and the Applicant employees) along the Cable Corridor Haul Road. • The ATC data published in the PEIR is misleading to the general public, the forecast increases in HGV volumes presented in the PIER are highly misleading. • Clarification needed on the cumulative HGV and other vehicle moments on the special qualities of the AONB. • There has been no physical test to ensure vehicles can freely access this junction during a normal busy day. All work to date has been a desktop study. • Appendix 26.15 of the PEIR shows indicative traffic flow diagrams these are for the combined average day of the peak. There is some risk that, especially for the HGV movements there is significant variance in the number of potential trips on any day. • SCC/SCDC have concerns that the number of LGV movements has not been included in the assessment, meaning that the impacts for turning movements at the junction are even greater than being indicated. 	<p>Parish Council / SASES; Snape Parish Council; Benhall and Sternfield Parish Council; Darsham Parish Council; Waveney District Council; Aldeburgh Town Council.</p>		<p>cumulative impacts with Sizewell C New Nuclear Power Station.</p> <p>Detailed capacity modelling has provided at section 26.6.1.11 of Chapter 26 Traffic and Transport of the ES, it is considered that the primary mitigation of reducing the speed limit on the A12 from 50mph to 40mph would be appropriate and proportional. This approach is supported by research that highlights that every 1% decrease in average speeds produces a 3% decrease in the accident rate for higher speed rural single carriageway main roads.</p> <p>The Applicant has discussed the comment regarding LCV movements with SCC and advised that the traffic numbers presented within section 26.6.1 of Chapter 26 Traffic and Transport of the ES have been derived from volumes of materials for HGVs and numbers of personnel for LCVs. The employee movements would be completed by a range of LCV types such as, cars, vans, pickups and minibuses. This matter, and the distinction between LGV and LCV vehicles, is clarified in the ES.</p>

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	<ul style="list-style-type: none"> Cumulative impact assessment does not include the LGV movements. Assumption that all the traffic impacts will be on the 'turning junctions' on the A1094 is flawed. Assumption that route from Saxmundham Road to Aldeburgh road is wide enough for two HGVs is not credible. Desk-based study No consultation with EDF regarding traffic volume and flow Clear that the Applicant did not know that construction traffic would travel through Snape Village. Assessment not based on reliable data. No survey conducted in Aldeburgh roundabout area The Applicant have failed to recognise the true nature of the rural road network and the traffic on it. Account has not been taken of slow-moving agricultural vehicles, cyclists or horses. the Applicant calculate an increase in traffic of 135% on the B1069 to Knodishall, but no mitigation is offered. Traffic plan via Aldeburgh is nonsense. No demonstration that HGVs will actually be able to use the country roads. Short/long term impacts no assessed adequately. No assessment of highway adequacy. Not based on reliable data. Assessment not technically robust. 			

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	<ul style="list-style-type: none"> Does not assess volume, weight, noise, speed, frequency, pollutant emissions, vibration amplitude, effects on structures or potential danger to other road users adequately. Methodology heavy, light on conclusions. Calculations based on a single junction and not representative. Does not take into account the cumulative impact of other developments. Unreliable traffic predictions. Unclear how worker traffic has been calculated and its impact. Lacks detail. Assessment of space for HGVs does not leave room for error. For rail routes/level crossings, the potential increase in usage of the crossings as a result of staff and construction vehicles as well as the potential impact of HGVs on the condition of the crossing and its associated equipment will need to be assessed. There is a periodic increase in traffic due to pre-planned outages at Sizewell B reflecting the temporary employment of several hundred additional workers. There is no acknowledgement or assessment of the impact. There is no assessment of the risk of emergency vehicles being seriously delayed on the A12 or on A1094. The assumption that the A1094 was wide enough at all points to allow passing HGVs, based on 			

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	<p>information from SCC, however regular road user will attest this is not the case.</p> <ul style="list-style-type: none"> • The PEIR does not provide Daily Traffic Flows (HGV and Employees) along the main Friston to Thorpeness Haul Road. • The PEIR does not show how the Applicant intends to monitor HGVs, LGVs and private cars using the road network or prevent construction workers from parking cars in any available spot in the local countryside. • EDF have indicated that 85% of SZC's HGVs will travel up the A12 from a southerly direction. The Applicant has failed to address from which direction their HGVs arrive. • There are no details on traffic movements in the consultation document. Reference is made to traffic estimates in 2024 when construction might start and concludes that the impacts in terms of noise and emissions will be minor, which Darsham Parish Council would challenge. • Very difficult to judge the volume of traffic that will be generated from Chapter 26 of the consultation documents. • Concerns around the lack of quality and detailed research on the impact of very significant levels of HGV and other traffic, both in terms specifically of Snape village but also all of the surrounding area including Aldeburgh and other small rural communities. 			

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	<ul style="list-style-type: none"> • Snape was not named in the chapter but was erroneously referred to as the “village of Church Common”, which does not exist. • There was no assessment of the impact of additional traffic at the junction of the B1069 with the A1094 in the village of Snape. the Applicant staff accepted this was a significant oversight and that work would be necessary. • No recognition of the local church sited on the A1094 being accessed from a car park by pedestrians across the main road, an existing traffic hazard, nor the continuing work that has been undertaken in the village to slow traffic speeds on the A1094 because of recognised hazards. • Request further information on highways modelling assessments and assumptions used. • Further detail and assessment of 100% of HGVs travelling from the north or from the south is required along with potential mitigation proposals. In particular more detail on potential impact of traffic resulting from the project on junctions of the A12 between Lowestoft and Saxmundham is required. • ATC demands urgent clarification regarding the scheduling plans, vehicle numbers and vehicle types so that the realistic likely impact on Aldeburgh residents of the additional traffic can be properly determined and appropriate responses made. 			

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	Construction Traffic Management Plan <ul style="list-style-type: none"> Consult with Royal Mail on any proposed road closures, diversions, alternative access arrangements, hours of working and the content of the final CTMP. The forthcoming DCO application offers a requirement that the final CTMP includes provision for a mechanism to inform major road users about works affecting the local network. 	Royal Mail	2	Detail of proposed road works, closures and diversions are included within the OAMP (Document Reference: 8.10). The OAMP, secured under the requirements of the draft, has been submitted with this DCO application.
	Concern over proposed mitigation <ul style="list-style-type: none"> SCC/SCDC consider that the improvements proposed for the A12/A1094 junction (Cluster 3) are not sufficient to reduce the significance from major to minor in Tables 26.31. The Councils remain unconvinced that the proposed mitigation is sufficient given the significant increase in peak hour turning movements and daily HGV turning movements as a result of the projects at the junction, with impacts on congestion and safety. 	SCC/SCDC (now East Suffolk Council)	2	<p>Detailed capacity modelling has provided at section 26.6.1.11 of Chapter 26 Traffic and Transport of the ES, it is considered that the primary mitigation of reducing the speed limit on the A12 from 50mph to 40mph would be appropriate and proportional. This approach is supported by research that highlights that every 1% decrease in average speeds produces a 3% decrease in the accident rate for higher speed rural single carriageway main roads.</p> <p>During consultation with SCC (the local highway authority), SCC confirmed that a neutral period (i.e. no seasonality) could be adopted for the assessment. Background traffic flows presented within this ES represent 'annual averages' and therefore do not include for seasonality.</p>
	Traffic Impact Concerns	Traffic and Transport	570	Chapter 26 Traffic and Transport of the ES assess the impact on road networks and consider all road users and

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	<ul style="list-style-type: none"> Concern with transport issues associated with cumulative impact of worker accommodation. Dangerous for other road users, pedestrians, horse riders and cyclists. Danger due to unlit roads. Concern over an increase in injuries and deaths. Danger to pedestrians (including the elderly, children and mobility scooter users) and cyclists at Aldeburgh roundabout. Aldeburgh already has considerable congestion problems. Traffic impacts on local community, tourism and local businesses. Concern over traffic impacts and 'rat running' from those using alternative routes to the routes used by construction traffic. Increasing journey times. Concern over volume of HGVs per day (around 150, over 1,500 per day). 4.5 HGVs a minute. Concern over the frequency of HGVs increasing that pinch points cause two vehicles to stop before attempting to pass. Concern over traffic outside of working hours. Concern over property damage due to the number of HGVs. Traffic is worse during summer months and during school holidays, bank holidays and special events such as Snape Maltings. Concern over speeding issues. Concern over impacts on emergency vehicles. 	<p>Expert Topic Group 3 (Highways England, SCDC (now East Suffolk Council) and SCC); Save our Sandlings; Local Community Members; Church of St Mary the Virgin, Friston; Aldeburgh Society; SCC/SCDC (now East Suffolk Council); The Hotel Folk Ltd.; Friston Parish Council / SASES; Snape Parish Council; Orford and Gedgrave Parish Council; Orford and Gedgrave Parish Councils;</p>		<p>suitability. This information forms a Traffic Management Plan which will be submitted with the DCO application. Before the application can be submitted, The Traffic Management Plan will require approval by Local Highways Authorities.</p> <p>The southern access to the landfall has been removed which has led to a reduction in movements from 55 to 10 vehicle movements per day along the A1094/ B1122 route.</p> <p>Road safety has been assessed Chapter 26 Traffic and Transport of the ES.</p> <p>The Applicant has committed to removing the landfall access via Thorpeness Road (B1353). This has significantly reduced the numbers of HGVs that would pass through Aldeburgh and on to Thorpeness from that presented within the PEIR. The OCTMP (Document Reference: 8.9) provided with the DCO application, sets out measures to ensure that any HGVs that are required to pass through Aldeburgh (a peak of 10 two-way movements per day, 5 in and 5 out) would be of an appropriate size, or where the load cannot be carried by a smaller vehicle, the HGV would be escorted by a pilot vehicle.</p>

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	<ul style="list-style-type: none"> Roads and bridges cannot accommodate the increase in traffic. Six day a week burden on the road network. Road improvement works will cause further delays. Concern that the impact is only considered 'minor'. There is already damage to the roads due to current heavy traffic which will suffer further. Traffic should not take soil away (from cable route), soil should be spread locally. Heavy plant and construction vehicle disruption. What will the plans be for emergency vehicles needing rapid access to the site? Blockages could delay emergency vehicles. Concern over 70% increase in traffic on A1094. Concern over use of Grove Road. If Saxmundham Road was blocked by construction traffic Aldeburgh residents would be denied access to Ipswich Hospital, Aldeburgh Hospital, Garrett House nursing home and the railway station. Additional transport movements will isolate villages like Friston and Snape. Countryside isolation (especially with those who cannot drive). Impacts on houses on Gipsy Lane or Fitches Lane. The convoy system proposed for the B1353 road will adversely the villages of Thorpeness and Aldringham as only other access route is via the 	<p>Aldringham-cum-Thorpe Parish Council; Snape Maltings; Sizewell Residents; Waveney District Council</p>		

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	<p>coast road from Aldeburgh, which in turn will experience increased traffic flow at the roundabout.</p> <ul style="list-style-type: none"> • Sizewell Gap Road is the only access point/ road in and out of the operational nuclear site and the visitor centre generates traffic, at outages there is added congestion. • Sizewell Gap Road often has a dangerous bottleneck at the access point to the local dump and there were traffic lights which caused disruption, more of this is not needed. • Agricultural vehicles currently use these roads, additional traffic will create disruption. • Traffic impacts on the AONB, SSSI and SPA. • Access to Bull's Hall will be compromised as a result of the substantial increase in traffic past the entrance and likely tailbacks arising from 'traffic management'. • B1122/Lovers Lane/Sizewell Gap Road will see an increase of 300 vehicles per day at peak times. • Concern over safety issue at Household Recycling site with parked vehicles when site is closed for container movements and when there is no available spaces for unloading. The site entrance less than 200 m and unsighted of brow of hill for vehicles travelling North towards the B1122. • Concern over road surface damage caused by turning long heavy articulated vehicles (on A1094/B1122) 			

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	<ul style="list-style-type: none"> Local roads have not been designed to take constant heavy traffic and sub-surface may prove unsuitable over time for the loads put upon them. Visitors are directed down the B1122/B1353, which becomes gridlocked mid-high season. The increased traffic on the A12 and A1094 will tend to decrease gaps on the A12 in both directions for traffic turning in and out of the A1094. As HGVs require greater gap times to turn safely this will increase the risk of misjudgement of gaps, a factor in past collisions and increase delays and frustrations for other drivers. The accident poor performance is likely to be a result of difficulty for vehicles to find gaps to undertake turning movements, and this is indicative of a junction where there is the potential for issues with capacity. The significant increase in HGVs will result in longer queues in the right turn lane of the A12/A1094. Consideration needs to be given to impact of construction and non-construction traffic at each junction east of the A12. HGV, normal drivers and caravans altogether will cause non-moving traffic at the Aldeburgh roundabout Damage to water and sewerage pipelines by construction traffic. Impact of temporary traffic lights. 			

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	<ul style="list-style-type: none"> Concerns around the traffic at the recycling centre which is already dangerous with car queuing in both directions. Road widening and alteration will be out of character for the area. Number of HGV movement will change the character of Aldeburgh and Aldringham. Concerns about how non-HGV traffic will be managed in Friston. Should take into account decommissioning will experience same issues i.e. lack of direct access and scale in the future. the Applicant propose a 71% increase in HGVs on the A1094 and an increase of 135% on the B1069 (Appendix 26.25). No mitigation has been offered by the Applicant for the substantial increase in traffic on the B1069. PEIR does not show how the Applicant intends to monitor HGVs, LGVs and private cars using the road network or prevent construction workers from parking cars in any available spot in the local countryside. No account of seasonality of traffic flow to take into account peak tourist times. Concern over the 45 HGV deliveries per day proposed to use the B1121 to access the National Grid Substation. Concerns over up to 500 deliveries (therefore 1000 potential movements) a day through Snape village along the A1094. 			

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	<ul style="list-style-type: none"> The impact on homes close to the haul road is of great concern to residents whose homes are close by, particularly at the crossing point on the B1122. Traffic will impact roads wider in the county (e.g. A12, A14 and A1094 through Snape). Traffic from construction workers at 7am would be very disturbing and no research has been done to show this impact. Concerns about the increase in traffic and the degradation of roads which is already evident along B1353 is not made worse and that the additional maintenance required will be supported by the Applicant. Concern over traffic coming from the north. Whilst escorting vehicles on the B1353 between Aldringham and Thorpeness is acceptable in principle in highway safety terms the details need to be agreed and carefully considered in relation to any residential amenity impacts. It is accepted that this method is less disruptive than closing the road (i.e. a delay of 3 minutes is less than the additional time taken to divert via Aldeburgh) but it will still cause inconvenience for the local community and tourists. It should be noted that the mechanisms for access by emergency vehicles remains to be agreed. 			

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	<p>Route/access concerns</p> <ul style="list-style-type: none"> Concerns over access points (and lorries). Concern over access to the beach (near Sizewell). Track down to Wardens Trust should be maintained for emergency vehicles. Roads and country lanes unsuitable to handle construction traffic. Concern over HGVs down Leiston Road. Concern over proposal to use A1094 from the A12 to Aldeburgh and then B1122 to Aldringham, including use of the roundabout. Concern of use of the roundabout in Aldeburgh due to route that children take to school and there are junctions off the roundabout which lead to a fire station and supermarkets. Leiston Road is busy and congested at peak times of day (such as school times). There are many parked cars on Leiston Road – traffic is single file (understated in the PEIR). There is no two-way HGV movement on Leiston road. Concern that residents will no longer be able to park near the Aldeburgh roundabout/ Leiston Road. Concern that pedestrian crossing will be moved. Route through residential part of Aldeburgh. Concerns over HGVs going off route. The B1353 is a totally unsuitable road for heavy traffic, many parts are currently too narrow and 	<p>Save our Sandlings; Local Community Members; Snape Parish Council Meeting; B1122 Action Group; Church of St Mary the Virgin, Friston; Leiston-cum-Sizewell Town Council; Aldeburgh Society; Friston Parish Council / SASES; Orford and Gedgrave Parish Councils; Aldringham-cum-Thorpe Parish Council; Snape Maltings; Sizewell Residents; SCC; SCDC (now East Suffolk Council)</p>	555	<p>The southern access to the landfall has been removed which has led to a reduction in movements from 55 to 10 vehicle movements per day along the A1094/ B1122 route.</p> <p>Chapter 26 Traffic and Transport of the ES assess the impact on road networks and consider all road users and suitability. This information forms a Traffic Management Plan which will be submitted with the DCO application. Before the application can be submitted, The Traffic Management Plan will require approval by Local Highways Authorities.</p> <p>Following consultation feedback the Applicant has committed to not closing any roads.</p>

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	<p>winding. It is also frequently used by cyclists and crossed by pedestrians and golfers.</p> <ul style="list-style-type: none"> • Proposal to use the B1122 from the A12 to Sizewell is a concern as the current junction at Yoxford is unsuitable and the B1122 is narrow and windy. • Avoid Yoxford and other communities on the B1122. • Concern over using the B1069 from the A12 through the A1094 towards the southern edge of Knodishall. • Concern over road widening of A1094 which will impact residents and will leave safety risks. • A12 is unsuitable and is often blocked. • Concern over junction from A12 to A1094. • Issues with local traffic merging onto A1094 from B1069 junction at Church Common, Snape. • A1094 near golf club is accident black spot. • A1094 has an existing problem with agricultural vehicles and there are many pinch points where vehicles cannot pass (2.5m wide vehicles cannot pass). • A1094 is a very busy road in the tourist season. • B1122 has terraced houses and no parking which makes travelling along this road difficult, as there are many parked cars. • Long route to the landfall site. • Sternfield, Coldfair Green and Knodishall should be avoided. • Traffic should not go on Church Road. • Concern over impact of haul roads. 			

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	<ul style="list-style-type: none"> Concern over Link Road splitting parishes, cutting off homes from village centres, close footpaths and roads and make farms unviable. Concern over road infrastructure changes. Impacts on Knodishall due to HGVs using the A1094. If the Farnham and Stratford St Andrew bypass goes ahead then the only service station between Woodbridge and Aldeburgh will be Snape village and traffic will criss-cross the A1094 for access which will further congest this road and increase the risk of accident. Roads included will not be wide enough to fit two vehicles passing one another. Bend at Snape Watering is very dangerous. Unsuitable roads often used for walking, farm vehicles, cyclists and horses. Two new housing developments along the B1122 near the roundabout. Concern over dual carriageway haul roads. Concern over impacts to residents living close to Haul Roads. Concern over HGVs turning right onto the haul road opposite Fitches Lane impacting local residents. Sizewell Gap Road may be used in decommissioning of the nuclear site as well as construction of a further nuclear twin reactor site. Sizewell Gap Road is the only road for access to this area of coast for residents and visitors (including houses, conference centre, Beach View 			

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	<p>Caravan Site, The Wardens, local pub and beach café).</p> <ul style="list-style-type: none"> Proposed access points on Sizewell Gap Road although residents already have difficulty turning into and out of their properties or trying to use the road to get to normal daily activities. No road should ever have a full closure. Reconstruction of the A1094/ B1122 route would bring chaos Even improved road networks will be inadequate. Concern over access/egress for the Thorpeness Road adjacent to Partables Farm. Concern over access/egress adjacent to the Recreation Ground, which is inappropriate due to recreation ground use. Lorry holding/ marshalling area off the public road at Elm Tree Farm on the B1353 is totally inappropriate and unacceptable. Concern over using A1094 / B1069 Blackheath Corner as main route out of Leiston and Knodishall to Snape and the A12 Southbound, with very heavy traffic at peak times. The B1122/ B1353 junction at Aldringham to Thorpeness is the main route out of Thorpeness to Leiston/Saxmundham. Therefore, there will be delays and inconvenience to local residents. Proposed one-way escorted convoy system between Thorpeness and Leiston Road, with HGV holding areas at both ends, is unworkable. Longer routes mean HGVs will be moving for longer and therefore generate more pollution 			

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	<ul style="list-style-type: none"> Major displacement effects on the B1069 and associated minor road network in Snape, Friston, Sternfield and Benhall areas. Site access point from Thorpe Road to cable landfall site is of concern. The proposed A1094/B1122 route would require substantial reconstruction of the approach roads to and from the roundabout which would bring chaos to the town causing wholesale disruption, pollution and adversely affect the town's key tourist industry. The junction from the A12 to the A1094 is already very badly designed and dangerous and simply will not cope with 150 HGV Lorries using it per day. A1094 and B1122 route is longer than B1069 so should not be used. Queuing at Household recycling centre could create a high risk zone with the introduction of HGVs. Restriction of access to homes, schools, supermarkets and pubs in Aldeburgh Block access to fire station and ambulance route. Not enough parking at present. Would cause major issues if further restricted along Leiston Road. Construction workers parking will add to congestion. The proposed A1094/B1122 route would require substantial reconstruction of the approach roads to and from the roundabout which would bring 			

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	<p>chaos to the town causing wholesale disruption, pollution and adversely affect the town's key tourist industry.</p> <ul style="list-style-type: none"> Concerns over increased traffic on Lover's Lane. Lovers Lane and Sizewell Gap Road from B1122 North of Leiston to Sizewell Junction will suffer and have safety issues. Making the problems with merging onto the A1094 from B1069 at Church Common worse, especially when there are events being held at Snape Maltings. A1094/B1069 Blackheath Corner is already heavily trafficked and can be dangerous. Cycling impact to Thorpeness and Aldringham during construction. A1094/B1121 junction has a blind spot and a dip and HGVs will make this more dangerous. Sand tracks and narrow lanes at Thorpeness beach are not appropriate for construction traffic. One-way escorted system between Thorpeness and Leiston Road with holding areas at both ends is unworkable. Unadopted road from Thorpeness to Sizewell is used as the only alternative to the Sizewell Gap Road which will become congested from Sizewell C construction traffic so needs to be kept open. 8m access road to the substation is too wide. Traffic will be backing up at the Sizewell level crossing. Unsure as to why the access road for weekly/monthly maintenance post construction 			

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	<p>has to be 8m wide, creating a very urban feature in a rural setting.</p> <ul style="list-style-type: none"> • Must be no allowed access for the Applicant traffic along Grove and Mill Roads, Friston. • Although the B1353 Aldringham Lane to the west of Aldringham crossroads has not been included as a designated route it is essential that safeguards are put in place to prevent its use. • The location of the site access point from Thorpe Road to the cable landfall site is of great concern as this is a very narrow stretch of road which is bounded by high hedges just as it enters the village. We ask that the Applicant work with the Aldringham-cum-Thorpe Parish Council to find an appropriate solution for all the users who require access at this point. • No justification as to why the substation access road needs to be 8m wide. • The B1353 would only be acceptable as a diversion route for light goods vehicles and an alternative HGV would need to be provided. 			
	<p>Rail infrastructure</p> <ul style="list-style-type: none"> • Sections of the East Anglia TWO Offshore Windfarm scheme's proposed development area are located in close proximity to Network Rail's operational infrastructure. • Consideration will need to be given to the potential increase in usage of the crossings as a result of staff and construction vehicles. 	Network Rail	4	<p>Figure 26.1 of Chapter 26 Traffic and Transport of the ES details the current Onshore Highway Study area which demonstrates that the closest operational infrastructure is approximately 40m from the proposed development area. This is noted and is considered within the scope of works.</p> <p>An exclusive assessment of level crossings subject to an increase in traffic movements has not been undertaken.</p>

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	<ul style="list-style-type: none"> The potential impact of large / heavy construction vehicles on the condition of the crossing and its associated equipment will need to be assessed. Mitigation measures may be required to address any adverse impact on the level crossings. 			<p>However, Table 26.22 of Chapter 26 Traffic and Transport of the ES details the potential traffic increase of the proposed development. An assessment of the potential impacts of an increase in traffic movements on the level crossings could be carried out at a later date, if required.</p> <p>Level crossings have been considered in Appendix 26.3 Abnormal Indivisible Load Access to the Proposed East Anglia TWO and Proposed East Anglia ONE North Offshore Windfarm Substation of the ES. It is expected that any Special Order load will need to adhere to the standard caution when crossing level crossings in Special Order permissions.</p>
	<p>Access / route approval</p> <ul style="list-style-type: none"> The confirmation that HGVs engaged in the construction of the project will not be routed along the B1121 through Benhall Green and Sternfield (Chapter 26, pages 16 & 17) is welcomed. 	Benhall and Sternfield Parish Council	1	Noted.
	<p>Access/ Route suggestions</p> <ul style="list-style-type: none"> Use the route from Snape Road to Thorpe Ness via the B1069. Ship and rail should be considered (even if more expensive) – upgrade rail lines and construct a temporary docking pier off Sizewell. B1122 from Yoxford to Sizewell should be an alternative to A1094-B1122. 	Local Community Members; B1122 Action Group; Aldeburgh Society; The Hotel Folk Ltd. Snape Parish Council; Benhall	84	<p>An assessment of the suitability of all roads within the study area has been undertaken in Chapter 26 Traffic and Transport of the ES. Embedded mitigation measures are within section 26.3.3 and include access strategy commitments to reduce the impact of HGV traffic upon the most sensitive communities.</p> <p>Also, the southern access to the landfall has been removed which has led to a reduction in movements</p>

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	<ul style="list-style-type: none"> Church Road (where it meets the A1094) should be a 'no go' route. The sea should be used to transport construction materials. Use alternative route to B1122 – a variant of D2, Route W, which can provide access for the Applicant and HG. This would remove the need to improve junction on the A1094. Would remove the need to bring HGVs through Leiston or Aldeburgh. Use Sizewell Gap Road to access the landfall (once the eastern section of the cable corridor haul road is constructed). Alternative, shorter, underground or bridges. Access points and routes should be reviewed by landowners when cable routes are confirmed. Access point near cable route section 1b should be reacted to the west to utilise the existing field access and save hedge destruction. Improvements need to be made to the junction with Church Road, Snape. Although the B1353 Aldringham Lane to the west of Aldringham crossroads has not been included as a designated route it is essential that safeguards are put in place to prevent its use. Fewer people will be affected by a much shorter and safer route via the B1069 to the B1353 Use the B1122 turn off the A12 at Yoxford which is to be improved for the proposed Sizewell C and D power stations access route. Blackheath Corner to Sizewell via B1069 Blackheath Corner to Thorpeness via B1069 	<p>and Sternfield Parish Council; Darsham Parish Council; Aldringham-cum-Thorpe Parish Council; Waveney District Council</p>		<p>from 55 to 10 vehicle movements per day along the A1094/ B1122 route.</p> <p>Rail was not an option for delivery of materials as EDF Energy confirmed they require all available rail capacity. Regarding using ship transport, there is no available area for berthing ships and there are many protected habitats including Sites of Special Scientific Interest along the beach.</p>

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	<ul style="list-style-type: none"> Provide traffic calming through Sternfield village Utilise a temporary haul road. Make the A1094 wider and use that as it is the straightest route to Friston. Move access road further along the Sizewell Gap Road towards Sizewell Village. Field to the west of bridleway 28 is no longer being considered by Sizewell and could therefore be utilised. Prior to Sizewell B, there was a proposal for a link road via Leiston, this would give a long term economic legacy by giving a better connection to the A12 whilst avoiding congestion in Saxmundham. Use Lowesoft Port to facilitate construction and maintenance. 			
	<p>Traffic Mitigation Suggestions</p> <ul style="list-style-type: none"> ANPR systems in place to ensure HGVs adhere to designated routes. Build Four Villages Bypass before construction. Road improvements needed before construction. Dangerous junction at A1094-B1069 should be improved. A1094 will need upgrading. A1094 should be widened at the west end. Need a footpath/ cycle track along the B1353 from Aldringham to Thorpeness to maintain safety. Need control on scheduling delivery traffic to minimise impacts on residents. 	<p>Local Community Members; Snape Parish Council; Leiston-cum-Sizewell Town Council; Save our Sandlings; SCC/ SCDC (now East Suffolk Council); Royal Mail; Suffolk Coast</p>	94	<p>Mitigation suggestions from Phase 4 on traffic/congestion are to be considered and any updates to mitigation will be presented in the Construction Traffic Management Plan (CTMP) accompanying the draft DCO. Potential for additional road/ infrastructure improvements beyond the required mitigation are to be considered if the consent is successful.</p> <p>Section 26.7.2 of Chapter 26 Traffic and Transport of the ES includes a detailed assessment of the potential for cumulative impacts with Sizewell C New Nuclear Power Station.</p>

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	<ul style="list-style-type: none"> New junction between Church road and A1094 necessary – could include a new junction format such as a traffic island and extra slip roads. One-way system where site traffic travels from the A12 either on the A1094 or via Yoxford turning into Sizewell and returns the same way. Additional single track roads would be required. One-way system (clockwise or anti-clockwise) so that HGVs don't cross paths. Operate 12 hour shifts between 12pm and 12am or 9:30am to 9:30pm to avoid morning rush hours. Prevent traffic from going through Aldeburgh from 6pm and 8am. Traffic management office should be in operation with a hotline during working hours. A road could be built from Sizewell Gap Road to the access point on the beach. Haul road link so that the system becomes one way. There should be planned improvement for the top road at Snape – people are already waiting half an hour to get out. Need improvement at Tunstall junction. Intelligent transport infrastructure programme. The A1094 as it passes the junction to the B1069 should have a 40mph limit imposed. 40mph speed limit at the entry of the B1121 from Friston. Another study done to look at changing the whole layout and visibility at the entry of the B1121 from Friston to increase safety. 	<p>and Heath AONB Partnership; Aldringham-cum-Thorpe Parish Council; Friston Parish Council / SASES; Aldeburgh Town Council</p>		<p>Any modifications to roads would be undertaken in consultation with SCC though the development of the final AMP and final CTMP post consent. These documents would be produced to discharge the requirements of the draft DCO.</p>

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	<ul style="list-style-type: none"> Carriageway should be widened on B1069 from Blackheath to Knodishall. Traffic impacts should be minimised. Should be a suitable Traffic Management Plan. Lovers Lane/ Sizewell Gap Road requires a reduction to 30mph for the duration of the project and consideration as a permanent solution for the whole length of this road from the B1122 to Sizewell village. Also, to consider vehicle activated speed warning signs to reinforce the reduced speed limit. Further signage warning of turning vehicles in/out of properties, especially at Halfway Houses. A1069 subject to National speed limit. Consider speed and traffic moderation to ease congestion and improve safety. Consider adding warning signage of turning traffic. The Applicant to consider policing of all routes to ensure compliance with authorised routes to sites and to posted speed limits. Far more significant mitigation works are required at the A12/A1094 junction. All highway improvement schemes, unless otherwise agreed, should be subjected to detailed design, swept path assessment, junction modelling and a road safety audit, as part of the DCO submission. Modifications where the cable route crosses the public highways, would be undertaken in consultation with and in accordance with the requirements of the Councils. Stage 1 safety 			

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	<p>audits will be expected to be provided as part of this process.</p> <ul style="list-style-type: none"> • HGV traffic into Aldeburgh should be limited to 5 days a week, 8 hours a day maximum, with HGV traffic banned in July and August, at Easter and at half terms. • One-way escorted convoy system between Thorpeness and Leiston Road should be limited so that no peak holiday or weekend working is permitted • Skirt of Farnham Road should be cut back to increase road width and trees and hedges should be cut back to make room for overhand of wing mirrors. • the Applicant should provide a mini roundabout at the Church Road, Snape junction. • EDF and the Applicant should buy land together to build a temporary highway for HGVs and a trench for the cable. • the Applicant and EDF should work on joint transport solutions to reduce traffic impact on residents. • Cycle path between Aldringham and Thorpeness to link the two parts of the parish. • Ensure drivers know not to park or drive on verges. • Speed limited should be posted to ensure health and safety. • HGV traffic should be limited to 5 days a week, 8 hours maximum a day, with HGV traffic banned in July and August, at Easter and at half terms. 			

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	<ul style="list-style-type: none"> • Reduce the speed limit on Lovers Lane/Sizewell Gap Road to 30mph (permanently if possible). • Consider using sea or rail transport to access the sites instead of road. • Use vehicle activated signs to reinforce speed limit. • Provide further warning signs to vehicles turning in and out of property along the routes effected. • Improve safety at the entrance to the household recycling site (B1122). • In the event that construction of the schemes takes place in parallel, the Applicant should provide information on the construction traffic mitigation measures. • It is accepted that the Applicant cannot readily control either the route or driving habits of the Applicants workforce, it should be acknowledged the concerns about the B1121 through Sternfield (link 5b), where there are sections where a car and a HGV cannot pass and propose suitable traffic calming measures that will reduce traffic speed and allow traffic to safely pass. • Proposals intimate changes to B1122 / B1353 junction. The two adjacent bus stops are used by school children, who have to cross the B1122 at this point. Any alterations of this junction and the access to Elm Tree farm which is proposed as a compound area should, as a minimum, maintain or improve pedestrian safety. The common land to the south east of the junction should not be impacted as part of any road improvements. 			

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	<ul style="list-style-type: none"> The instigation of a construction / staging compound at Elm Tree Farm to assist with traffic flow along the B1353 seeks to control the timing of traffic movements, but it does not address the concerns that the B1353 from Aldringham cross roads to Thorpeness is a particularly narrow road and is extensively used by cyclists and some pedestrians who already use this road at some risk. There is a particularly bad section at the old Thorpe crossing where the road is badly aligned and where golfers have to cross the road. This has been the location of a number of accidents. The size of the and number of additional HGVs in relation to the width of the road is of great concern. The only affective way to mitigate these issues is to provide a footpath/cycle route alongside the road from Aldringham to Thorpeness, together with a small realignment of the road at Thorpeness crossing. Improve infrastructure and road safety. The villages of Thorpeness and Aldringham have wanted a connecting cycle path for years to link the two parishes. Providing this would give a lasting benefit and ease the danger posed to pedestrians and cyclists who use and cross the B1353 (which will be exacerbated by the developments construction traffic). The potential for a roundabout at the junction of B1069 and A1094, but any work to reduce the impact of large amounts of queuing traffic through the village would have to be fully researched and 			

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	<p>analysed (in terms of traffic delays, air and noise pollution).</p> <ul style="list-style-type: none"> • Long term mitigation of impacts is possible but mitigation for construction phase needs discussing with local Councils. • If a wide access is needed for the substation access, it should be temporary only. • Traffic calming measures should be introduced on the Aldeburgh stretch of the Saxmundham Road (A1094). These measures should not prevent access for legally-permitted vehicles and should be carefully managed. Considerable upfront funding for a nationally-recognised consultant will be needed to enable the best solution not just for the town but the NSIP instigator. • Narrow speed cushions (under 1300mm), build-outs and chicanes, where traffic has to give way to oncoming vehicles, may well be required. • Automatic Number Plate Recognition cameras to be installed at the town boundaries on the A1094 and the B1122. • Regularly placed, curb to curb flat-topped crossing plates would slow traffic yet allow access for emergency vehicles. Placed at 200m / 300m intervals from the brow of the hill after the Golf Club, they would prevent speeding of both HGVs and other road users into the town. • If alterations are made to the road / pavement system considered detrimental to the town, compensation additional to the compulsory purchase finance, plus high quality reinstatement 			

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	<p>at the earliest opportunity will be required. ATC would request engagement, input and transparency concerning all changes as a matter of course.</p> <ul style="list-style-type: none"> Houses and buildings affected by HGV movements should be provided with unlimited free electricity for the life of the project, double glazing and additional insulation to an exceptional level. There will be further stress on a number of junctions as a result of the proposed developments. The Councils expect the Applicant to mitigate the residual cumulative impacts of their developments, so as to not be determined a severe highway impact as indicated as the appropriate test within the NPPF. 			
	<p>Traffic related soil erosion and road degradation</p> <ul style="list-style-type: none"> Concern over soil erosion at the access points. Degradation of road along the B1353. 	Save our Sandlings; Local Community Members	3	<p>Potential soil erosion is covered in Chapter 21 Land Use of the ES. Embedded mitigation measures are covered in section 21.3.3.</p> <p>As part of the embedded mitigation measures for Chapter 26 Traffic and Transport of the ES (section 26.3.3) there will be no HGV construction traffic would be permitted to travel via the B1353 towards Thorpeness.</p>
Human Health	<p>PEIR Methodology</p> <ul style="list-style-type: none"> Land Use is a wider determinant of health and wellbeing we expect the Environmental Statement (ES) to address, to demonstrate whether it is likely to give rise to significant effects. We have 	Public Health England	6	The ES considers land use effects in Chapter 21 Land Use of the ES and draws upon this assessment in Chapter 27 Human Health of the ES where necessary.

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	<p>focused its approach on scoping determinants of health and wellbeing , which has been derived from an analysis of the wider determinants of health mentioned in the National Policy Statements.</p> <ul style="list-style-type: none"> The scale and nature of the proposed development results in the need for very clear reporting on the temporal impacts and effects on the local population. In this context “temporary” impacts can extend over long periods. The scoping report usefully identifies that the temporal scope of impacts will be determined using the following definition: <ul style="list-style-type: none"> ‘Very short term’ relates to effects measured in hours, days or weeks (e.g. effects associated with cable laying activity past a particular dwelling); ‘Short term’ relates to effects measured in months (e.g. requirements of the overall construction stage, such as workforce use of accommodation); ‘Medium term’ relates to effects measured in years (e.g. local employment during construction) accommodation); ‘Long term’ relates to effects measured in decades (e.g. the operational stage). PEIR should use the above definitions rather than generic temporary or permanent temporal descriptions to ensure a consistent, transparent and accurate approach to the report. 			<p>The ES considers the effect due to traffic in Chapter 26 Traffic and Transport. This has been drawn upon in Chapter 26 Traffic and Transport and Chapter 30 Tourism, Recreation and Socio-economics where necessary.</p> <p>Temporal scope is defined in section 27.3.1.4 of Chapter 27 Human Health of the ES. Definitions given in section 27.3.1.4 of Chapter 27 Human Health are used throughout to assess construction and operational phase impacts in sections 27.6.1 and 27.6.2 of Chapter 27 Human Health.</p> <p>The scope of the assessment and the methodology used were agreed with Public Health England prior to undertaking the PEIR, as presented in this table. The same methodology and scope are maintained for this ES.</p> <p>The method statement agreed with Public Health England did not include the need for an Equality Impact Assessment. Protected characteristics of the Equality Act 2010 are discussed in section 27.3.1.3 of Chapter 27 Human Health.</p> <p>The method statement agreed with Public Health England did not include the need for an Equality Impact Assessment. Protected characteristics of the Equality Act 2010 are discussed in section 27.3.1.3 of Chapter 27 Human Health of the ES.</p>

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	<ul style="list-style-type: none"> An approach to the identification of vulnerable populations has been provided but does not make links to the list of protected characteristics within an Equality Impact Assessment (EqIA). The impacts on health and wellbeing and health inequalities of the scheme may have particular effect on vulnerable or disadvantaged populations, including those that fall within the list of protected characteristics. The ES and any EqIA should not be completely separated. assessments and findings of the ES and any EqIA should be cross reference between the two documents, particularly to ensure the comprehensive assessment of potential impacts for health and inequalities and where resulting mitigation measures are mutually supportive. Access is a wider determinant of health and wellbeing we expect the Environmental Statement (ES) to address, to demonstrate whether it is likely to give rise to significant effects. We have focused its approach on scoping determinants of health and wellbeing, which has been derived from an analysis of the wider determinants of health mentioned in the National Policy Statements. Socio-economics is a wider determinant of health and wellbeing we expect the Environmental Statement (ES) to address, to demonstrate whether it is likely to give rise to significant effects. We have focused its approach on scoping 			<p>The ES considered the Effect of Reduced Access to Health Services in section 27.6.1.5 of Chapter 27 Human Health using the transport assessment in Chapter 26 Traffic and Transport.</p> <p>The ES considers socioeconomic effect in Chapter 30 Tourism, Recreation and Socio-economics and draws upon this assessment in Chapter 27 Human Health where necessary.</p>

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	determinants of health and wellbeing, which has been derived from an analysis of the wider determinants of health mentioned in the National Policy Statements.			
	<p>PEIR Cumulative</p> <ul style="list-style-type: none"> The local community will experience impacts from a range of factors due to this and other local developments over an extended period. The range of impacts over such a long period may result in minor effects gaining increased significance to local communities and the vulnerable population within. It is unfortunate that the PEIR has not considered the latest consultation from Sizewell C; however, it is noted that the Section 42 applications for both developments were completed in January 2019. Many of the working assumptions within this PEIR may now need to be re-assessed in the light of this latest Sizewell C consultation. This will have particular importance to the assessment of construction staff accommodation needs, traffic and transport and the impact on the local health care system and community cohesion from the introduction of a large external workforce across a number of infrastructure schemes. The assessment of cumulative impact should be reviewed using the latest PEIR from Sizewell C. Particular attention should be given to the demand for health care services and community cohesion. The applicant should consider the 	Public Health England	2	Information from Sizewell C New Nuclear Power Station PEIR is included within the Cumulative Impact Assessment (CIA) (section 27.7 of Chapter 27 Human Health). The Sizewell B Power Station Complex has additionally been screened into the CIA presented in Chapter 27 Human Health.

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	nearby development of Sizewell C, assess the cumulative implications on the proposed East Anglia TWO and ensure assessments and mitigation measures are consistent and interoperable.			
	<p>General Assessment Comments</p> <ul style="list-style-type: none"> Increasing asthma and breathing related illnesses are not 'negligible'. When did 'assessment of activities which may impact on physical or mental health during construction and operation of the proposed windfarm project' take place? In its approach to Human Factors, the Applicant frequently use descriptors such as "Short Term". Terms like these must be defined numerically and in relation to the overall project time scale. The Applicant must take into account the number of proposed projects in such a small area when considering the impacts on human health. Not up to date or fact-based assessment. What studies have been done to assess the effect so far of the Applicants announcement last year? 	Local Community Members; Friston Parish Council, SASES	11	Section 27.4 of Chapter 27 Human Health of the ES covers the assessment methodology, including guidance followed, data sources and the approach to impact assessment methodology.
	<p>Impact on human health</p> <ul style="list-style-type: none"> Concern over impact of electromagnetic fields on pacemakers – people may be forced to move because of this danger. Concern over traffic pollution resulting in health impacts. 	Local Community Members; Church of St Mary the Virgin, Friston; Friston Parish Council,	118	Impact assessments have been carried out and will be submitted with the DCO application. The chapter follows World Health Organisation (WHO) definition of health as a state of physical, mental and social wellbeing as well as the absence of infirmity. Further details on what has been assessed can be found within Chapter 27 Human Health of the ES.

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	<ul style="list-style-type: none"> Reduced access to emergency services and healthcare. Lack of consideration shown by the Applicant on how it is causing stress and anxiety leading to ill health. Stress and anxiety due to house sale falling through due to the proposals. Concern over health impact of noise, such as stress and cardiovascular disease. Health impact of vibration (such as stress, potentially leading to or exacerbating disease and health issues). Health impact of dust (such as stress, potentially leading to or exacerbating disease and health issues). Impact on valuable space for health and wellbeing. Health impacts due to cable route near Aldringham Court Care Home, Cold Fair Green Primary School, such as asthma and anxiety. Stress, depression and anger are not 'perceived'. Perceived health risk reducing value of property. Perceived health risk deterring tourism and visitors. Mental and physical health. The cable corridor runs adjacent to Aldringham Court which is a Care Home. The cable route lies immediately adjacent to properties in Fitches Lane and at the entrance to Gypsy Lane. 	SASES; Aldringham-cum-Thorpe Parish Council		<p>The Applicant has made the decision to use High Voltage Alternating Current (HVAC) technology. Within the UK, the frequency of AC mains electricity is 50 hertz (Hz). AC fields are described as Extremely Low Frequency (ELF). When high-voltage underground cables are buried underground, each cable is surrounded by a metal sheath/screen to provide mechanical protection. This also eliminates the electric field outside the cable, but it has no effect on the magnetic field. Large National Grid substations do not produce significant electric fields outside their boundary because the perimeter fence screens the electric field from any sources within the substation. There is equipment inside substations which produces magnetic fields. But the field falls with distance quite rapidly, and by the time a person is at the perimeter fence or a few metres outside it, the magnetic field from inside the substation is usually approaching background levels. Further information on electromagnetic fields can be found in Chapter 27 Human Health of the ES.</p> <p>During construction, where any Public Right of Way (PRoW) requires temporary stopping-up a temporary alternative route for the PRoW will be provided. Once the construction works (or phase of construction works) are complete, the PRoW would be reinstated along its original route. Further detail is provided in the OPRoWS (Document Reference: 8.4). There are two PRoWs in the vicinity of the East Anglia TWO substation and National Grid substation location that will require</p>

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	<ul style="list-style-type: none"> Loss of footpaths could reduce health and wellbeing. Letters received from the Applicant asking for personal information and suggesting that homes may be needed is very difficult for people and is causing stress. Impact on older members of community who choose to move to Friston for the quality of life the village has to offer. Concerns over the impacts on infirm and elderly residents in Almshouses. All of these vulnerable individuals will find the disruption and impacts particularly hard to bear over an extended period of time. Provision of additional electromagnetic fields and radiation shielding over HVAC cables at those places where pedestrians will stand and walk over HVAC cables. Joint boxes should be located well away from (at least 500m from) anyone's home. Transformer should be further away from Friston to mitigate issues relating to the electro-magnetic field. 			<p>permanent diversion. Precise details for the management of each new PRoW, including the specification of the PRoW permanent diversions, will be agreed with the Local Planning Authority (acting on behalf of the local highway authority) through consultation on the final PRoWS prior to commencement of the relevant stage of works.</p> <p>In line with the NPS EN-1 it is considered that proposed East Anglia TWO project has avoided significant impacts for obstruction to health services, Chapter 26 Traffic and Transport of the ES has proposed mitigation in place where impacts are predicted and will put in place measures to effectively manage and control temporary obstruction.</p>
	<p>Human Health Mitigation</p> <ul style="list-style-type: none"> The Applicant should provide health care to construction workers as there is no local capacity. Support for residents distraught by the decisions made. 	Local Community Members; Aldringham-cum-Thorpe Parish Council	5	Proposed embedded mitigation measures for Chapter 27 Human Health of the ES are included in section 27.3.4. The assessment includes the potential impact of the construction works on Aldringham Court, however it is concluded that noise effects are assessed to be not significant for vulnerable groups within the general population.

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	<ul style="list-style-type: none"> Aldringham-cum-Thorpe is a rural area with low traffic density, low noise levels and low light pollution, into which people have moved to retire and enjoy the peaceful countryside. Over 35% of the population are over 65. These proposals will severely impact their quality of life for many years, with the effects of noise greater on the elderly and those who are at home most of the day. The Applicant assessments must correctly reflect the rural environment and mitigate the impacts on human health and wellbeing accordingly. The cable corridor runs adjacent to Aldringham Court which is a Care Home offering up to 45 residents a quiet, peaceful location within a caring community. These projects could significantly disrupt this environment, and every possible action should be taken to adequately mitigate anything that could impact the most vulnerable people in our community. Concerns over the human health of residents in the properties in Fitches Lane and at the entrance to Gypsy Lane, where the cable route lies. Adequate mitigation measures must be put in place to ensure minimum disruption and impact from the work that is carried out. 			Embedded mitigation for noise and vibration is covered in section 26.3.3 of Chapter 26 Noise and Vibration of the ES.

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Offshore Seascape, Landscape and Visual Amenity	<p>PEIR Policy</p> <ul style="list-style-type: none"> Section 28.5.4, Para. 139. NPS EN-1 states that the 'aim should be to avoid compromising the purposes of the designation and that projects should be designed sensitivity'. The consideration therefore is good design and not the precedent set by other schemes. 	NE	1	Embedded mitigation measures which aim to avoid compromising the purposes of the AONB designation is through a revised East Anglia TWO windfarm site layout, as described in section 28.3.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES. Visualisations showing this mitigation (the difference between the East Anglia TWO PEIR and ES Layouts) are presented in Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.
	<p>PEIR Baseline</p> <ul style="list-style-type: none"> NE agrees with the majority of the visual baseline, landscape / seascape baseline and realistic worst case scenario statements; see below for specific details although NE disagree with the characterisation of SCT 06 Offshore Water. NE agrees with the majority of the SLIVA methodology although NE have concerns about elements associated with: <ul style="list-style-type: none"> visibility, reversibility, the consideration of night time effects for urban areas only, the scoping out of the coastal occurrences of some LCTs, the incorporation of maintenance activities into the assessment of the operational phase Note about turbine height and proximity to the coastline of a designated landscape - The last 10 	NE; Suffolk Coast and Heath AONB Partnership; Historic England	20	<p>Agreements on the majority of the baseline and worst-case scenario welcomed and carried into Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendices. Responses/actions taken to address each of the identified concerns (e.g. visibility, reversibility etc) are set out for each point in turn as part of the following responses.</p> <p>The narrative on wind turbine height and proximity to the coastline of designated landscapes are noted and evidence some precedent. At approximately half the height and distance compared to the proposed East Anglia TWO project, the Sheringham Shoal 132m high 3.6MW machines at 17km from the Norfolk Coast AONB provide some precedent for wind turbines of a similar vertical scale experienced from an AONB. The 181m high 6.3MW Galloper wind turbines are also several kilometres closer to the Suffolk Coast and Heaths AONB</p>

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	<p>years has witnessed a significant upscaling of the technology used by the offshore wind energy industry. Over this period turbines have increased both in output capacity and size from the 132m high 3.6MW machines (Sheringham Shoal, Norfolk Coast AONB, closest point to shore 17km) to 181m high 6.3MW machines (Galloper, Suffolk Coast and Heaths AONB; closest point to shore 29.3km), and now the new emerging industry 'standard' of 15MW machines reaching a height of 300m height as proposed for EA2 (closest point to shore 29.6km). This means that capacity has increased nearly fourfold and turbine height has more than doubled. When viewed from the same location, the bigger the structure the greater it's visual prominence. Similarly, the bigger the structure the greater the distance (and geographic spread) from which it can be seen, and the greater the likelihood that individual structures or a collection of them will be prominent within or defining components within a landscape or seascape view. This is especially the case for offshore wind energy turbines and arrays because there is no means to screen them. These facts and basic principles have guided our appraisal of this scheme and the formulating of our comments and advice. NE have also used our experience of and drawn comparisons between previously consented offshore wind energy schemes located in the seascape setting of a designated landscape</p>			<p>than the East Anglia TWO windfarm wind turbines (although of lower blade tip height).</p> <p>Noted that comments are restricted to Seascape Character Types (SCTs) and comments are based on specific SCTs below.</p> <p>Noted that comments are restricted to Landscape Character Types (LCTs) and comments are based on specific LCTs below.</p> <p>Additional assessment of LCT20 Saltmarsh and Intertidal Flats (Orford Ness) and LCT29 Wooded Fen is provided in Table A28.1 in Appendix 28.4 Landscape Assessment, however they remain scoped out of the detailed impact assessment.</p> <p>Agreements on the classification of viewpoints is welcomed and taken forward into Chapter and Appendices. AONB viewpoints are noted, with responses provided below to specific comments on viewpoints/visual effects.</p> <p>Recent UK EIA guidance and the new EIA Directive reaffirms that the anticipated trends in baseline conditions, which would likely transpire due to natural or man-made processes, in the absence of a planned development, require consideration. These are described in section 28.5.4 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p>

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	<p>and EA2 to illustrate the likely influence of this upscaling in technology.</p> <ul style="list-style-type: none"> NE restricts its comments to those SCTs which form the seascape setting of the SCHAONB and within which the EA2 site is located, namely SCT 06 Offshore Waters (para. 98). NE note para. 87 and welcome the clarity this provides. NE restricts its comments to those Suffolk County Council LCTs that make up the SCHAONB and include coastal components within their character. NE accept the reasons for scoping out LCT 25 (for Southwold and Aldeburgh) as set out in 28.3 Table A28.1 p.5 and note the location of 5 viewpoints within this LCT. In order that all LCTs located on the coast of the SCHAONB are included within the SLVIA NE requests that an assessment for LCTs 20 and 29 is undertaken. For LCT 20 and 29 our reasoning is as follows; <ul style="list-style-type: none"> LCT 20 Saltmarsh and Intertidal Flats (Orford Ness only): A portion of this LCT reaches down to the coast and although views out to sea may be obscured by the intervening ridge of shingle, and so do not contribute to the character of this LCT, NE wish to see evidence to confirm this. LCT 29 Wooded Fen (3 separate areas comprising Pottersbridge Marsh, Covehithe Broad and Benacre Broad): Although views out to sea may be obscured by the intervening ridge of shingle and not contribute to the 			<p>Agreement that the study area seascape (and the wider seascape of the southern North Sea) is increasingly characterised by the presence of a number of large offshore windfarms is welcomed.</p> <p>This paragraph of the SLVIA does not state that this makes the changes resulting from the proposed East Anglia TWO project acceptable, but it does offer recognition that it fits with the established approach of 'accommodation' of offshore wind energy development in parts of the study area seascape.</p> <p>Increased reference to the role of SCT06 forming part of the distant seascape setting to the AONB has been added in section 28.6 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity and Appendix 28.3 Seascape Assessment of the ES.</p> <p>In Appendix 28.3 Seascape Assessment of the ES, reference has been added to this characteristic as contributing most to the value of SCT06 and increased from low to medium to reflect the role it plays as part of the wider seascape setting to the AONB.</p> <p>For SCT06 a description of geographic extent has been added to Appendix 28.4 Landscape Assessment of the ES to include reference to offshore visibility extending beyond this SCT.</p>

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	<p>character of this LCT NE wish to see evidence to confirm this. NE do not recognise the description contained in 28.3 Table A28.1 p.6 'substantial intervening screening provided by wooded fen' for this LCT at Covehithe Broad.</p> <ul style="list-style-type: none"> Section 28.5.3, Table 28.7 NE notes the viewpoints listed in this table and their classification as either representative or illustrative. NE are content with how the viewpoints have been classified. NE restricts its comments to those viewpoints which are located within the SCHAONB and are strongly associated with the natural beauty of this area. Section 28.5.4 NE fails to understand the relevance of this section to defining the existing landscape baseline against which the significance of this scheme will be judged. The aims and objectives of the SCHAONB Management Plan (para. 138) focus on the conservation and enhancement of the natural beauty of the designation and will help guide future development. As national planning policy (NPPF para. 170) seeks to limit major development in designated landscapes it is unlikely that the baseline conditions, as they relate to the developed environment, will alter greatly in the forthcoming decades. The exception is Sizewell C, the DCO for which is yet to be submitted. 			<p>Figure 28.15 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES shows an enlarged scale and does not capture the full extent of the SCT, however the full extent of SCT is shown in Figure 28.10 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Agreement on the clarity provided by the AONB special qualities assessment is welcomed (Appendix 28.4, Landscape Assessment of the ES). Assessment of relative wildness and tranquillity have been expanded in section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.4 Landscape Assessment to consider how these aspects could be affected by the construction and operation of the offshore infrastructure.</p> <p>Seascape setting of the AONB added to the baseline description of special qualities in section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.4 Landscape Assessment. It should be noted that seascape setting is not a quality listed in the published Suffolk Coast and Heaths AONB Natural Beauty and Special Qualities Indicators report (LDA 2016), but has been added to the SLVIA baseline based on s42 consultations.</p> <p>The sensitivity of the AONB is assessed in section 28.7 of Chapter 28 Offshore Seascape, Landscape and</p>

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	<ul style="list-style-type: none"> Section 28.5.4, Para. 139 NE accepts the reasoning set out in this paragraph but is concerned about the conclusions drawn. the Applicant is correct in stating that the seascape covered by the study (and the wider seascape of the southern North Sea) is increasingly characterised by the presence of a number of large offshore windfarms. However, NE consider that it is incorrect to assume that the acceptable landscape and seascape change which this has produced sets a precedent for EA2. Section 28.6.3, Para 148 - 153, Table 28.8, App. 28.2, Section 28.2.4, SCT 06 Offshore Waters The narrative fails to note SCT06 forms a part of the distant seascape setting of the SCHAONB. The assessment should acknowledge this and the seascape assessment should be revised accordingly. Please see our comments below regarding para.150 for more details. NE also note that this is described as a 'vast and featureless seascape with an expansive open character with consistent panoramic horizons' (para. 148); the characteristics which contribute most to the natural beauty of the seascape setting of the SCHAONB. Section 28.6.3, Para 148 - 153, Table 28.8; App. 28.2, Section 28.2.4 The inference in para.150 that the seascape setting of the SCHAONB only extends offshore as far as the SCT 03 Nearshore Waters is incorrect. As the evidence on visibility contained in Appendix 28.7 illustrates offshore 			<p>Visual Amenity of the ES and Appendix 28.4 Landscape Assessment of the ES. Conclusions regarding capacity for windfarm development are provided in section 28.13 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Effects on setting of coastal designated heritage assets to be addressed in Chapter 24 Onshore Archaeology and Cultural Heritage of the ES. Photomontages shown in Figures 28.25 – 28.55 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Reference to strategic importance of coastline has been added to baseline description of SCT 06 Offshore Waters in Appendix 28.3 Seascape Assessment of the ES.</p>

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	<p>visibility extends well beyond this SCT and the adjacent SCT (SCT 05 Coastal Waters) and into SCT 06.</p> <ul style="list-style-type: none"> Section 28.6.3, Para 148 - 153, Table 28.8 App. 28.2, Section 28.2.4 NE disagree with the final sentence for the reasons stated in their comments to para.152. NE note that figure 28.15 only shows the western portion of SCT 06, include the full extent. Section 28.7.3.2, para. 169 to 177 The role of the seascape setting of the AONB in shaping and maintaining the special qualities of the area is a vital consideration and component of the SLVIA and a key interest for NE. NE therefore welcome this assessment for the evidence and clarity it provides and believe it will greatly assist the ExA. The judgements contained in the landscape, seascape and visual assessments underpin the assessment of the effect on the special qualities of the SCHAONB as they relate to the setting of the designation. NE accept the logic employed here but advise that more attention is given to how certain special qualities, notably aspects of Relative Tranquillity and Relative Wildness, arise and are experienced by people in areas affected by the scheme. That will provide a better basis for judging the likely significance of effect on human receptors and therefore further aid the ExA. 			

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	<ul style="list-style-type: none"> NE note the detailed assessment in Appendix 28.3 p.32 to 38 and make reference to the information contained in this document below. Table 28.9, Section 28.3, Section 28.2.2 NE note that the seascape setting of has not been explicitly included within the assessment for the Landscape Quality and Scenic Quality special qualities and is not referred to in assessing the Relative Wildness and Relative Tranquillity special qualities. The seascape setting of the SCHAONB is important attribute in defining these special qualities e.g. 'Big Suffolk skies and expansive views offshore emphasis a sense of openness and exposure...' (28.3 p.33) and should therefore be incorporated into this assessment. Para 139 of Chapter 28 for EA2 states that existing windfarms in the coastal waters off Suffolk establishes a precedent for this type of development in this location. Whilst windfarms exist, it does not follow that the coastal waters have further capacity. The current distribution of windfarm development to the north and south of the study area, in fact illustrates the sensitivity of the coast between Kessingland and Felixstowe which is designated as AONB and Heritage Coast and nationally valued. HE note the SLVIA chapters and the viewpoints provided in the associated appendices for EA1N & 2. The primary concern for Historic England is the cumulative impact of the two wind farms in association with other windfarms on a number of 			

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	<p>key coastal designated heritage assets. We note that visualisations and photomontages have been provided which helpfully illustrate a number of these locations, and it is clear there will be some visibility from a number of these assets. The impact will clearly need to be assessed and set out in the ES in relation with reference to the photomontages.</p> <ul style="list-style-type: none"> Section 28.2.1 'SCT 03: Nearshore Waters' within EA2 and EA1N Offshore Windfarm - Appendix 28.2 'Seascape Assessment' details that onshore, to the north and south of the export cable route landfall a "strategically important coastline with numerous fortifications still visible including Napoleonic and Second World War structures and Cold War military establishments" is represented. As such, this (past) strategic importance also connects to the offshore seascape, and to the known and as yet unrecorded heritage assets that lie on the seabed within and close to the proposed development area. Principally those associated with military actions from the First and Second World Wars. 			
	<p>PEIR Methodology</p> <ul style="list-style-type: none"> NE notes and accepts the reasons used to define the study area. "Section 28.3.1, para. 16 and 17 App. 28.1, para. 129 App. 28.7, para. 5 The information and evidence about visibility is important additional information about the character of the seascape 	<p>NE; Suffolk Coast and Heath AONB Partnership; SCC; SCDC (now East Suffolk Council);</p>	62	<p>Agreements on the SLVIA study area is welcomed and carried into Chapter 28 Offshore Seascape, Landscape and Visual Amenity and the Appendices of the ES.</p> <p>Frequency of effect is not a factor in judging the significance of effects assessed for each receptor in the SLVIA, i.e. it does not form part of the magnitude of</p>

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	<p>setting of the SCHAONB and SHC. It is certainly a key factor in defining the worst case scenario for a scheme which requires good visibility with clear views to the horizon as acknowledged at 28.7 para. 4 p1.</p> <ul style="list-style-type: none"> With reference to the Met Office visibility data presented in Plates A28.1 - 3 for Weybourne, A28.4 - 6 for Shoeburyness and commentary in para. 34 p.8-9. Although these places are located some distance away from the study area NE accept that this data provides a useful approximate guide to the probable nature of seaward visibility from the Suffolk coast. It is clear from the data presented that the visibility conditions which occur most frequently (for Weybourne 34% and Shoeburyness 35% of the time) allows for views off-shore which extend to 40km. These views are classified as 'very good'. At its closest point to the AONB coast line EA2 is 29.6km distant, whilst approximately 22 (36%) turbines and potentially 4 other associated structures are located within 40km (numbers derived from measures taken from Figure 28.1). Visibility conditions which are classified as 'excellent' occur at a frequency of 20% and 9% respectively. As would be expected periods of 'very good' and 'excellent' visibility occur most frequently during the summer. Outdoor recreational activity in the SCHAONB (reflected in the visual receptor groups identified in the visual 	Waveney District Council		<p>change assessments, which assume excellent visibility conditions. Observations on potential frequency of effect are provided alongside significance judgements, with agreement from NE that the Met Office data from Weybourne and Shoeburyness provides a useful guide to the probable nature of seaward visibility from the Suffolk coast.</p> <p>The first sentence of section 28.7 paragraph 5 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES is retained as it remains valid - the potential for significant effects to occur will be limited to periods when clear views of the East Anglia TWO windfarm site are available.</p> <p>This paragraph of the SLVIA does not state that this makes the changes resulting from the proposed East Anglia TWO project acceptable, but it does offer recognition that it fits with the established approach of 'accommodation' of offshore wind energy development in parts of the study area seascape.</p> <p>Agreement on judgements of significant visual effects as set out in PEIR is welcomed and taken into Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.5 Visual Assessment of the ES.</p> <p>Sensitivity of beach users and walkers at Sizewell Beach (Viewpoint 10) has been increased to medium in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.5 Visual</p>

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	<p>assessment) is at its peak in the summer months (as acknowledged in 28.1 para. 129 p.44)</p> <ul style="list-style-type: none"> GLVIA3 makes no reference to the frequency of when 'very good' conditions are likely to exist in determining the worst case scenario and as a result frequency is not a factor in judging the significance of effect. NE advises therefore that the statement contained in the first sentence of 28.7 para. 5, although useful in terms of context, is discounted as it is not a factor in judging significance. NE agrees with the statement contained in the second sentence of this paragraph as this is based on the conclusion of the visual assessment" "Section 28.5.4, Para. 139 The landscape referred to in the text covers the entirety of the study area and fails to differentiate between designated and non-designated landscape. NE contend that whilst the landscape change identified may be deemed acceptable for non-designated landscape this does not justify the significant adverse effects predicted for the EA2 on the nationally designated landscape of the SCHAONB." "Viewpoint 3 Covehithe: NE agree with the judgement of significant effects as set out. NE advise that an assessment is also needed for walkers using PROW. Viewpoint 4 Southwold: NE agree with the judgement of significant effects as set out. 			<p>Assessment of the ES (from medium-low in PEIR), however there is clear justification for receptors to be assessed as having a reduced sensitivity from this viewpoint, next to Sizewell Nuclear Power Station, compared to views from other locations (of high sensitivity) in the AONB.</p> <p>This is due the visual amenity that receptors experience at this particular location, which is highly influenced by the visible elements of Sizewell Nuclear Power Station, which includes the presence of the power station itself as well as offshore intake and outfall structures in the nearshore waters looking out to sea towards the East Anglia TWO windfarm site. The assessment presented in the ES remains, on balance, not significant.</p> <p>Provisional agreement on judgements of not significant visual effects as set out in PEIR is welcomed and taken into Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.5 Visual Assessment of the ES.</p> <p>Embedded mitigation measures for the northward spread/cumulative effect is through a revised East Anglia TWO windfarm site layout, as described in section 28.3.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES, which provides mitigation by reducing the lateral/horizontal spread of East Anglia TWO windfarm site, reducing the seascape horizon that would be occupied by wind</p>

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	<ul style="list-style-type: none"> Viewpoint 5 Gun Hill Southwold: NE agree with the judgement of significant effects as set out. Viewpoint 6 Walberswick: NE agree with the judgement of significant effects as set out. Viewpoint 7 Dunwich: NE agree with the judgement of significant effects as set out and advise that an assessment is also needed for users of PROW. Viewpoint 8 Dunwich Heath and Beach: NE agree with the judgement of significant effects as set out (to include visitors Dunwich Heath and Beach (including Coastguard Cottages)). Viewpoint 9 Minsmere Nature Reserve: NE agree with the judgement of significant effects as set out for the receptor groups 'visitors at the car park' and 'walkers using the coastal trail around the scrape'." Viewpoint 10 Sizewell: NE disagree with the judgement of no significant effects as set out. In all other instances the sensitivity of 'beach users' is high; this includes at viewpoints 4, 5, A and D which are either urban or peri-urban in character. NE sees no justification in lowering the sensitivity of this group (and for the group 'walkers on the SCP') on the premise that the presence of Sizewell nuclear power station would reduce the expectations, and hence the sensitivity, of this group. It could be argued that the opportunity to experience an open undeveloped seascape, as an alternative to the nuclear power station, means 			<p>turbines. Visualisations showing this mitigation (the difference between the East Anglia TWO PEIR and ES Layouts) are presented in Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Agreement on judgements of not significant visual effects from Viewpoint 16 (Bawdsey) and significant visual effects from Viewpoint 18 (Orford Ness) as set out in PEIR is welcomed and taken into Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.5 Visual Assessment of the ES.</p> <p>Agreement on judgements of not significant visual effects on Sections 03 and 09 of the Suffolk Coastal Path and provisional agreement of not significant visual effects on Sections 10 and 11 is welcomed and taken forward into Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.5 Visual Assessment of the ES.</p> <p>Agreement on judgements of significant visual effects on parts of Sections 04, 06, 08 is welcomed and taken forward into Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.5 Visual Assessment of the ES.</p> <p>Disagreements with judgements on significance of visual effects on Sections 05, 06, 07 have been reviewed. A short 1.9km stretch of Section 05 between Walberswick</p>

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	<p>that such views are valued more by receptor groups in this location.</p> <ul style="list-style-type: none"> "Viewpoint 11 Coastal Path between Thorpeness and Sizewell: NE agree with the judgement of significant effect as set out. Viewpoint 12 Thorpeness: NE agree with the judgement of significant effects as set out. Viewpoint 13 Aldeburgh: NE agree with the judgement of significant effects as set out." Viewpoint 15 Shingle Street: NE provisionally agree with the judgement of no significant effects as set out and will seek to confirm this in our definitive advice in our Relevant Representation. Although the distance to the array from this LCT is over 40km NE are concerned that the increase in horizontal spread has not been factored into the scale of change component of the assessment, which is currently considered to be low. NE agree that the offshore winds farms already present in the seascape (Gallopier, Greater Gabbard, London Array and Gunfleet Sands I, II and III) are prevalent in the baseline and would appear from the figures 28.40 b and c to occupy approximately 30% of the available seascape horizon (approximately 180 degrees). The EA2 proposal would extend this horizontal spread by a further 17% meaning that 47% of the available seascape horizon would be occupied by wind turbines. "Viewpoint 16 Bawdsey: NE agree with the judgement of no significant effects as set out (to include visitors to Bawdsey Point). 			<p>and Dunwich Forest has been re-assessed as significant.</p> <p>Section 06 is heavily wooded through Dunwich Forest with limited visibility. The effects remain not significant with the exception of the 1km stretch near the Coastguard Cottages, as assessed in the ES. In line with previous comments about the sensitivity of visual receptors at Viewpoint 10, the sensitivity of the stretch of the Suffolk Coastal Path that passes directly alongside Sizewell Nuclear Power Station has been assessed as having a reduced (medium) sensitivity than other sections of the Suffolk Coastal Path. Full extent of the AONB is shown in Figure 28.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and the extent to which it lies within the 50km study area. Figure 28.18 (of Chapter 28) shows the AONB on the Zone of Theoretical Visibility (ZTV). Figure 28.21d (of Chapter 28) shows it cumulatively with East Anglia ONE North. AONB shown in viewpoint location map Figures 28.25-28.54 (of Chapter 28).</p> <p>Representative and illustrative viewpoints were selected and agreed in consultation with Expert Topic Group, covering regular and representative locations along the AONB coastline. There are two viewpoints within 2km of North Warren at Aldeburgh and Thorpeness (Viewpoint 12 and 13). Although further viewpoints are not required to form a judgement on the likely significant effects of</p>

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	<ul style="list-style-type: none"> Viewpoint 18 Orford Ness: NE agree with the judgement of significant effects as set out. "28.8.3.5 para.205 and 208 and Table 28.12 p.86 – 87 App. 28.5 Comments on Visual Assessment – Suffolk Coastal Path Section 03 Kessingland to Reydon: NE agree with the judgement of no significant effects as set out. Section 04 Southwold: NE agree with the judgement of significant effects as set out. Section 05 Walberswick and Corporation Marshes: NE disagree with the judgement of not significant effects as set out. See our comments at point 22 Viewpoint 6. Section 06 Dunwich Forest and Heath: NE agree with the judgement of significant effects but disagree with the judgement of no significant effects as set out. See our comments at point 22 for Viewpoints 7 and 8. Section 07 Minsmere and Sizewell: NE disagree with the judgement of no significant effects as set out. Figure 28.23a clearly shows that from a significant portion of the path within this section EA2 will be visible with the predicted number of blade tips being visible in the banding 51 to 60. The commentary on p.20 also stated that the development will be visible from 3.6km of this 6.1km section (59%). NE disagree with the assertion on p.21 that the sensitivity and magnitude of change is reduced due to the presence of the Sizewell nuclear power station. 			<p>the proposed East Anglia TWO and East Anglia ONE North projects), illustrative wireline viewpoints have been provided from North Warren (Figure 28.54 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES) and River Ore (Figure 28.55 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES).</p> <p>Noted. Corrected in landscape character types shown in Figure 28.17a-g of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Noted regarding Figure 28.25 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES, this has been corrected.</p> <p>The proposed East Anglia TWO and East Anglia ONE North projects have a different number of wind turbines (up to 75 and 67 respectively), so the PEIR categories reflected this difference.</p> <p>Figures 28.5, 28.6, 28.7, 28.15 – 28.19 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES have been updated to show consistent number of turbines in each ZTV category for each project (e.g. 1-10, 11-20, 21-30 turbines etc).</p> <p>The wind turbine layouts for the proposed East Anglia ONE North and East Anglia TWO projects are shown in Figure 28.21d and Figures 28.25-28.54 of Chapter 28</p>

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	<p>See also our comments at point 22 Viewpoints 9 and 10.</p> <ul style="list-style-type: none"> Section 08 Thorpeness: NE agree with the judgement of significant effects as set out. Section 09 Aldeburgh to Boyton Marshes: NE agree with the judgement of no significant effects as set out. Section 10 Boyton Marshes and Orford Beach: NE provisionally agree with the judgement of no significant effects as set out. See our comments at point 22 for Viewpoint 15. Section 11 Shingle Street to Bawdsey: NE provisionally agree with the judgement of no significant effects as set out. See our comments at point 22 for Viewpoint 15. NE note the statement in the second sentence of para. 208 and welcome this for acknowledging the potential significant effect of sequential views of the same development whilst walking a linear route and note section 28.3 on p.32 of 28.5 NE sets out to judge the significance of the effect on the SCP when taken considered in its entirety. NE consider that for 6 of the 9 sections of the path located within the SCHAONB the effect of the EA2 scheme on users of the path will be significant. NE reserve judgement on 2 other sections and will confirm our advice at the Relevant Representation stage following further site visits. These significant effects will adversely affect the visual amenity afforded in seaward views available from the SCP and will also 			<p>Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>The Suffolk County LCA is referred to in section 28.5.2 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES 'The Suffolk County Council Landscape Character Assessment (Suffolk County Council, 2008/2011) define the baseline for the Suffolk section of the SLVIA study area'.</p> <p>Points regarding paragraph 32 of Appendix 28.2 SLVIA Methodology of the ES have been addressed in this appendix and summarised in section 28.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES. Assessments made in Appendix 28.4 Landscape Assessment and in section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>The intermediate categories 'medium-high' and 'medium-low' magnitude of change are not described in Table A28.3 in Appendix 28.2 SLVIA Methodology of the ES but should be read as sitting between the descriptions of High, Medium and Low magnitude of change. Use of intermediate categories is accepted in LVIA practice and accords with guidance. Intermediate descriptions have been removed from Table A28.7 (of Appendix 28.2 SLVIA Methodology of the ES) to be consistent with</p>

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	<p>adversely affect some of the special qualities of the AONB designation. This will also be counter to the purposes of the SHC namely to 'conserve protect and enhance the coast...' and 'to facilitate and enhance their enjoyment...by the public'.</p> <ul style="list-style-type: none"> To better understand the effect on users of the SCP within the SCHAONB NE request that an assessment for these sections, are undertaken as a whole in the ES. NE therefore offer no comment at this time on the judgement of no significant effects as set out in para. 5 and in the associated table p.32 to 36. None of the drawings show the entire AONB. A plan showing the full extent of the AONB would help to highlight the extent to which the AONB is a coastal AONB, the extent to which it lies within 50km of the proposed developments and its narrowness. Given the importance of the Suffolk Coast & Heaths AONB, the boundary of the designation should be shown on landscape character, Zone of Theoretical Visibility (ZTV), including cumulative ZTVs, and viewpoint maps to enable the reader to identify those landscape areas and viewpoints, which are relevant to the AONB. There are a number of Landscape Character Types (LCTs) where landscape effects are identified but no representative viewpoint is provided. Viewpoints for example from North Warren (LCT 7d) or from river flood defence 			<p>Table 28.2 (of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES).</p> <p>The SLVIA does not identify any levels of 'high' magnitude change to key characteristics / special qualities of the AONB, as set out in section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.4 Landscape Assessment of the ES.</p> <p>Table A28.6 of Appendix 28.2 SLVIA Methodology of the ES also set outs other factors which may reduce relative value or susceptibility to change, depending on the specific receptors and their activity. In many other instances, visual receptors at coastal viewpoints, especially residents, are assessed as high (e.g. Viewpoints 3, 4, 6 and 7).</p> <p>The assessment in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES has been changed to accommodate increase in sensitivity to 'high' of AONB users of the foreshore engaged in enjoyment of the environment and coast.</p> <p>The intermediate categories 'medium-high' and 'medium-low' magnitude of change are not described in Table A28.3 in Appendix 28.2 SLVIA Methodology of the ES but should be read as sitting between the descriptions of High, Medium and Low magnitude of change. Use of</p>

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	<p>embankments adjacent to the River Ore (LCT 6e) would be informative.</p> <ul style="list-style-type: none"> Figure 28.17 illustrates the landscape character types and their local subdivision. However not all the local areas are clearly marked on this plan (e.g. 7c and 6e are missing) making cross reference with the assessment tables for landscape impacts difficult. Furthermore LCT 8 is marked as a, b, c on the plan but referred to as 1, 2 and 3 in the report. Figure 28.25 for EA2 is a useful drawing as it summaries the significant effects of the scheme on the coastal landscapes. However, LCT 7a is considered to experience significant effects, of which Easton Bavents is a part, and yet this latter area is not shaded in on this plan. Furthermore, the colours used are misleading as the significant effects on seascape are shown as a yellow hatch not pink/red, the yellow hatch being similar in colour to the AONB designation. On the ZTV drawings the categories for number of turbines visible is not the same for EA1N and EA2 making comparison between each scheme more difficult. The figures showing cumulative effects of EA1N and EA2 should show the turbine layouts of both schemes. Para 16 of Appendix 28.1 (methodology) makes no reference to the Suffolk County Landscape Character Assessment although this is the 			<p>intermediate categories is accepted in LVIA practice and accords with guidance. Intermediate descriptions removed from Table A28.7 in Appendix 28.2 SLVIA Methodology of the ES to be consistent with Table 28.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>The AONB management plan describes the AONB as having 'few commanding viewpoints' (paragraph 1.8.2), to which the SLVIA has referred. The SLVIA does recognise throughout the opportunities for long distance and panoramic views including out to sea.</p> <p>The value of these four key landscape types of the AONB has been increased to 'high' in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.4 Landscape Assessment of the ES.</p> <p>The susceptibility of LCT5 (and other LCTs) has been assessed based on the specific nature of the proposed East Anglia TWO project (as recommended in GLVIA3), which includes (among other factors) its location at long distance offshore. The susceptibility of LCTs has been systematically reviewed, with some updates made in assessments in Appendix 28.4 Landscape Assessment of the ES, particularly on localised coastal portions of LCTs such as the Coastal Levels LCT.</p>

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	<p>assessment used to determine landscape and AONB effects.</p> <ul style="list-style-type: none"> Para 32 of Appendix 28.1 sets out considerations in assessing susceptibility i.e. the ability of a defined landscape receptor to accommodate the specific proposed development without undue negative consequences¹. The assessment makes particular reference to the specific nature of development, seascape/landscape character and association. A number of observations can be made: <ul style="list-style-type: none"> Where the specific nature of the development helps in understanding susceptibility, all aspects should be considered rather than drawing attention to one element of a scheme i.e. distance from the coast. Where the influence of existing development influences susceptibility it should not be based on the simple presence or absence of development but the nature and influence of that development on character. When considering association, especially association between coastal landscape and the sea, visibility of open water is not be necessary for a strong association to still exist. The definition of categories of 'magnitude of change' appear inconsistent. Para 15 of the methodology assessment indicates the use of 6 			<p>The susceptibility of LCT 5 has been changed to high (detailed in Appendix 28.4 Landscape Assessment of the ES).</p> <p>The susceptibility of LCT 6 has been changed to medium (detailed in Appendix 28.4 Landscape Assessment of the ES).</p> <p>Noted regarding agreement with LCT 7 medium susceptibility.</p> <p>Viewpoint 10: The scenic quality is influenced by Sizewell A and B, and offshore intake/outfall structures in the nearshore waters. The sensitivity of the receptors at Sizewell Beach should be lower than other viewpoints in the AONB, on account of the immediate influence of Sizewell A and B at this viewpoint and the nearby stretches of the Suffolk Coastal Path. The SLVIA needs to recognise differences in sensitivity at different locations within the AONB and this is one example where the sensitivity of visual receptors is lower than other, more remote and less developed locations. Sensitivity has been increased to medium (from medium-low) but is not high. The effect remains as not significant with a medium magnitude of change.</p> <p>Viewpoint 14: Sensitivity of receptors increased to high, however there are a number of mitigating factors which are explained in the SLVIA which result in the medium-low magnitude and not significant effect assessed.</p>

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	<p>categories in assessing the magnitude of change and yet table A28.3 has only 4 (not including 'none'). Definition is provided for the intermediate scales Medium-High or Low-Medium for landscape effects although they are provided in relation to magnitude of change for visual effects, table A28.7, page 24.</p> <ul style="list-style-type: none"> Page 13 of Appendix 28.1 sets out a series of bullets to assist with determining the size/scale of change. The third bullet makes reference to the presence of existing windfarm development which is considered to reduce the magnitude of change, if there is a level of integration, and developments form a unified and cohesive feature. However, this is unlikely to occur in the context of large scale off shore windfarms which cover a significant area of the horizon, and especially so, along a designated coastline valued for its relationship with the open sea and unfettered skylines. In these circumstances existing windfarm development may already impinge on coastal character and special qualities. When combined with the proposed development, the increased spread and prevalence of this form of development can give rise to a high magnitude of change to key characteristics and special qualities. The sensitivity of views appears to have been underestimated. Table A28.6 sets out that views within a designated landscape have a higher sensitivity. The views along the coast are known to be of high scenic quality reflected in the AONB 			<p>Significance of effects is assessed in detail in Appendix 28.4 Landscape Assessment of the ES across different LCTs within the AONB to form an assessment of the geographic extent of effects on its landscape character.</p> <p>England Coastal Path proposals to incorporate the Suffolk Coastal Path will be finalised and published in autumn 2019 and the new access is expected to be ready in 2020. In the meantime, the SLVIA assesses effects on users of the Suffolk Coastal Path.</p> <p>Cultural Heritage settings assessment provided in Chapter 24 Onshore Archaeology and Cultural Heritage of the ES (and is not part of SLVIA).</p> <p>Agreement that the scope of assessments is acceptable is welcomed.</p> <p>The simple composition of sea views is referred to throughout the SLVIA (Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.5 of Visual Assessment of the ES). Further assessment has been added to Appendices 28.3, 28.4, 28.5 and Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES to address comments on the contribution that the 'uncluttered' seascape makes to the landscape, visual amenity and AONB special qualities. Although the open horizons and simple composition of the seascape setting is acknowledged as being a valued element of the seascape setting of the</p>

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	<p>designation and users of the foreshore are engaged in enjoyment of the natural environment and sea views. On this basis viewpoints from the foreshore for users of the natural environment would be expected to be high yet in many instances they are categorised as Medium-High e.g. Viewpoints 6, 7, and 18.</p> <ul style="list-style-type: none"> It is noted in para 14 that the different categories of magnitude of change again comprises four not six as highlighted in para 3.4.3 above. Throughout the documentation the AONB is referred to as having few commanding viewpoints. This is considered misleading as the coastline has many extensive open and exhilarating long views up and down the coast as well as out to sea despite its low elevation. There are concerns regarding the assessment of the value of the four key landscapes types where they occur within the AONB. All four landscape types comprise notable areas of the AONB coast. As such these areas, where they fall within the AONB should have a high value as a result of the designation, their scenic quality and perceptual/experiential aspects as defined in Appendix 28.1 pages 9-10. Page 12 of Appendix 28.3 describes susceptibility of landscape type 5 Coastal Dunes and Shingle Ridges and makes reference to the distance of the proposed development from the coast to imply susceptibility is tempered. This is misleading for two reasons – firstly the nature of offshore 			<p>AONB, the seascape setting/sea views are not entirely uncluttered, with numerous large vessels and clutter created by existing offshEA2 wiore wind turbines at Greater Gabbard and Galloper. The Suffolk Coast and Heaths AONB Natural Beauty and Special Qualities Indicators report (LDA 2016) acknowledges this clutter <i>'Offshore wind turbines at Greater Gabbard, Galloper and the more distant London Array are visible from some stretches of the coastline. These create a cluttered horizon and, like the large scale elements onshore, also divide opinion'</i>.</p> <p>Sizewell A and B clearly have an influence on the baseline conditions, particularly in the localised area of the AONB near Sizewell, but more widely the Nuclear Power Station is visible from the north along the coastline and has a pervasive and distinctive influence in the backdrop to parts of the AONB coastline. It is considered that the SLVIA applies appropriate weight to the influence of Sizewell A and B. There is clear justification for landscape and visual receptors in close proximity to Sizewell to be assessed as having a reduced (generally medium) sensitivity, just as there is justification for other locations with less developed/remote/wild character in the AONB to be considered of high sensitivity. The SLVIA recognises these differences in sensitivity of different locations within the AONB and assesses the magnitude of change arising from the proposed East Anglia TWO project in this context.</p>

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	<p>windfarm development is to introduce vertical elements within the seascape, therefore reference should also be made to height of turbines and lateral spread. To refer to distance alone downplays the susceptibility of the landscape to this type of development and runs the risk of double counting elements of the proposals which are taken in account during an assessment of magnitude of change.</p> <ul style="list-style-type: none"> LCT 5 is considered to have a high susceptibility due to its direct association with the open sea which forms a setting to the landscape and on account of the high exposure of this type to the proposed development. LCT6 is considered to have a medium susceptibility due to the openness of this landscape, its strong association with the sea and the simple, unfettered skylines and open horizons. This landscape is not considered to be visually contained and is susceptible to vertical structures breaking the skyline, even where there are no direct views of the sea. Furthermore, there are parts of this landscape which contain raised flood defences along river channels from which there are elevated views out to sea and along the coast. It is agreed that LCT 7 has a medium susceptibility at the coast. This landscape forms an important backdrop to low lying coastal areas and has views out to sea across these areas. As a result, this landscape has an association with 			<p>Appendix 28.4 Landscape Assessment and section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES include an expanded baseline description of relative wildness aspects of special qualities, with reference to seascape setting. There are only 'pockets of relative wildness associated with coast' as stated in Suffolk Coast and Heaths AONB Natural Beauty and Special Qualities Indicators report (LDA 2016), 'in this largely farmed and settled landscape. Assessment of relative wildness have been expanded in Appendix 28.4 Landscape Assessment and section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES to consider how these aspects could be affected by the construction and operation of the offshore infrastructure. Significant effects on pockets of relative wildness associated with the coast added to the assessment e.g. coastal parts of Coastal Levels LCT06 and Estate Sandlands LCT07 within the AONB.</p> <p>Section 28.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES in Appendix 28.6 Suffolk Coastal Path Assessment considers effects on users of the Suffolk Coast Path walking longer distances that may become significant when experienced sequentially.</p>

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	<p>the coast, and strong aesthetic qualities making it susceptible to the proposed development.</p> <ul style="list-style-type: none"> In a number of places, the susceptibility and thus sensitivity of visual receptors is considered to have been underestimated. Where visual receptors are engaged in the natural environment (as many are when visiting the AONB), and where views are focused on the coastline and out to sea, (as many are when visiting the coastal parts of the AONB), sensitivity is regarded as high. On this basis, there are concerns regarding the assessment of a number of viewpoints such as Viewpoint 10 and 14. The sensitivity of Viewpoint 10 is assessed as medium to low on account of the influence of Sizewell A and B. However, directional views for most people visiting the area are out to sea and along the coast, where scenic quality is high, despite the presence of Sizewell. This is a popular viewpoint with facilities, where walkers and tourist come to enjoy the coastal landscape. The sensitivity of visual receptors is considered to be high and effects significant. Similarly, for Viewpoint 14 the sensitivity of the visual receptor is considered to be high on account of the historic promoted viewpoint, and importance of the view in understanding and enjoying a key cultural heritage asset of the AONB. With the magnitude of change being medium-low the effects are also considered to be significant. 			

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	<ul style="list-style-type: none"> The SLVIA included a detailed assessment of the effects on the Suffolk Coast Path. Para 208 of Chapter 28 highlights that the repeated exposure to the proposed windfarm can lead to significant effects. The same must equally apply to the wider AONB. The England Coast Path is being developed for this section of coast by NE and will adopt the Suffolk Coast Path for some of its length but in places provide new sections which focus more specifically on the coast and on enjoyment of sea views. This means that in future the effects of the proposed development on coastal paths is likely to be greater than has been assessed. There appears to be no assessment of the effects of the proposed windfarm on cultural heritage interest, including cultural associations. This is an important oversight as cultural heritage forms a key component of the AONB comprising many historic sites along the coast. Frequently historic sites and assets comprise singular vertical structures which contrast with the otherwise strongly linear and horizontal landscape e.g. Orford Ness or Southwold Lighthouses, Orford Castle or Martello towers. These historic assets, many of which are listed, depend upon the open sea to give them significance and meaning. Similarly, no reference is made to cultural associations including works of art, that like heritage assets, may depend on the seascape 			

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	<p>setting for their context and aesthetic qualities e.g. The Clam.</p> <ul style="list-style-type: none"> • "Although the scope of assessments is acceptable the Councils consider that further work is required in relation to the identification of significant effects. The Councils have particular concerns regarding the following: <ul style="list-style-type: none"> ○ The assessments do not give sufficient weight to the contribution the current uncluttered seascape makes to the condition and character of the coastal landscape and its visual amenity. ○ The assessments do not give sufficient weight to the contribution the current uncluttered seascape makes to the setting, character and special qualities of the AONB." • Undue weight given to the effect on the baseline conditions of the existing Gabbard and Galloper arrays and the consequent impacts on the assigned magnitude of change and susceptibility of receptors. • The undue and potentially inappropriate weight given to the effect on the baseline conditions of Sizewell A and B developments and the consequent impacts on the assigned magnitude of change and susceptibility of receptors. • The apparent lack of recognition of the impacts of the proposals on "wildness" as a special quality of the AONB. 			

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	<ul style="list-style-type: none"> The requirement identified by the Applicant for further work in respect of the accumulation of non-significant impacts on users of the Suffolk Coast Path that over longer distances may become significant. 			
	<p>PEIR Impacts</p> <ul style="list-style-type: none"> The AONB Partnership notes that the concluding paragraph of the PEIR chapter states that EA2 will have significant seascape, landscape and visual effects on the character of some inshore seascape and coastal edge landscape at the local and regional scale. The conclusion in EA2 Chapter 28 para 161 that only LCTs 05 and 07 are affected is questioned. Whilst types 06 and 08 may not be visually connected to the sea the presence of the sea and coastal location of these landscape remains perceptible not least because of the sense of openness beyond the type. In places the turbines will break the skyline, their vertical form in a horizontal landscape, and their movement, will intrude on these landscapes. The visual intrusion of turbines into these landscapes, as indicated on the ZTV, has been underestimated. Therefore, a more substantial part of the coastal stretches of the AONB is likely to be adversely affected by the proposed windfarm development. 	<p>Suffolk Coast and Heath AONB Partnership; Suffolk Preservation Society; NE; SCC; SCDC (now East Suffolk Council); National Trust</p>	76	<p>Effects on inshore seascape and coastal edge landscape assessed in sections 28.6, 28.7 and 28.8 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.3 (Seascape Assessment) and Appendix 28.4 (Landscape Assessment) of the ES.</p> <p>Assessments of LCT 06 and 08 have been updated in section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.4 Landscape Assessment of the ES with finer granularity of assessment and consideration of the coastal portions of these LCTs.</p> <p>Sea views are not entirely unfettered, with numerous large vessels and clutter created by existing offshore wind turbines at Greater Gabbard and Galloper (as stated in the AONB special qualities report). Further narrative text has been added within Chapter 28 to describe the link between land and sea/simplicity of landscape elements of land/sea/sky at the coast.</p>

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	<ul style="list-style-type: none"> Para 162 of EA2 Chapter 28 missed the inextricable link between the land and sea which is fundamental to the special qualities and enjoyment of the AONB. The open, unfettered sea views, their expansive and natural qualities are highly susceptible to the introduction of vertical structures which will stretch for c. 30km. The proposed development may be sited some distance from the coast but the degree of impact is also dependant on the height of the structures and the value placed on the open, wild and natural characteristics of the sea and the extent to which this gives rise to special qualities along the coast. The Technical Summary at para 161 states that the wind turbines are likely to only be visible to the public 33% of the time under conditions of excellent visibility. Clarification is required on whether this refers to all daylight hours and whether this will vary throughout the year. In addition, this likely period of visibility must also be taken in context of the public wishing to benefit from and enjoy this seascape character during the same periods of 'excellent visibility' rather than periods of poorer visibility. Therefore, the actual resulting impact will be much greater than just the proportion of time of visibility. It is essential that the assertions over the visibility of the turbines from the coast, made in the technical summary, can be fully evidenced. At an early engagement meeting SPS was specifically 			<p>The figures quoted are based on Met Office visibility data, which is provided in Appendix 28.8 Offshore Windfarm Visibility of the ES and includes seasonal variation in Plate A28.3. It is noted that visual impacts are likely to be experienced by a greater number of people during periods of excellent visibility (than periods of poor visibility for example), however this does not change the findings presented from this Met Office data.</p> <p>The evidenced is provided by Met Office visibility data in Appendix 28.8 Offshore Windfarm Visibility of the ES. Significant peripheral wind turbines will be lit with red, medium intensity aviation warning lights as required by legislation and described in section 28.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Embedded mitigation measures for the northward spread in the form of a revised East Anglia TWO windfarm site layout, as described in section 28.3.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES. The size of the 300m blade tip height turbines shown in the photomontages (Figures 28.25 - 28.54) are worst-case for SLVIA. Visualisations showing this mitigation (the difference between the East Anglia TWO PEIR and ES Layouts) are presented in Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p>

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	<p>advised by the Applicant that the offshore array would not be illuminated other than on the four outer corners of the windfarm. However, the visualisations clearly show that all turbines are illuminated, LVIA chapter 28, Visualisations Viewpoint 4 Southwold figure 28.29g, Viewpoint 2 Kessingland Beach figure 28.27f and Viewpoint 1 Lowestoft figure 28.26f. Based on these visualisations and the wording within chapter 6 para 6.5.5 it is fair to conclude that the lighting will be on throughout all hours of darkness, 'flashing simultaneously' and creating what can only be described as a potential 'seaside illumination' effect where there is currently none. Clarification is required regarding the hours and style of illumination.</p> <ul style="list-style-type: none"> NE has two principal concerns about the predicted significant adverse effects of the proposed EA2 scheme on the seascape setting and statutory purposes of the Suffolk Coast and Heaths AONB (and associated Suffolk Heritage Coast). Firstly, the size (height and mass) of the turbines proposed in both the worst case scenario and alternative technology options is significantly greater than NE have been presented with for other offshore wind energy schemes affecting a National Park or AONB. Secondly the northward geographic spread of the array, combined with the cumulative effects of EA2 and the EA1N proposal will result in turbines occupying the majority of the seaward horizon of the AONB. 			<p>Agreements on the majority of the judgements on the significance of effects are welcomed. Responses/actions taken to address each point of disagreement are set out for each in turn as part of the following responses.</p> <p>Conclusions in section 28.13 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES have been expanded to reflect the narrative and judgements contained within the SLVIA.</p> <p>The Bureau of Ocean Energy Management study is referenced in the SLVIA, which sets out all the windfarms considered in this report, available at: http://visualimpact.anl.gov/offshorevitd/</p> <p>As stated in Appendix 28.8 Offshore Windfarm Visibility of the ES, the study does not attempt to assess whether potential visibility would be significant or not (or the sensitivity of receptors) but it provides a useful aid to ascertaining the likely potential for visibility of existing offshore windfarms at various distances.</p> <p>The frequency of effect derived from the Met Office data in Appendix 28.8 Offshore Windfarm Visibility of the ES is provided alongside significance judgements in the SLVIA.</p> <p>The fundamental point made in the SLVIA in section 28.3.2 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES remains the same regardless of wind turbine height, i.e. that siting offshore windfarms at long distance offshore from designated</p>

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	<ul style="list-style-type: none"> NE agrees with the majority of the judgements on the significance of effects as detailed in the SLVIA but disagrees with a number of them. NE is concerned that the summary and conclusion presented do not accurately reflect the narrative and judgements contained within the SLVIA. App 28.7, para. 7, 11 and 19 NE also offer the following comments; Para. 7. NE note the reference to windfarms in the English Channel in the final sentence and understand that the report was published in 2012 with fieldwork presumably being undertaken in 2011. In 2011 there were no windfarms located in the English Channel; the first and only such scheme located in the English Channel to date is Rampion, the construction of which commenced in 2015. Clarification of the actual windfarms included in the quoted study would therefore be helpful. Para. 11. NE note that the maximum height of the turbines included in the study quoted is 153m whereas the EA2 turbines used in the worst case realistic scenario are 98% taller. Consequently, whilst this study is of interest to NE, we fail to understand how it relates to the sensitivity of the visual receptor groups used in the Visual Impact Assessment. In para. 19 NE note the reference to horizontal extent and agree with this statement and the final sentence. NE would like to see the relationship between visual receptors and visibility articulated more fully in the Visual Impact 			<p>coastal landscapes will help to mitigate potential landscape and visual impacts.</p> <p>The ES assesses operational effects as long-term (and reversible). No changes have been made to 'reversible' effect assessments made in the PEIR. Fundamentally, the seascape, landscape and visual effects of the operation of the offshore infrastructure are reversible (they can be removed without irreversible effects); even if they are present for a period of greater than 25 years.</p> <p>The effects of the aviation lighting of the wind turbines on people at night are assessed as visual effects (not landscape effects). Night-time lighting will not affect the perception of landscape character. The character of the landscape is not readily perceived at night in darkness, particularly in rural areas. While aviation lighting will be visible from the shore and result in visual effects, as assessed in the SLVIA, it will not result in changes to the character of the landscape. Visual assessment of night-time visual effects is undertaken for the receptor group 'beach users' in the visual impact assessment in Appendix 28.5 Visual Assessment of the ES.</p> <p>Noted regarding the SLVIA including an assessment of the likely effects of the scheme on the special characteristics and qualities of the SCHAONB and included in Appendix 28.4 Landscape Assessment of the ES.</p>

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	<p>Assessment in order to better understand the relevance of appendix 28.7.</p> <ul style="list-style-type: none"> "section 28.3.2, para. 42 NE note the reference to the Round 3 SEA and the siting of turbines outside of territorial waters and the further reference to the distance of 13km off the coast of a designated landscape and/ or Heritage Coast. NE understand the latter to originate in the 2006 DTi Guidance. NE note that the when the Round 3 SEA was undertaken c. 2010 the 'industry standard' turbine i.e. those then being installed and/ or planned for was up to 200m whilst in the 2006 this 'standard' was 132m. The heights of the turbines used to define the EA1N worst case scenario for are respectively 50% and 225% taller." "Section 28.4.3.8, para. 66 and 67 Throughout the landscape, seascape and visual assessments frequent reference is made to the reversibility of the scheme. However, at no point is reference to the lifespan of the scheme and nor a date proposed when reversibility will be enacted. In order to better understand when these aspects of the scheme it would be helpful if the ES could contain such information. The majority of SLVIAs reviewed by NE provide an approximate indication of the operational phase of the scheme; for a nuclear power station this would typically be 60 years. Our experience of other windfarms would suggest that a minimum operational lifespan of at least 25 years, which is 			<p>Galloper is largely located behind/subsumed behind the Greater Gabbard wind farm, which is the primary reason for assessments of minor and therefore not significant visual effects in the Galloper ES. The combined effect of Galloper and Greater Gabbard is greater, particularly on some of the southern and closest areas of the AONB between Orford Ness and Bawdsey, e.g. Viewpoint 18 (Figure 28.43b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES) where the vertical scale of the closer Greater Gabbard/Galloper wind turbines (from 25km) appears similar to the East Anglia TWO windfarm site and occupies a wider lateral spread on the skyline. There are areas of the AONB where the effects of the combined Greater Gabbard/Galloper windfarms are comparable to those predicted for East Anglia TWO. While these effects of Greater Gabbard/Galloper may not have significant adverse effects on the statutory purposes of the SCHAONB, there is clearly an offshore windfarm influence in the seascape setting of the AONB. This is recognised in the AONB special qualities report as creating 'clutter' on the visual horizon. Embedded mitigation measures for the northward spread/cumulative effect is through a revised East Anglia TWO windfarm site layout, as described in section 28.3.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES. Visualisations showing this mitigation (the difference between the East Anglia TWO PEIR and ES Layouts) are presented in</p>

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	<p>usually followed by an application to repower the scheme with updated technology, to be typical.</p> <ul style="list-style-type: none"> GLIVA3 states that effects lasting longer than 10 years are long term in duration and so the significant adverse effects predicated by the EA1N SLVIA are long term in duration. Consequently, the references to reversibility in the assessments, although helpful in indicating that one day the array maybe decommissioned and the infrastructure removed, are of lesser relevance in defining the significance of the effects." "NE is unsure as to why the assessment of night time effects has been restricted to LCT 25, which only affects the urban areas of Southwold and Aldeburgh. Dark skies are an important component of the character of the SCHAONB coast line and it is clear from the figures 28.29g and 28.38f that the aviation navigational lighting affixed to EA2 has the potential to adversely affect this. Our experience of other OWF suggests that aviation navigational lighting is a conspicuous feature when viewed from the shore and that atmospheric conditions such as sea fog can actually amplify it's influence. Therefore, NE wish to see an assessment of the effects of night time of navigational lighting on the following LCTs: <ul style="list-style-type: none"> LCT 05 Coastal Dunes and Shingle Ridges (Areas C, D and E only) 			<p>Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Maintenance activities have now been included within the operational effects assessments in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendices 28.3-28.7 of the ES.</p> <p>Agreement that the character of SCT06 is shaped by considerable human activity is welcomed. This is noted in the key characteristics of SCT06 in the Suffolk, North Essex and South Norfolk Seascape Assessment and adopted in the SLVIA baseline description of this SCT. Although the onshore visual influence is only from Greater Gabbard/Galloper, it is a fact that there are 3 operational offshore windfarms located in this SCT (Figure 28.10 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES) and East Anglia THREE is also consented. In the offshore context of the SCT, these operational windfarms form characteristic elements, regardless of whether they are viewed from the coast, as they are part of the pattern of elements in the SCT and they are visible to receptors offshore.</p> <p>The assessments of SCT06 in section 28.6 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.3 Seascape Assessment of the ES have been updated to clarify the onshore visual influence of these windfarms in SCT06 have on the setting of the AONB.</p>

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	<ul style="list-style-type: none"> ○ LCT 06 Coastal Levels (Areas B, C, D and E) ○ LCT 07 Estate Sandlands (Areas A, B, C and D) ○ LCT 08 Open Coastal Fens (Areas 1, 2 and 3) ○ LCT 20 Saltmarsh and Intertidal Flats (Ordford Ness only) ○ LCT 25 Urban (Aldeburgh and Southwold) ○ LCT 29 Wooded Fen (Pottersbridge Marsh, Covehithe Broad and Benacre Broad) • NE request that a visual assessment is undertaken for the receptor group 'beach users' from the viewpoints located within the relevant LCTs" • "Section 28.5.2, para. 119 NE notes that the SLVIA includes an assessment of the likely effects of the scheme on the special characteristics and qualities of the SCHAONB and welcomes this inclusion." • "Section 28.5.4, Para. 139 NE note the SLVIA assessment for the Galloper WF scheme judged its landscape and visual effects to be either minor or negligible and therefore not significant. NE agreed with this judgement. So, although visible from the southern portion of the SCHAONB this reference to the Greater Gabbard and Galloper arrays is potentially misleading as these schemes have not resulted in a significant adverse effect on 			<p>Agreement on judgement of no significant effects on SCT06 is welcomed.</p> <p>Appendix 28.3 Seascape Assessment of the ES now has an added reference to role and effects on seascape setting of AONB. The effects assessment for SCT06 focuses on changes in offshore character as a result of new features that will be located within the SCT and how they change its pattern of elements. The effects of the construction and operation of the offshore infrastructure on the setting of the AONB and the onshore LCTs which define its character are assessed in section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.4 Landscape Assessment of the ES.</p> <p>Agreement that the character of this seascape has been allowed to change due the location of several OWFs is welcomed.</p> <p>The assessments of SCT06 in section 28.6 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity and Appendix 28.3 Seascape Assessment of the ES have been updated to clarify the onshore visual influence of these windfarms in SCT06 have on the setting of the AONB. The effects assessment for SCT06 focuses on changes in offshore character as a result of new features that will be located within the SCT and how they change its pattern of elements. The effects of the</p>

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	<p>the statutory purposes of the SCHAONB. In contrast however, the SLIVA EA2 does conclude there will be a significant adverse effect on the SCHAONB and also greatly extends the northward spread and visual influence of turbines further across the seascape setting of the designation."</p> <ul style="list-style-type: none"> "Section 28.6.3, Para 148 - 153, Table 28.8 App. 28.2, Section 28.2.4 NE note that the maintenance activities associated with the operational phase of the scheme have not been incorporated into the seascape assessment. (see Chapter 6 6.5.16.2 para. 240 p.63 – 64) for details of these. NE therefore ask that this is done. "Section 28.6.3, Para 148 - 153, Table 28.8 App. 28.2, Section 28.2.4 SCT 06 Offshore Waters. NE acknowledges that the character of SCT 06 is shaped by considerable human activity (as listed in para.148) but notes that the onshore visual influence of OWFs is confined to a southern group (Greater Gabbard and Galloper) and that the 3 arrays which include East Anglia 1 are out of sight when viewed from the SCHAONB. These will be joined by the now consented EA3, which will also be out of sight of the shore. Therefore, only the southern group are within the seascape setting of the designated landscape. And as set out in point 14 above these, unlike the predicated effects for EA2, do not have an adverse effect on the statutory purposes of the SCHAONB. 			<p>construction and operation of the offshore infrastructure on the setting of the AONB and the onshore LCTs which define its character are assessed in section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.4 Landscape Assessment of the ES.</p> <p>Agreement that there is sufficient space to accommodate the East Anglia TWO windfarm site within the SCT, when taken as a whole is welcomed. Embedded mitigation measures through a revised East Anglia TWO windfarm site layout, as described in section 28.3.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES, which provides mitigation of the 'curtaining' effect by reducing the lateral spread of East Anglia TWO windfarm site and provides more open sea separation between each separate offshore windfarm. This separation is illustrated in Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Maintenance activities are included within the operational effects assessments in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendices 28.3-28.7 of the ES.</p> <p>Agreement on judgement of significant effects on LCT05 (Area C) is welcomed.</p>

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	<ul style="list-style-type: none"> "Section 28.6.3, Para 148 - 153, Table 28.8 App. 28.2, Section 28.2.4 SCT 06 Offshore Waters. Whilst NE agree with the judgement in para. 149 of no significant effects NE disagree that this SCT is predominantly characterised by offshore development activities. The geographical extent of this SCT is very large and the area of the EA2 array, which forms a part seascape setting of the SCHAONB, is not characterised by such developments. It is instead characterised as a 'vast and featureless seascape with an expansive open character with consistent panoramic horizons'. So, although EA2 will not redefine the character of SCT 06 it will, and crucially, redefine that portion of the it which forms the seascape setting of the AONB." "Section 28.6.3, Para 148 - 153, Table 28.8. App. 28.2, Section 28.2.4. NE agree with the judgement of significant effects on SCT 03 as set out in para. 151. Para.152: Whilst NE agree that the character of this seascape has been allowed to change from the location of several OWF within NE refer again to the point made above for para.149 and as set out in point 14" "Section 28.6.3, Para 148 - 153, Table 28.8. App. 28.2, Section 28.2.4 NE disagree with the assertion that the 'perception of a wind farm influenced seascape where offshore windfarms are a characteristic element, as they appear as elements that are repeated'. The only OWFs visible from the shoreline of the SCHAONB are 			<p>Agreement on judgement of significant effects on LCT05 (Area D) is welcomed.</p> <p>Provisional agreement on judgement of significant effects on LCT05 (Area E) is welcomed.</p> <p>Assessments of magnitude of change on LCT05 Areas B, C and D were already assessed as medium or medium-low in the PEIR.</p> <p>Embedded mitigation measures through a revised East Anglia TWO windfarm site layout, as described in section 28.3.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES, which provides mitigation by reducing the lateral/horizontal spread of East Anglia TWO windfarm site, reducing the seascape horizon that would be occupied by wind turbines. Visualisations showing this mitigation (the difference between the East Anglia TWO PEIR and ES Layouts) are presented in Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Further granularity/geographic detail has been added to assessment of LCT06 Coastal Levels Area B in section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.4 Landscape Assessment, with the coastal area at Sole Bay added and assessed as having medium magnitude of change and significant effects.</p>

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	<p>the Greater Gabbard and Galloper arrays which form a small, discrete element in an otherwise 'vast and featureless seascape'. They are only visible from the southern portion of the AONB coastline and then as a distant object which straddles the far horizon. They are not prominent in seaward views and consequently do not have an adverse effect on the natural beauty of the designation."</p> <ul style="list-style-type: none"> "Section 28.6.3, Para 148 - 153, Table 28.8 App. 28.2, Section 28.2.4 Whilst NE agree with the contention in the final sentence that there is 'currently sufficient space' within the SCT when taken as a whole to accommodate EA2 NE note that the sentence contains no mention of where the viewer of these 'separate developments' is located. Figures 28 28b / 28c, 34b / 34c, 36c / 36d, 37b / 37c and 38 b / c clearly show how EA2 would appear when viewed in combination with Galloper, Greater Gabbard OWFs and the proposed EA1N scheme. In these instances, the 'sufficient space' referred to is lacking as the effect portrayed in these figures shows these separate developments essentially merging to form a 'curtain' across the seaward horizon so presently themselves as an apparently single entity." "Section 28.7.3, Para. 162 and 163 App. 28.3 NE note that the maintenance activities associated with the operational phase of the scheme have not been incorporated into the seascape 			<p>Agreement on judgement of no significant effects on LCT06 (Area C) is welcomed.</p> <p>Further granularity/geographic detail added to assessment of LCT06 Coastal Levels Area D in section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.4 Landscape Assessment, with the coastal portion/edges of LCT further defined and assessed as having medium magnitude of change and significant effects. Low change on other inland areas of LCT retained.</p> <p>Further granularity/geographic detail has been added to assessment of LCT06 Coastal Levels Area E in section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.4 Landscape Assessment, with the Sudbourne Marshes /Beach/Kings Marshes area of LCT further defined and assessed as having medium magnitude of change and significant effects. Low change on other inland areas of LCT retained.</p> <p>Agreement on judgement of significant effects on LCT07 (Area A) is welcomed.</p> <p>Agreement on judgement of no significant effects on LCT07 (Area B) is welcomed.</p>

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	<p>assessment. (see Chapter 6 6.5.16.2 para. 240 p.63 – 64) for details of these. NE ask that this is done.</p> <ul style="list-style-type: none"> • "Section 28.7.3, Para. 162 and 163 App. 28.3 LCT 05 Coastal Dunes and Shingle Ridges (Areas C, D and E only) NE comments are as follows; <ul style="list-style-type: none"> ○ Area C: NE agree with the judgement of significant effects for the construction and operational phases of the scheme. ○ Area D: NE agree with the judgement of significant effects for the construction and operational phases of the scheme. ○ Area E: NE provisionally agree with the judgement of no significant effects for the construction and operational phases of the scheme and will confirm our definitive advice for our Relevant Representation. Although the distance to the array from this LCT is over 40km NE are concerned that the increase in horizontal spread has not been factored into the scale of change component of the assessment, which is currently considered to be low. • Section 28.7.3, Para. 162 and 163 App. 28.3 NE agree that the offshore winds farms already 			<p>Further granularity/geographic detail has been added to assessment of LCT07 Estate Sandlands Area C in section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.4 Landscape Assessment, with the localised area of the LCT at Dunwich Heath/Cliifs further defined and assessed as having medium magnitude of change and significant effects. Low change on area between Walberswick and Westleton retained.</p> <p>Agreement on judgement of no significant effects on LCT07 (Area D) is welcomed.</p> <p>The sensitivity of LCT08 has been increased to medium-high in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.4 Landscape Assessment; and the magnitude assessments for each area slightly, e.g. Area A to medium-low, but with the overall finding of not significant retained.</p> <p>Reference has been added to Suffolk Heritage Coast (see Figure 28.13) in section 28.7.3.2 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES as representing the part of the AONB most likely to experience significant effects.</p> <p>Agreement on judgement of significant and not significant effects is welcomed.</p>

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	<p>present in the seascape (Gallopier, Greater Gabbard, London Array and Gunfleet Sands I, II and III) are prevalent in the baseline and would appear from the figures 28.40b / 28.40c to occupy approximately 30% of the available seascape horizon. The EA2 proposal would extend this horizontal spread by a further 17% meaning that 47% of the available seascape horizon would be occupied by wind turbines. Figures 28.41b and 28.41c generate similar percentage values.</p> <ul style="list-style-type: none"> NE advise therefore that this assessment is reconsidered based on these facts with the scale of change reclassified as either medium or medium-low. "App. 28.3 LCT 06 Coastal Levels (Areas B, C, D and E only) NE's comments are as follows; <ul style="list-style-type: none"> Area B: NE disagree with the judgement of no significant effects for the construction and operational phases of the scheme. The contribution the sea makes to the coastal portion of this LCT has been underestimated in the assessment. A portion of this LCT extends down to the coast (at Sole Bay, to the north of Southwold) where long distance and panoramic views out to sea will be altered through the loss of the open seascape occupied by EA2. NE advise therefore that the scale of the change should be 'medium' for these 			<p>Further granularity/geographic detail has been added to AONB special quality assessments of LCT06, 07 and 08 in section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.4 Landscape Assessment to reflect earlier comments on these LCTs.</p> <p>Additional preliminary assessment included for LCT20 and LCT29, but scoped out of detailed assessments.</p> <p>Agreement on judgement of significant and not significant effects is welcomed.</p> <p>Appendix 28.4 Landscape Assessment and section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES have an expanded baseline description of relative wildness aspects of special qualities, with reference to seascape setting. It should be noted that seascape setting is not a quality listed in the Suffolk Coast and Heaths AONB Natural Beauty and Special Qualities Indicators report (LDA 2016), but has been added to the SLVIA baseline based on s42 consultations.</p> <p>Significant effects on pockets of relative wildness added to the assessment e.g. coastal parts of Coastal Levels LCT06 and Estate Sandlands LCT07. Appendix 28.4 Landscape Assessment and section 28.7 Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES have an expanded baseline</p>

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	<p>portions of the LCT and the judgement should be significant.</p> <ul style="list-style-type: none"> Area C: NE agree with the judgement of no significant effects for the construction and operational phases of the scheme." Area D: NE disagree with the judgement of no significant effects for the construction and operational phases of the scheme. The contribution the sea makes to the coastal portion of this LCT has been underestimated in the assessment. Although the beach and shoreline are not visible from this LCT long distance and panoramic views out to the seaward horizon are available and form a key component of the character of this area. Due in part to the height and mass of the turbines the EA2 scheme will be visible (as predicated by the ZTV model Figure 28.16 which indicates up to 60 blades tips will be visible). NE advise therefore that the scale of the change should be medium for these portions of the LCT and the judgement should be significant." Area E: NE disagree with the judgement of no significant effects for 			<p>description of tranquillity aspects of special qualities, with reference to seascape setting.</p> <p>Significant effects on pockets of relative tranquillity added to the assessment e.g. coastal parts of Coastal Levels LCT06 and Estate Sandlands LCT07.</p> <p>Agreement on judgement of no significant effects on the natural heritage special qualities of the AONB is welcomed.</p> <p>Comments on cultural heritage special qualities of AONB are noted and assessed further in Chapter 24 Onshore Archaeology and Cultural Heritage of the ES.</p> <p>Maintenance activities are be included within the operational effects assessments in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendices 28.2-28.6 of the ES.</p> <p>Noted regarding user group 'walkers and cyclists'.</p> <p>England Coastal Path proposals to incorporate the Suffolk Coastal Path will be finalised and published in autumn 2019 and the new access is expected to be ready in 2020. In the meantime, the SLVIA assesses effects on users of the Suffolk Coastal Path.</p> <p>Conclusions in section 28.13 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES</p>

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	<p>the construction and operational phases of the scheme. The contribution the sea makes to the coastal portion of this LCT has been underestimated in the assessment. Although the beach and shoreline are not visible from this LCT long distance and panoramic views out to seaward horizon are available and form a key component of the character of this area, particularly in the vicinity of Sudbourne Marshes, Sudbourne Beach and Kings Marshes. Due in part to their height and mass the turbines of the EA2 will be visible (as predicated by the ZTV model Figure 28.16 which indicates up to 60 blades tips will be visible). NE advise therefore that the scale of the change should be medium for these portions of the LCT and the judgement should be significant."</p> <ul style="list-style-type: none"> • "Section 28.7.3, Para. 164 to 167 App. 28.3 LCT 07 Estate Sandlands <ul style="list-style-type: none"> ○ Area A: NE agree with the judgement of significant effects for the construction and operational phases of the scheme ○ Area B: NE agree with the judgement of no significant effects for the 			<p>have been expanded to contain a fuller narrative and reflect the judgements contained within the ES SLVIA.</p> <p>Agreement that the offshore areas/seascape character (SCT06) would remain as a 'seascape with windfarms' is welcomed.</p> <p>Change to the horizon in sea views from key viewpoint locations in the AONB coast are assessed in Appendix 28.5 Visual Assessment and summarised in section 28.8 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Further reasoning to the agreed significant effect judgements on SCT 03: Nearshore Waters has been added to Appendix 28.3 Seascape Assessment of the ES.</p> <p>The SLVIA points to the precedent of existing and consented offshore wind farm development in the Offshore Waters (SCT06) and notes that the East Anglia TWO windfarm site fits with this established approach of 'accommodation' of offshore wind energy development in parts of the study area seascape. Narrative judgements on acceptability of effects have been expanded in the conclusions of section 28.13 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Embedded mitigation measures for the northward spread/cumulative effect is through a revised East Anglia TWO windfarm site layout, as described in</p>

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	<p>construction and operational phases of the scheme.</p> <ul style="list-style-type: none"> Area C: NE disagree with the judgement of no significant effects for the construction and operational phases of the scheme. Walberswick and Westleton: The contribution the sea makes to the coastal portion of this LCT has been underestimated in the assessment. Consequently, the scale of the change should be medium for these portions of the LCT. As with Area A of this LCT 'long distance and panoramic views out to sea' will be altered through the loss of the open seascape occupied by EA2. For instance, such views are available from sections of The Suffolk Coast Path located to the east of Dunwich Forest where the interviewing LCT (8 Open Coastal Fens) would form the foreground of such views. NE advise therefore that the scale of the change should be medium for these portions of the LCT and the judgement should be significant. Dunwich Heath and Cliffs: the contribution the sea makes to the coastal portion of this LCT has been underestimated in the assessment. Consequently, the scale of the change should be medium for these portions of the LCT. As with Area A of this LCT 'long distance and panoramic views out to sea' will be altered through the loss of the open seascape occupied by EA2 particularly in the vicinity of Dunwich Heath where a portion the LCT 			<p>section 28.3.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES. This provides mitigation of the horizontal spread of wind turbines, by reducing the lateral spread and results in reduced effects arising from East Anglia TWO windfarm site on seascape, coastal landscapes and views from the AONB. Visualisations showing this mitigation (the difference between the East Anglia TWO PEIR and ES Layouts) are presented in Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Conclusions on acceptability have been updated and expanded in the narrative conclusions in section 28.13 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>The robust and systematic approach, layout and scope of SLVIA is recognised by SCC/SCDC (now East Suffolk Council) and there is widespread agreement on many of the significant and non-significant effects findings across the SLVIA, between the Applicant/SCC/SCDC (now East Suffolk Council)/NE. The assessments in the SLVIA have been updated in light of s42 comments on specific landscape and visual receptors. Conclusions in section 28.13 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES have been expanded to contain a fuller narrative and reflect the judgements contained within the ES SLVIA.</p>

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	<p>extends down to the beach; as it does in Area A. The increased elevation of the coastal portions of this LCT, at the Coastguard Cottages for instance, will allow for views out to sea which extend further thereby bringing more of EA2 array into the view. NE advise therefore that the scale of the change should be medium for these portions of the LCT and the judgement should be significant.</p> <ul style="list-style-type: none"> Area D: NE agree with the judgement of no significant effects for the construction and operational phases of the scheme. "Section 28.7.3, Para. 168 App 28.3 LCT 08 Open Coastal Fens (Areas 1, 2 and 3) Due to their contiguous nature the areas which comprise this LCT will be dealt with as one unit. NE's comments are as follows; Areas 1, 2 and 3: NE disagree with the judgement of no significant effects for the construction and operational phases of the scheme. The contribution the sea makes to the coastal portion of this LCT has been underestimated in the assessment. Although the beach and shoreline are not visible from this LCT long distance and panoramic views out to far seaward horizon are available from some locations and form a key component of the character of this area (particularly in the vicinity of Cooperation and Oldtown Marshes). As acknowledge in 28.5 p.13 although 'views of the sea are restricted' they are not absent. The ZTV model Figure 28.16 indicates up to 60 blades tips will be visible from locations within this LCT. NE 			<p>Embedded mitigation measures for the northward spread/cumulative effect is through a revised East Anglia TWO windfarm site layout, as described in section 28.3.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES, which provides mitigation of the horizontal spread of wind turbines and the cumulative 'curtaining' effect with East Anglia ONE North, by reducing the lateral spread and results in reduced effects arising from East Anglia TWO windfarm site on seascape, coastal landscapes and views from the AONB. Visualisations showing this mitigation (the difference between the East Anglia TWO PEIR and ES Layouts) are presented in Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>The seascape setting of the AONB is not entirely uncluttered, with large vessels and existing wind turbines present, however the simple composition of sea views is referred to throughout the SLVIA (Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.5 Visual Assessment).</p> <p>Significant effects are limited to the East Suffolk shore and its immediate seascape areas. Embedded mitigation measures through a revised East Anglia TWO windfarm site layout, are as described in section 28.3.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES. This provides mitigation of the loss of open seascape, by reducing the lateral spread and results in</p>

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	<p>advise therefore that the scale of the change should be medium for these portions of the LCT and the judgement should be significant.</p> <ul style="list-style-type: none"> "Table 28.9, Section 28.3, Section 28.2.2 The SHC represents that part of the SCHAONB most likely to experience significant adverse effects arising from the EA2 scheme. Reference to the boundary of the SHC will therefore help the ExA to understand the extent of the geographic influence of the EA2." "Table 28.9 Section 28.3 Section 28.2.2 Landscape Quality: NE agree with the judgement of significant effects as set out in 28.3 at p.37 and p.38 and also agree with the judgement of no significant effects for the inland areas of the Estate Sandlands LCT 07 within the AONB. NE disagree with the judgement of no significant effects for LCT 06 Coastal Levels and LCT 08 Coastal Fens for the reasons NE set out in the reasons above. NE advise that there may be significant effects on LCT 20 Saltmarsh and Intertidal Flats (Ordford Ness only) and LCT 29 Wooded Fen and request that an assessment is undertaken to determine if this is the case." "Table 28.9; Section 28.3; Section 28.2.2 Scenic Quality: NE agree with the judgement of significant effects as set out. NE disagree with the judgement of no significant effects for LCT 06 Coastal Levels and LCT 08 Coastal Fens for the reasons NE set out in points 17 and 19 above. 			<p>reduced effects arising from the East Anglia TWO windfarm project. Visualisations showing this mitigation (the difference between the East Anglia TWO PEIR and ES Layouts) are presented in Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>The reference to National Trust café at Viewpoint 7 corrected in Table 28.9 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity and Appendix 28.5 Visual Assessment of the ES. There is a café at Dunwich Beach, to which the PEIR referred, but it is not the National Trust café (which is at Viewpoint 8).</p> <p>Views from the café at Viewpoint 7 are screened by intervening shingle beach/dunes, however effects experienced by visual receptors at the National Trust cafe at Dunwich Heath are assessed as significant as part of Viewpoint 8 assessment.</p> <p>Updates to the effects assessed on the Suffolk Coastal Path have been made in Appendix 28.6 Suffolk Coastal Path Assessment of the ES, however there is substantial agreement with NE on the on judgements of significant and not significant visual effects on the different sections of the Suffolk Coastal Path. The effects remain significant on views experienced over a 1km stretch over Dunwich Heath near the Coastguard Cottages, as assessed in the Appendix 28.6 Suffolk Coastal Path Assessment.</p>

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	<ul style="list-style-type: none"> NE advise that for the assessment of Scenic Quality the judgements reached in of the Visual Assessment are incorporated. This will fully inform this assessment and move it beyond an assessment based solely on landscape character by factoring in how the scheme may adversely affect people who visit the ANOB to enjoy the scenic quality afforded by the natural beauty of this designated landscape and it's seascape setting, the latter being an integral component of the area's special qualities." "Table 28.9; Section 28.3; Section 28.2.2 Relative Wildness: NE disagree with the judgement of no significant effects as set out. A number of coastal locations within the SCHANOB provide opportunities to experience relative wildness. These include Orford Ness, Minsmere and Dunwich Heath where the character of the landscape and views afforded out to sea and long the coast contribute to the 'significant areas of semi natural landscape and seascape notably along the coastline, offshore and within undeveloped estuaries where there is little evidence of apparent human activity.....'. (28.3 p. 33). Whilst NE agree that the construction and operation of EA2 will not directly influence these features (as acknowledge below for the special quality Natural Heritage) it will alter people's perception of the wildness of the coast through the introduction of visible man-made features off-shore. Consequently, the apparent wildness of the 			<p>Embedded mitigation measures for the northward spread/cumulative effect is through a revised East Anglia TWO windfarm site layout, as described in section 28.3.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES, which provides mitigation of the horizontal spread of wind turbines and the 'curtaining' effect by reducing the lateral spread of East Anglia TWO windfarm site and provides more open sea separation between each separate offshore windfarm. Visualisations showing this mitigation (the difference between the East Anglia TWO PEIR and ES Layouts) are presented in Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Conclusions on acceptability have been updated and expanded in the narrative conclusions in section 28.13 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Assessments that explicitly sets out the likely effects on the AONB are provided in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.4 Landscape Assessment of the ES.</p>

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	<p>coastline will be adversely affected and quality of the experience currently afford eroded. Due to the increase in offshore lighting these effects will extent into the night time as well."</p> <ul style="list-style-type: none"> "Table 28.9 Section 28.3 Section 28.2.2 Relative Tranquillity: NE disagree with the judgement of no significant effects as set out seeing limited evidence in the reasoning to support this judgement at 28.3 p.37. Whilst NE agree with the statement '(the) appearance of the EA2 windfarm site relates rationally to the sounds of the wind and exposure along the AONB coastline' NE note that it is not the site of the EA2 which is under consideration but the windfarm itself. Relative Tranquillity is a product of a wide range of environmental attributes (both natural and man-made) found within a specific location. It is how these combine elements and are then sensed, mostly through seeing and hearing, by an individual which generates an experience of tranquillity. Generally, places which have an absence of people, development and industrial features (particularly prominent vertical structures like pylons, chimneys and wind turbines) and the strong presence of natural and semi-natural features are most likely to foster a sense of tranquillity. It is for this reason that NE fundamentally disagree with the statements 'their relatively low speed and long distance offshore would ensure that they have negligible changes to the perceived calmness in 			

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	<p>the landscape' (28.3 p.37). EA2 will introduce clearly visible man-made structures which incorporate a kinetic element into an otherwise apparently undeveloped seascape thereby eroding the potential for people to experience tranquillity in these locations.</p> <ul style="list-style-type: none"> • The coastal areas of the SOCAONB contain a number of locations with the opportunity to experience a sense of relative tranquillity which is well above that which is available elsewhere, both in the SCHAONB and the rest of the country. Generally, these locations coincide with, but are not limited to, the areas of Relative Wildness referred to above. Other more discrete locations along the coast can also provide this experience." • "Table 28.9 Section 28.3 Section 28.2.2 Natural Heritage: NE agree with the judgement of no significant effects as set out." • "Table 28.9 Section 28.3 Section 28.2.2 Cultural Heritage: NE offer no comments on this assessment although notes that the coast and seascape setting of the AONB have internationally significant cultural associations in respect of art and music which relate directly to the designations seascape setting." • "NE note that the maintenance activities associated with the operational phase of the scheme have not been incorporated into the seascape assessment. (see Chapter 6 6.5.16.2 para. 240 p.63 – 64) for details of these. NE ask that this be done. 			

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	<ul style="list-style-type: none"> In addition, NE request that the user group 'walkers and cyclists' incorporates all users in this group and is not restricted just to those using the Suffolk Coastal Path and the National Cycle Network but expanded to include all PROW. NE considers these groups to be the ones most associated with the statutory purpose of the SCHAONB in that they intentionally seek to enjoy the natural beauty of the AONB and are particularly drawn to extensive views along the coast and out to sea, and as 'receptors' are highly sensitive to any detractors from that sought experience. Hence the seascape setting of the AONB is integral to why and how people visit and value the Suffolk Coast and Heaths." "28.8.5.5 para. 206 p. 85 NE note this paragraph and welcome the highlighting of the creation of the English Coastal Path noting that the alignment of this path will wherever possible closely follow the coast and will therefore not always follow the route of the Suffolk Coastal Path." Para. 234: NE agrees with the initial statements of this paragraph but NE disagree with the concluding portion 'there is scope for the EA2 OWF to be accommodated in this location without unacceptable effects on seascape, landscape character and visual amenity'. The paragraph makes no mention of the SCHAONB or acknowledges and gives proper weight to the integral contribution the seascape setting makes 			

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	<p>to supporting this nationally designated landscape and enabling it to deliver its statutory purpose.</p> <ul style="list-style-type: none"> • Para. 235: NE disagree with the conclusion presented here. NE see no evidence in the SLVIA of work to quantify the windfarm carrying capacity of SCT 06 i.e. how many turbines the SCT can accommodate before the dominant character of the SCT becomes the presence of OWF. Additionally, as this SCT forms a significant part of the seascape setting of the SCHAONB and noting the NPS EN-1 (5.9.12 and 5.9.13) requirement for is avoid 'comprising the purposes of the designation' NE fail to understand the relevance of this paragraph. • "Para. 236: Our comments on the specific points listed are as follows: • Bullet point 1: Reference is made to separation distances from the coast, but not to the height of the proposed turbines (300m) as set out in the worst case realistic scenario. A reference to both is required. • Bullet point 2: NE disagree with conclusion presented. The landward geographic extent of the significant effect, restricted to the immediate coastal edges, fails to mention that all these significant effects occur within a nationally designated landscape and covers a length of the coastline extending to approximately 37km; approximately 60% of the total coastline of the SCHAONB (Ordford Ness to Covehithe). 			

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	<ul style="list-style-type: none"> Bullet point 3: Assuming that the seascape referred to is that defined by SCT 06 NE agree with this statement. Bullet point 4: Assuming that the seascape referred to is that defined by SCT 06 NE agree with this statement. Bullet point 5: NE disagree with this statement. The inference is that the presence of the Greater Gabbard and Galloper OWFs in the seascape setting of the SCHAONB sets a precedent for the granting of a DCO EA2. NE refer to our earlier comments in respect of NPS EN-1 (5.9.12 and 5.9.13) as set out above. Bullet point 6: NE disagree with this statement and believe it to be flawed due to reasons provided in respect of the previous bullet points above, the landscape and a defined Heritage Coast. The conclusion should acknowledge this aspect of the assessment." The PEIRs for both EA1N and EA2 (234 and 235) state that the offshore areas affected by the windfarms would remain as 'seascape with windfarms', and would not be affected so much as to be regarded as a 'windfarm seascape'. The Councils accept that this may be the case for the prevailing seascape character areas, but cannot accept it with regard to the fundamental change to the horizon in sea views from key viewpoint locations in the AONB coast. The EA2 PEIR (151) correctly acknowledges that the changes to the character of the nearshore waters between 			

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	<p>Kessingland and Orford Ness are significant. However, the EA1N PEIR (153 & EA2 152) seems to contradict this conclusion by stating that the windfarms, both existing and presumably proposed, are not the defining characteristic of the Offshore Waters Seascape Character Type (SCT), and yet also states that windfarms are a key component of people's surroundings in the SCT. This comes across as not very helpful reasoning and potentially a distraction from the accepted significant changes to the SCT noted in the previous paragraphs of the PEIRs. It is suggested that there should be further discussion and agreed understanding on key judgments within the assessment, especially regarding the magnitude of change in the SCTs. The following paragraph in both documents argues that that landscape planning has already established and accepted landscape change from offshore windfarm development in this seascape.</p> <ul style="list-style-type: none"> • This statement can only be valid as far as the extent and visibility of current consented development is concerned, and does not at all set a precedent for further development that in the case of EA1N and EA2 would lead to an almost continuous presence of turbines on the horizon from some key viewpoints. Further, the suggestion in the EA1N PEIR (142 & EA2 141) that further development pressure may change the baseline conditions of the assessment is 			

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	<p>purely speculative and cannot be regarded as a reliable assumption.</p> <ul style="list-style-type: none"> Based on the information presented to date, and issues identified above, the Councils remain unconvinced that; <ul style="list-style-type: none"> The seascape and views from the shoreline will not become dominated by wind turbines, as the conclusion of the assessments contend. That the EA2 wind farm can be accommodated without “unacceptable effects on seascape, landscape character and visual amenity” as set out in the conclusion of the assessment. That the findings and conclusions of the SLVIAs are a fully robust basis on which to properly understand the full impacts of the projects. The Councils are of the view, based on the current proposals, that due to the sensitivity of the receptors and the fundamental change arising from the combined windfarms especially EA2, the harmful effects of EA2 are considered to outweigh the benefits. NPS EN-1 recognises the vulnerability of coastal areas to visual intrusion due to the potential high visibility of development on the foreshore, on the skyline and affecting views along stretches of undeveloped coastline. The cumulative impacts of both projects would have significant effects along almost the entirety of the east Suffolk coastline. The effects predicted 			

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	<p>by the Applicant would be experienced permanently. It could be argued that 30 years is not permanent but with the option available to repower the turbines, the significant length of time will feel permanent to the Councils and local communities affected. The Councils therefore object to EA2 in relation to the significant effects predicted by the Applicant on seascape, coastal landscapes, character and qualities of the AONB and Heritage Coast, users of the Suffolk Coast Path and cumulatively with EA1N. The Councils express concerns in relation to the effects of EA1N on seascape, landscape and visual effects and object in relation to the cumulative offshore impacts with EA2.</p> <ul style="list-style-type: none"> The SLVIA states that the construction and operation of the offshore infrastructure would have significant effects on the seascape character of the area of nearshore waters between Kessingland and Orford Ness. The document acknowledges that the proposal will include elements on the sea skyline which will partially alter the visual relationship of the seascape with the coastline, resulting in partial loss of open sea skyline in the backdrop of offshore waters. The magnitude of change is described as 'medium' and the significance of effects during construction, operation and decommissioning are described as 'significant'. The National Trust is of the opinion that the turbines would interrupt the uncluttered seascape and create a focal point within the off- 			

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	<p>shore views. These structures will be long term features within the seascape.</p> <ul style="list-style-type: none"> Table 28.10 (Viewpoints - Summary of Effects) describes the impact from the National Trust café as 'Not Significant'. There appears to be a discrepancy here as the National Trust café is listed under Viewpoint 7, yet Dunwich Heath and Beach (including Coastguard Cottages) are listed under Viewpoint 8 and described as having a 'Significant' effect. The National Trust café is located in the same building as the Coastguard Cottages. The Trust would argue that given the heavily visited area where the café is located (along with other visitor infrastructure including the car park, shop, toilets, picnic area) and the fact that it sits at an elevated position from the surrounding beach and marshes, the impacts from this location would also be significant. It is noted that further technical assessment of the seascape impacts upon the Suffolk Coastal Path are required. The path has a medium to high sensitivity to change. However, findings so far indicate that one of the four sections which would be significantly affected would be a 1km stretch over Dunwich Heath, north of Coastguard Cottages. The National Trust is interested in the findings of further assessments on the Coastal Path and reserves comment at the current time. Furthermore, the England Coast Path will be a national trail, with associated national weighting in terms of sensitivity to landscape and visual 			

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	<p>impacts, so we would question the medium/high sensitivity to change for the path in this location.</p> <ul style="list-style-type: none"> The SLVIA has found that the construction and operation of the offshore infrastructure would not result in the key characteristics of significantly affected areas as being affected to such a degree that the seascape would become a 'windfarm seascape' (in addition to or with other operational windfarms), where wind turbines dominate the character, but that it would remain characterised locally as a 'seascape with windfarms'. The National Trust does not agree with this conclusion. The seascape would become dominated by linear stretches of wind turbines which would undoubtedly change its character to a 'windfarm seascape'. Whilst it is acknowledged that the turbines will be more visible when the weather allows good visibility, they will nonetheless be long term features within the seascape. The SLVIA concludes that the proposal would result in some significant effects on the character and views from the closest areas of the Suffolk coastline but that the windfarm site could be accommodated in this location without unacceptable effects on seascape, landscape character and visual amenity. The Trust disagrees with this and considers that the windfarm would have a significant adverse impact upon seascape including views from Dunwich Heath and Beach, Orford Ness, parts of the Suffolk Coastal Path 			

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	(and England Coast Path) and the setting of the AONB.			
	<p>PEIR Cumulative Impacts</p> <ul style="list-style-type: none"> The AONB Partnership consider the in combination impacts of EA1N and EA2 with existing and proposed major infrastructure associated with the Suffolk Coast have not been adequately assessed. The AONB Partnership considers that the in combination impacts of the proposals with existing developments such as Sizewell A, Sizewell B, the proposed Sizewell C, the proposed interconnectors (Nautilus and EuroLink) and wind energy infrastructure of Galloper and Gabbard have not been fully acknowledged or assessed. Cumulative effects between EA2 and EA1 have been assessed but cumulative effects with Sizewell C are only considered in relation to onshore development not offshore. The section of coast between Aldeburgh and Southwold will experience both the on shore development of Sizewell C and the offshore development of the proposed windfarms. Whilst Sizewell C is not strictly the same type of development it is nonetheless an energy development which effects 	Suffolk Coast and Heath AONB Partnership; NE; National Trust	11	<p>Cumulative Effects with the Sizewell C Project are now included. These are assessed in Appendix 28.7 Cumulative SLVIA of the ES and summarised in section 28.9 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES. Sizewell A and B, Galloper and Gabbard substations form part of the baseline. It was agreed with the Expert Topic Group that there is insufficient information to assess National Grid Ventures (Nautilus and Eurolink). This is in line with Planning Inspectorate Advice Note 17 Cumulative Effects Assessment.</p> <p>An assessment of additional cumulative effects with Sizewell C is outlined in section 28.9 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.7 Cumulative SLVIA of the ES, covering the section of coast between Aldeburgh and Southwold.</p> <p>Suffolk Coast and Heaths AONB Natural Beauty and Special Qualities Indicators report (LDA 2016) acknowledges the influence and clutter of existing windfarm development in the AONB. There are locations</p>

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	<p>the same coastline. The lack of assessment of the combined effects of Sizewell C and the offshore windfarms is a notable omission especially in the context of effects on the AONB landscape.</p> <ul style="list-style-type: none"> Unreasonable reliance on the existence of existing windfarm development along the coast in the assessment of effects. The reality is that Great Gabbard and Galloper windfarms, although located at similar distances to EA2, are in fact significantly smaller in height. Furthermore, their smaller extent ensures they affect a more limited area of the AONB. In contrast the EA2 and EA1N windfarms will affect c. 40km of the SC&H AONB which is only 50km in length in its entirety. The effects of EA2 or EA2 and EA1N in combination will give rise to a pervading presence of windfarms as perceived from the AONB. The SLVIA considers at para 152 of Chapter 28 that the effect of EA2 would not give rise to a windfarm seascape but that it would comprise a seascape with windfarm. However, this cannot be an acceptable circumstance where a national landscape designation lies adjacent and especially a landscape dependent on the inter-relationship with the sea for its special qualities. The 'curtaining' effect of the proposed windfarm development cannot be assessed simply by the extent of the horizon affected by windfarm development from a specific viewpoint. It must also take account the extent of the coast which has sequential views of the proposed 			<p>where the height of Galloper/Greater Gabbard appears comparable to the proposed East Anglia TWO offshore windfarm. The combined extent of Galloper and Greater Gabbard is comparable to the proposed East Anglia TWO project (Figure 28.9 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES) in the closest views. As assessed in the SLVIA, the influence of the proposed East Anglia TWO project is restricted to the coastal edge of the AONB and will not be the pervading influence throughout the AONB.</p> <p>The AONB is not 'adjacent' to the East Anglia TWO windfarm site but is approximately 32.5km distant at its closest point. There are several examples of seascapes containing windfarms in locations offshore from nationally designated landscapes.</p> <p>Sequential views are assessed from the Suffolk Coastal Path in Appendix 28.6 Suffolk Coastal Path Assessment of the ES. There are very few other receptors that provide a sequential experience of the coast, with no major roads or railway lines.</p> <p>Embedded mitigation measures for the northward spread/cumulative effect is through a revised East Anglia TWO windfarm site layout, as described in section 28.3.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES, which provides mitigation of the 'curtaining' effect by reducing the lateral spread of East Anglia TWO windfarm site and</p>

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	<p>development such that it would not be possible to get away from this type of development when experiencing the vast majority of the AONB coastal landscapes.</p> <ul style="list-style-type: none"> NE welcomes this assessment for the clarity it provides. NE note that no mitigation measures have been proposed for cumulative effects of the EA2 and EA1N schemes when considered together. Considering the predicted significant adverse effects for the EA2 scheme alone and the further in-combination adverse significant cumulative effects predicted for the EA2 and EA1N schemes when considered together, NE requests that the Applicant proposes suitable mitigation measures. Noting the policy in NPS EN-1 which states 'the aim should be to avoid compromising the purposes of the designation and that projects should be designed sensitivity' and considering the in-combination effects of these two schemes NE requests that evidence is presented to demonstrate how this policy requirement has been addressed." The impact upon the AONB is also described as 'Significant', having an impact upon the landscape and scenic quality of the area and the seascape setting. This is also the case when considered cumulatively with the proposed East Anglia ONE North windfarm. The East Anglia TWO windfarm site will also be seen within the context of the existing Galloper and Greater Gabbard windfarms 			<p>provides more open sea separation between each separate offshore windfarm This separation is illustrated in visualisations showing this mitigation (the difference between the East Anglia TWO PEIR and ES Layouts) presented in Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>The cumulative effects of the construction and operation of the offshore infrastructure with East Anglia ONE North and other offshore windfarms is assessed in Appendix 28.7 Cumulative SLVIA and summarised in section 28.9 Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES. The combined effect of Galloper and Greater Gabbard is greater on some of the southern and closest areas of the AONB between Orford Ness and Bawdsey, e.g. Viewpoint 18 (Figure 28.43b) where the vertical scale of the closer Greater Gabbard/Galloper wind turbines (from 25km) appears similar to East Anglia TWO, and occupies a wider lateral spread on the skyline.</p> <p>The SLVIA points to the precedent of existing and consented offshore wind farm development in the Offshore Waters (SCT06) and notes that the East Anglia TWO windfarm site fits with this established approach of 'accommodation' of offshore wind energy development in parts of the study area seascape. Narrative judgements on acceptability of effects have been expanded in the conclusions of section 28.13 in Chapter</p>

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	<p>towards the south of the study area, in the Orford Ness area. The fact that other windfarms are already present does not make the addition of another one in this area acceptable. It would result in a greater accumulation of wind turbines over a longer stretch of coast and would have a greater visual impact.</p> <ul style="list-style-type: none"> It is requested that an overlap in construction programmes which could impact upon visual amenity, landscape character and the tourist economy should be covered in the assessment. It is requested that seascape impacts upon the character of the area, views from Dunwich Heath and beach, Orford Ness, the AONB and its setting, the Heritage Coast, the coastal path and public rights of way are included in the assessment. 			<p>28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Cumulative Effects of the East Anglia ONE North and East Anglia TWO projects with the Sizewell C Project are assessed in Appendix 28.7 Cumulative SLVIA and summarised in section 28.9 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES. Sizewell A and B, Galloper and Gabbard substations form part of the baseline. It was agreed with the Expert Topic Group that there is insufficient information to assess National Grid Ventures (Nautilus and Eurolink).</p>
	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> Section 28.3.2, para. 32 We note the limited opportunities to mitigate the significant adverse effects of the scheme through a reduction in the geographic extent of the array (the design) and/or the size of the chosen technology (the turbines). As the only mitigation measures available to reduce the adverse significant effects on the statutory purposes of the SCHAONB would be via such measures we conclude that such a reduction is not possible and therefore no mitigation measures other those already embedded in the design are available to reduce the identified 	NE	3	<p>Embedded mitigation measures in the form of a revised East Anglia TWO windfarm site layout, as described in section 28.3.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES. Visualisations showing this mitigation (the difference between the East Anglia TWO PEIR and ES Layouts) are presented in Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>The revised project design presented in this ES therefore represents a reduction in the geographic extent of the East Anglia TWO windfarm site, whilst maintaining its generation capacity. The change has</p>

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	<p>effects to not significant. The judgements contained in the SLIVA indicate that these embedded measures have failed to sufficiently reduce the level of significance for all landscape, seascape and visual receptors."</p> <ul style="list-style-type: none"> Section 28.3.2, para. 32 section 28.3.3, para. 43 The embedded mitigation referred in para. 43 reflects the requirements set out by the relevant regulatory authorities (as described earlier in para. 39) and refers to only night time lighting associated with safety. These are also an operational requirement of the design. NE concludes that the only 'reasonable mitigation' (as required by NPS EN-1 para. 59.9.17) set out are those required by other regulatory authorities concerned with navigational safety in that the minimum requirement has been applied. Although located well beyond the distances recommended by the Round 3 SEA the significant increase in turbine height (and bulk) since this assessment means that that reliance on these figures may no longer be relevant." 			<p>resulted in reduction in seascape, landscape and visual effects, as assessed in the SLVIA.</p> <p>The fundamental point made in the SLVIA in section 28.3.2 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES remains the same regardless of wind turbine height, i.e. that siting offshore windfarms at long distance offshore from designated coastal landscapes will help to mitigate potential landscape and visual impacts.</p>
	<p>General Assessment Comments</p> <ul style="list-style-type: none"> Lack of detail to fully understand the anticipated offshore visual impact. No distance threshold defined for non-significant impacts on long distance users of the coast path becoming significant. Whilst noting that Open Coastal Fens Landscape Character Type (LCT) have been assigned low 	<p>Local Community Member; SCC; SCDC (now East Suffolk Council); National Trust; Waveney District Council;</p>	20	<p>Significant effects are assessed in Appendices 28.3-28.7 and summarised in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Open Coastal Fens LCT 08 changed to medium susceptibility and medium-high sensitivity in section 28.7 of Chapter 28 Offshore Seascape, Landscape and</p>

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	<p>susceptibility, yet viewpoint 6 which is cited in this regard illustrates the clear relationship between this landscape type and the sea and therefore a rating of medium to medium-high (depending on location within the landscape type) would seem to be more appropriate. "Unconvinced that the findings and conclusions of the SLVIAs are a fully robust basis on which to understand the full impacts of the projects.</p> <ul style="list-style-type: none"> • The approach to, and layout and scope of the assessments, appear to be robust covering systematically, and reflecting conversations with the Applicant to date. • The seascape landscape and AONB Special Qualities baselines are appropriately established. • The Applicant will need to ensure that the scope of the projects considered is reviewed further prior to submission of the applications later in 2019, given the emergence of new projects. • At this stage values assigned to receptor sensitivity and magnitude of change need further detailed review by officers and this may increase the instance of effects being significant in addition to those already identified. • Significant impacts to AONB and Suffolk Coast Path are not carried through to conclusions of Chapter 28. • Significant impacts on landscape, seascape and visual amenity are not made clear in conclusions. • The need to ensure an agreed definition of tranquillity for the purposes of the assessment of 	Suffolk Preservation Society; Suffolk Coast and Heath AONB Partnership		<p>Visual Amenity of the ES and Appendix 28.4 Landscape Assessment of the ES.</p> <p>Feedback on the robust and systematic approach, layout and scope of SLVIA is welcomed.</p> <p>Agreement that the seascape, landscape and AONB special qualities baseline are appropriately established is welcomed.</p> <p>Greater Gabbard Extension and Galloper Extension are still at pre-scoping stage at present and therefore not considered in the assessment in line with Planning Inspectorate Advice Note 17 Cumulative Effects Assessment.</p> <p>Further review of receptor sensitivity has been undertaken in response to detailed comments provided by NE (see above) and reflected in the sensitivity assessments and significance judgements in the SLVIA in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendices 28.3-28.7 of the ES.</p> <p>Conclusions in section 28.13 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES have been expanded to contain a fuller narrative and reflect the judgements contained within the ES SLVIA.</p>

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	<p>impacts on the character and special qualities of the AONB.</p> <ul style="list-style-type: none"> Where distance appears to have been factored in when defining the susceptibility of landscape to the proposals, this leads to effective double counting and unreasonably downgrades the susceptibility of this landscape to medium when it should be high. Definition of the susceptibility of visual receptors needs to be reviewed systematically in the light of the undue weight given to existing windfarms and Sizewell A and B. Clarification is required regarding the representation of other offshore structures, which appear to be present in photomontages but not the wireframes. It is notable that percentage of the view is discussed in the SLVIAs and there is a need to clarify the basis on which this assessment is made. The report prepared by Alison Farmer Associates for the Suffolk Coast and Heaths AONB Partnership and appended to their response will also be the basis of further technical discussions between the Councils and the applicant prior to the DCO submissions. The Non-Technical Summary does not adequately reflect the findings of the SLVIA. The PEIR remains silent on the location and visual impact of the two off shore platform structures that are required to service the wind 			<p>Appendix 28.4 Landscape Assessment and section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES include an expanded baseline description of tranquillity aspects of special qualities, with reference to seascape setting.</p> <p>There are only pockets of tranquillity associated with coast/areas with wildness attributes, 'in this largely farmed and settled landscape'. Assessment of effects on tranquillity have been expanded in Appendix 28.4 Landscape Assessment and section 28.7 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES. Significant effects on pockets of tranquillity associated with the coast added to the assessment e.g. coastal parts of Coastal Levels LCT06 and Estate Sandlands LCT07 within the AONB.</p> <p>Further review of receptor sensitivity has been undertaken in response to detailed comments provided by NE (see above) and reflected in the sensitivity assessments and significance judgements in the SLVIA in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendices 28.3-28.7 of the ES.</p> <p>Further review of visual receptor sensitivity has been undertaken in response to detailed comments provided by NE and reflected in the sensitivity assessments and significance judgements in the SLVIA in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.5 Visual Assessment of the ES.</p>

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	turbines. Clarification is required to address this issue.			<p>Responses to weight of existing windfarms and Sizewell A and B provided above.</p> <p>Offshore infrastructure including the indicative offshore substation platforms, indicative accommodation platform and offshore met mast are shown in the photomontages in Figures 28.25 - 28.54 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>The horizontal spread of the East Anglia TWO windfarm site is measured in degrees of the field of view, between the left and right most wind turbines of the visible array.</p> <p>Noted regarding the report prepared by Alison Farmer Associates.</p> <p>Indicative Offshore Substation Platforms and Indicative Accommodation Platform is shown in Figure 28.1 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p>
	<p>Seascape concerns</p> <ul style="list-style-type: none"> Concerns over seascape visual impact. Concern over lighting, especially flashing lights. Impact on the AONB and Heritage Coast. Impacting tourism. Concerns about the rare and sensitive coastal landscape. Visible from Dunwich to Aldeburgh. 	<p>SCDC (now East Suffolk Council) Meeting; Local Community Members; SPS; SCC; Aldringham-cum-Thorpe Parish Council;</p>	31	<p>The visual impact of the wind turbines is assessed in Chapter 28 Offshore Seascape, Landscape and Visual Amenity.</p> <p>It will be navigational lighting that sits below the curvature of the earth so won't see a full suite of lights. There will also be aviation lights on the perimeter only and aviation lights that shine upwards.</p>

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	<ul style="list-style-type: none"> The fundamental change arising from the proposed combined windfarm developments and especially of EA2 on sea views from key coastal viewpoints is significantly harmful. Concerns over significant effects on coastal landscapes. Significant change to qualities and character of the AONB. Greater concentration of wind turbines closest to Orford Ness. The proposal would significantly impact upon the off-shore seascape at Dunwich and Orford Ness and would be visible from the Area of Outstanding Natural Beauty (AONB). The seascape forms part of the setting of the AONB. Concerns with the predicted offshore effects on seascape, coastal landscapes, character and qualities of the Suffolk Coast and Heaths Area of outstanding Natural Beauty (AONB), coastal receptors, settlements and users of the Suffolk/England coast path. In particular, the East Anglia Two (EA2) project will result in a significant change to the sea views from key viewpoints on the AONB coast including from Kessingland, Covehithe and Southwold, popular tourist destinations, with the result being a horizon that is cluttered with turbines. EA2 is closer to the shore than the existing East Anglia One (EA1) and consented East Anglia Three (EA3) arrays that have maximum turbine heights of 250m (rather than 300m). As such, the potential impacts arising from EA2 are greater. 	<p>SCC; SCDC (now East Suffolk Council); National Trust; Suffolk Coast and Heath AONB Partnership; Waveney District Council</p>		<p>The size of the wind turbines is related to how the offshore zones have been taken forward and the evolution of wind turbine technology. There are cost savings associated with larger wind turbines as fewer of them are required to generate the output needed.</p> <p>Potential impacts on the special qualities of the AONB are assessed in Chapter 28 Offshore Seascape, Landscape and Visual Amenity Assessment, of the ES.</p> <p>Visual effects on receptors at Orford Ness and Dunwich are assessed in Appendix 28.5 Visual Assessment and shown in the photomontages in Figures 28.32, 28.33 and 28.43 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity Assessment, of the ES. Effects on the landscape character of the AONB assessed in Appendix 28.4 Landscape Assessment of the ES.</p> <p>Embedded mitigation measures for the northward spread/cumulative effect is through a revised East Anglia TWO windfarm site layout, as described in section 28.3.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity Assessment of the ES, which provides mitigation of the horizontal spread of wind turbines and the cumulative 'curtaining' effect with East Anglia ONE North, by reducing the lateral spread and results in reduced effects arising from East Anglia TWO windfarm site on seascape, coastal landscapes and views from the AONB. Visualisations showing this mitigation (the difference between the East Anglia TWO</p>

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				<p>PEIR and ES Layouts) are presented in Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity Assessment, of the ES.</p> <p>Significant effects are assessed in Appendices 28.3-28.7 of the ES and summarised in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>The Tourism, Recreation and Socio-Economics chapter of the ES concludes that although the proposed East Anglia TWO project would have an effect on the seascape of the Suffolk coast, studies show that visitors to an area do not hold negative views of this type of development and would not be put off re-visiting an area.</p> <p>Embedded mitigation in the form of a revised East Anglia TWO windfarm site layout, as described in section 28.3.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES. Visualisations showing this mitigation (the difference between the East Anglia TWO PEIR and ES Layouts) are presented in Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES. Effects on views experienced by people at Kessingland, Covehithe and Southwold are assessed in section 28.8 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendix 28.5 Visual Assessment of the ES.</p>

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				Likely significant effects of the construction and operation of the offshore infrastructure assessed on these seascape, landscape and visual receptors are assessed in sections 28.6, 28.7 and 28.8 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES and Appendices 28.3 - 28.7 of the ES.
	Positive seascape comments <ul style="list-style-type: none"> Good distance from the shore. 	Local Community Member	1	Noted.
	Cumulative impact concerns <ul style="list-style-type: none"> Concerns over cumulative impacts with EA1N on seascape, coastal landscapes, character and qualities of the Area of Outstanding Natural Beauty (AONB). Significant change to sea views from key viewpoints on the AONB coast with the horizon cluttered with turbines. Concerns over cumulative impacts with existing windfarm arrays including EA1N and Galloper array on the character of East Suffolk shore and its immediate seascape areas. Concern over the EA offshore wind arrays and the proposed nuclear power station at Sizewell C and two interconnectors to Belgium and the Netherlands by National Grid Ventures. Dunwich Heath has low levels of light pollution and benefits from dark skies. This enables the 	SCC; SCDC (now East Suffolk Council); National Trust; Waveney District Council	8	<p>Embedded mitigation measures for the northward spread/cumulative effect is through a revised East Anglia TWO windfarm site layout, as described in section 28.3.3 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES, which provides mitigation of the horizontal spread of wind turbines and the cumulative 'curtaining' effect with East Anglia ONE North, by reducing the lateral spread and results in reduced effects arising from East Anglia TWO windfarm site on seascape, coastal landscapes and views from the AONB. Visualisations showing this mitigation (the difference between the East Anglia TWO PEIR and ES Layouts) are presented in Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Significant effects are assessed in Appendices 28.3-28.7 of the ES and summarised in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p>

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	Trust to host 'Stargazing' events at the site. Concern over in combination light pollution with Galloper and Greater Gabbard offshore wind farms and other infrastructure. Lighting will have an impact on the night sky for the lifetime of the development. It is requested that a lighting strategy and night-time CGI and visualisations from Dunwich Heath and Orford Ness are included with any submission to enable assessment of this issue.			<p>Cumulative Effects of the East Anglia ONE North and East Anglia TWO projects with the Sizewell C Project are assessed in Appendix 28.7 Cumulative Seascape, Landscape and Visual Assessment of the ES and summarised in section 28.9 of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES. Sizewell A and B, Galloper and Gabbard substations form part of the baseline. It was agreed with the Expert Topic Group that there is insufficient information to assess National Grid Ventures (Nautilus and Eurolink).</p> <p>The night-time viewpoint photograph locations shown in the PEIR were agreed with the Expert Topic Group, based on where people will actually be at night e.g. sea-fronts of key settlement receptors. They are sufficient to represent and understand the likely effects of aviation lighting in views from the coast. Few receptors would be at Orford Ness at night to experience a night time view. The nearest night-time viewpoint to Dunwich Heath is at Southwold, with night-time visualisation provided in Figure 28.28g-h of in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES; and the nearest to Orford Ness is at Aldeburgh (Figure 28.37f-g). These can be taken as a proxy to understand the likely effects of aviation at night-time on Dunwich Heath and Orford Ness.</p>
	Mitigation Suggestions	National Trust; Waveney District Council;	4	Embedded mitigation measures for the northward spread/effective is through a revised East Anglia TWO windfarm site layout, as described in section 28.3.3 of

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	<ul style="list-style-type: none"> 'Mitigation Hierarchy' has not been applied. Compensation should be provided through and AONB fund, secured through a legal agreement Mitigation could include a reduction in the height of the turbines or alterations to the layout of the arrays to minimise impacts. The SLVIAs identified significant effects from the offshore infrastructure of EA2 and EA1N and EA2 cumulatively on the AONB. The AONB and Heritage Coast are designations which are largely based on the tranquillity and unspoilt nature of the area. It is this natural asset which tourists come to visit. We are concerned regarding the harm caused to the purpose of the designations and the consequential impact on the tourist industry. This harm cannot easily be mitigated and therefore the Applicant should be providing compensation. 	SCC; SCDC (now East Suffolk Council)		<p>Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES, which provides mitigation of the horizontal spread of wind turbines and the 'curtaining' effect by reducing the lateral spread of East Anglia TWO windfarm site and provides more open sea separation between each separate offshore windfarm.</p> <p>Visualisations showing this mitigation (the difference between the East Anglia TWO PEIR and ES Layouts) are presented in Figures 28.55a – 28.60b of Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p> <p>Effects on tourism and recreation are assessed in Chapter 30 Tourism, Recreation and Socio-Economics of the ES.</p> <p>Both visual impacts to the seascape from the shore and the associated mitigation measures, are addressed in full in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p>
Landscape and Visual Impact	<p>Non-technical summary LVIA</p> <ul style="list-style-type: none"> The AONB Partnership are disappointed to note that the findings of the Landscape and Visual Impact Assessment, in respect of the impacts on the AONB, are not clearly identified in the non-technical summary documents that it considers will form the basis of many people's knowledge of the proposed schemes. The LVIA (Chapter 29) shows that the visual impacts upon the AONB will be significant and 	Suffolk Coast and Heath AONB Partnership; Suffolk Preservation Society	2	<p>The effects of the construction and operation of the onshore infrastructure on the AONB have been extensively considered in the LVIA (Appendix 29.3 Landscape Assessment and in Chapter 29 Landscape and Visual Impact Assessment of the ES, summarised in section 29.10). Significant effects on the AONB are assessed as being short-term during the construction phase (and therefore not permanent). The Applicant considers that the proposed East Anglia TWO project has paid due regard to the statutory purpose of the AONB, in so far as the proposed East Anglia TWO</p>

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	permanent. However, the Technical Summary fails to reflect the magnitude of impact and fails in its conclusions to make any reference at all to the AONB			project demonstrates good design and includes recognised mitigation, in particular through the design of the underground cables through the AONB; and the siting of the substation and National Grid infrastructure outside the AONB.
	<p>PEIR Policy</p> <ul style="list-style-type: none"> The AONB Partnership considers that to conform to EN1 that the proposed developments should not significantly negatively impact nationally designated landscape. The AONB Partnership considers that to conform to EN3 that the proposed developments should not have significantly negatively impact nationally designated landscape. Where there are significant adverse impacts these should be outweighed by environmental, social and economic benefits. The AONB Partnership considers that to conform to EN5 that the proposed developments should pay regard to the economic, social and environmental indicators of the AONB. Given the proposed undergrounding of cables it is satisfied that the Applicant have acknowledged the AONB in respect of connections between offshore infrastructure and proposed substation subject to an appropriate scheme of works to deliver this element. The AONB Partnership consider that the proposals need to be determined against the relevant National Policy Statements and Legislation. 	Suffolk Coast and Heath AONB Partnership	7	<p>Table 29.4 of Chapter 29 Landscape and Visual Impact Assessment. As recognised in NPS EN-1, 'Virtually all nationally significant energy infrastructure projects will have effects on the landscape'. The Applicant considers that the proposed East Anglia TWO project has been designed carefully, taking account of the potential effects on the AONB landscape and in order to minimise harm to the AONB and providing reasonable mitigation.</p> <p>Table 29.4 of Chapter 29 Landscape and Visual Impact Assessment. The Applicant considers that the proposed East Anglia TWO project demonstrates good design in respect of landscape and visual amenity, and in the design of the proposed East Anglia TWO project to mitigate effects on the AONB.</p> <p>The acknowledged mitigation of effects on the AONB through undergrounding of the necessary cables is welcomed.</p> <p>The Applicant considers that the proposed East Anglia TWO project has paid due regard to the statutory purpose of the AONB, in so far as the proposed East Anglia TWO project demonstrates good design and includes recognised mitigation, in particular through the</p>

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	<ul style="list-style-type: none"> The AONB Partnership considers that the Applicant as a statutory undertaker is required to pay due regard to the purpose of the AONB when undertaking its operations The AONB Partnership considers that the Applicant proposals for development require the proposals to meet the aims of the statutory AONB Management Plan. The AONB Partnership acknowledge that the proposal to underground the necessary cables from the offshore development to the substations which during operational phases will minimise the negative impacts on the nationally designated AONB. It is the AONB partnership view that this is coherent with NPS 5 and in particular paragraph 2.8.9. 			<p>design of the underground cables through the AONB; and the siting of the substation and National Grid infrastructure outside the AONB. Effects on the special qualities of the AONB are assessed in Appendix 29.3 Landscape Assessment and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment.</p> <p>The applicant consider that the proposed East Anglia TWO project meets the aims of the statutory AONB management plan, in so far as the proposed East Anglia TWO project seeks to avoid damage to the natural beauty of the AONB through good siting and design/mitigation, in particular through the design of the underground cables through the AONB; and the siting of the substation and National Grid infrastructure outside the AONB. Effects on the special qualities of the AONB are assessed in Appendix 29.3 Landscape Assessment and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment of the ES. Table 29.4 of Chapter 29 Landscape and Visual Impact Assessment. The applicant notes that the AONB partnership are of the view that during the operational phase, the proposed East Anglia TWO project will minimise negative impacts on the AONB and that it is coherent with NPS 5.</p>
	<p>PEIR Methodology</p> <ul style="list-style-type: none"> SPS considers that the Applicant has a duty to consider the purposes of the nationally 	Suffolk Preservation Society	2	<p>The effects of the construction and operation of the onshore infrastructure on the AONB have been extensively considered in the LVIA (Appendix 29.3 Landscape Assessment and in Chapter 29 Landscape</p>

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	<p>designated AONB for these developments as outlined in DEFRA's guidance note (the relevant section is reproduced below from the DEFRA publication Product code PB 10747 REV 1/07):</p> <ul style="list-style-type: none"> Additionally, it may sometimes be the case that the activities of certain authorities operating outside the boundaries of these areas may have an impact within them. In such cases, relevant authorities will also be expected to have regard to the purposes of these areas 			and Visual Impact Assessment of the ES, summarised in section 29.10). Significant effects on the AONB are assessed as being short-term during the construction phase (and therefore not permanent). The Applicant considers that the proposed East Anglia TWO project has paid due regard to the statutory purpose of the AONB, in so far as the proposed East Anglia TWO project demonstrates good design and includes recognised mitigation, in particular through the design of the underground cables through the AONB; and the siting of the substation and National Grid infrastructure outside the AONB.
	<p>PEIR Impacts</p> <ul style="list-style-type: none"> The bringing on-shore of cables from EA2 and EA1N within the AONB is not ideal. That decision has involved technical considerations that NE cannot address but the examination process will confirm whether potential alternatives have been properly assessed. Assuming that the case for coming ashore in the AONB is upheld then NE is content that the embedded mitigation can deliver an operational scheme which will not have a significant impact on the statutory purpose of the area. The impact of the construction will be significant. We would like to add that an important additional mitigation measure could be to find ways to speed up the completion of the cable route, albeit without compromising on care and attention to reinstatement, so that this part of the AONB can 	NE	8	<p>Noted. Please refer to Section 4.8 in Chapter 4 Site Selection and Assessment of Alternatives of the ES which describes the site selection process and alternatives for landfall. Appendix 4.6 Coastal Processes and Landfall Site Selection to Chapter 4 Site Selection and Assessment of Alternatives of the ES demonstrates the Applicants consideration of coastal processes, landfall siting and alternatives early in the process. The Applicant welcomes the agreement that the embedded mitigation can deliver an operational scheme which will not have a significant impact on the statutory purpose of the AONB.</p> <p>Noted. The Applicant will explore the possibility of speeding up the construction programme post-consent through the detailed design process. See section 6.9.6</p>

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	<p>return to its role in helping to deliver the statutory purpose of the area as soon as possible</p> <ul style="list-style-type: none"> An active construction period of three to four years may be 'short term' but this is still sufficient time to establish a long term change in how people view and value this part of the AONB. Those seeking to enjoy the special qualities of the AONB, including its relative tranquillity will as 'receptors' be highly sensitive to an active 32 metre wide, 3km long construction corridor with fencing, lighting and heavy construction traffic and vehicles on the haul and access roads. The LVIA (para 12) says that: 'the undergrounding infrastructure at the landfall and within the onshore cable route is unlikely to result in significant effects and these matters can be scoped out of the assessment, as agreed with the Planning Inspectorate. These matters are not assessed any further in the technical assessments...' Relevant to this the PEIR provides an assurance of no above ground infrastructure being left after construction. This is welcomed and other parts of the Environmental Statement state that link boxes required at each jointing bay will also be buried. This differs from other undergrounding schemes where those link boxes have been located above ground. The LVIA identifies a range of significant impacts from the landfall and undergrounding construction works and no significant effects for the operational phase. We agree that this is what can be 			<p>in Chapter 6 Project Description of the ES for an indicative refined programme.</p> <p>Effects of the construction of the onshore infrastructure on the AONB special qualities are assessed in Appendix 29.3 Landscape Assessment and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment. Potential for additional mitigation measures to increase speed of construction are noted.</p> <p>Effects of the construction of the onshore infrastructure on AONB special qualities are assessed in Appendix 29.3 Landscape Assessment and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment.</p> <p>The use of buried link boxes within underground chambers is confirmed in the Chapter 6 Project Description and in the parameters in Table 29.2 of Chapter 29 Landscape and Visual Impact Assessment. All link boxes will be underground, not in above ground cabinets.</p> <p>The Applicant welcomes agreement that significant effects on the AONB should be limited to the construction phase and there should be no significant effects on the AONB during the operational phase (assuming best practice is followed in terms of re-instatement). Construction techniques will involve the careful removal, conservation and reinstatement of sub and top soils.</p>

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	<p>expected if the final route is carefully selected and best practice is followed in terms of reinstatement. A principal landscape risk from undergrounding cables or pipelines is that changes to soil structure and drainage can produce changes to surface vegetation which can permanently mark out the route of the cable or pipe across the landscape. The careful removal, conservation and reinstatement of sub and top soils is therefore crucial. We know that this reinstatement can be very successful across 'ordinary' arable and improved pasture land. The risks are much greater where other natural and semi-natural habitats and vegetation are involved because they are much more susceptible to alterations to soil conditions and may never successfully recolonise the construction corridor.</p> <ul style="list-style-type: none"> "In relation to this we note that whilst arable and some pasture dominate the proposed route corridor there are two locations where woodland or scrub may be impacted. These areas are small and we cannot attest to their actual condition but from a landscape perspective they appear to be features which help to break up the otherwise farmed corridor between the coast and Leiston and so add some variety and character, as well as being associated with rights of way. As such options for minimising or avoiding harm to them should be explored, including of course replanting the affected sections of these vegetation belts in a 			Proposals for minimising or avoiding harm at these two locations are set in section 29.3.4.2 of Chapter 29 Landscape and Visual Impact Assessment.

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	<p>way that is compatible with the buried cables. The two locations are:</p> <ul style="list-style-type: none"> South west of Dower House and a short distance from the coast where a patch of broadleaf woodland abuts a byway with just a small gap separating this from woodland associated with Dower House. This leaves a very narrow gap through which the route could go without perhaps impacting on either. A band of continuous scrub (described as such by the ecology report) running south east from Halfway Cottages and also associated with a footpath and linked to the adjacent and extensive area of heathland." 			
	<p>PEIR Cumulative Impacts</p> <ul style="list-style-type: none"> The AONB Partnership considers that the in combination impacts of the proposals with existing developments such as Sizewell A, Sizewell B, the proposed Sizewell C, the proposed interconnectors (Nautilus and EuroLink) and wind energy infrastructure of Galloper and Gabbard have not been fully acknowledged or assessed. The AONB Partnership consider that the in combination impacts of the proposed EA1N and EA2 offshore infrastructure on some of the designating factors for the AONB, namely 	Suffolk Coast and Heath AONB; NE	9	<p>Visual effects on residents of Friston assessed in Appendix 29.5 Cumulative Impact Assessment and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment of the ES.</p> <p>Landscape and visual effects of the construction of the onshore infrastructure on the landscape quality, scenic quality and relative wildness of the AONB are assessed in Appendix 29.4 Visual Assessment and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment of the ES.</p> <p>England Coastal Path proposals to incorporate the Suffolk Coastal Path will be finalised and published in</p>

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	<p>landscape quality and relative wildness, to be significant.</p> <ul style="list-style-type: none"> The AONB Partnership note that the Landscape and Visual Impact Assessment has assessed the impact of the proposals from agreed viewpoints. However, it notes the development of the England Coast Path and would wish to see a further assessment of the development proposals based on those experiencing the AONB using the enhanced access entitlement. The AONB Partnership consider the need for an assessment of the impacts of users of the proposed England Coast Path. It acknowledges that it could not represent the experience from every step on the proposed England Coast Path but an assessment of the unbroken impacts for those using the route. Impacts on the AONB designation factors such as landscape quality, scenic quality, relative wildness and relative tranquillity are significantly impacted in respect of the in combination impacts of EA1N, EA2 and existing and proposed energy production infrastructure on the Suffolk Coast and are not coherent with the purposes of the AONB. With the in-combination effect of several foreseeable and identified projects impacting on the AONB, NE wishes to see that all parties consider landscape net gain opportunities. And that there is an agreement on how this could be achieved with the AONB partnership in consultation with NE and others. 			<p>autumn 2019 and the new access is expected to be ready in 2020. In the meantime, the SLVIA assesses effects on users of the Suffolk Coastal Path, in Appendix 29.4 Visual Assessment and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment.</p> <p>Enhancement measures will be considered and discussed with stakeholders in a process separate to this EIA and DCO application.</p> <p>The applicant welcomes the support of the embedded mitigation for the onshore components of the scheme. The assessment undertaken in the LVIA (Appendix 29.4 Visual Assessment and 29.5) concurs that significant effects on the AONB should be limited to the construction phase and there should be no significant effects on the AONB during the operational phase.</p> <p>Agreement of the findings of the cumulative LVIA with Sizewell C (Appendix 29.5) are welcomed. Effects on tourism and recreation are assessed in full in Chapter 30 Tourism, Recreation and Socio-Economics. The NTS and Conclusions have been updated in line with ES chapters so that any change in impacts (and Section 42 comments on the NTS) are reflected in the ES.</p> <p>Clarification is provided in Appendix 29.5 and section 29.7 of Chapter 29 Landscape and Visual Impact</p>

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	<ul style="list-style-type: none"> The PIER and LVIA confirm a significant cumulative impact during the construction phase with the construction of Sizewell C. We support this conclusion and would add that the power station project and cable route could be discerned as part and parcel of the same scheme by the public. With both projects coinciding the public may also view this part of the AONB as being dominated by major construction and so avoid going there. Because of this we would question whether the conclusion at para 174 of the Non-Technical Summary is fully justified i.e. 'No significant tourism and recreation impacts were predicted as a result of the proposed East Anglia Two project. Tourism and recreation receptors would experience minimal visual impacts and only temporary physical obstruction, noise and traffic impacts'. The LVIA identifies the significant cumulative construction phase visual and landscape effects with Sizewell C as being 'medium term' which, using the LVIA's own categorisation equates to five to ten years. This contrasts with the expected three to four years (short term) for construction of the onshore infrastructure. This may be because the cable route construction will take that long but reinstatement would take longer and so a recovering cable route would continue to have an adverse effect in combination with the power station construction site, for an extended period? We would like clarification of this. 			Assessment for cumulative construction phase visual and landscape impacts.

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	<ul style="list-style-type: none"> With the in-combination effect of several foreseeable and identified projects impacting on the AONB, NE wishes to see that all parties consider landscape net gain opportunities. And that there is an agreement on how this could be achieved with the AONB partnership in consultation with NE and others. 			
	<p>Project Design</p> <ul style="list-style-type: none"> If a landscaping scheme is proposed as part of the proposal, we request that only slow and low growing species of trees and shrubs are planted beneath and adjacent to the existing overhead line to reduce the risk of growth to a height which compromises statutory safety clearances. 	National Grid	1	OLMP (presented in the OLEMS (Document Reference: 8.7) submitted with this DCO application). Only slow growing low height species are proposed beneath overhead line conductors. Sufficient clearance has been maintained between overhead lines and trees/vegetation in the OLMP, with a precautionary 25m buffer applied for woodland planting areas.
	<p>Viewpoints</p> <ul style="list-style-type: none"> Additional illustrative viewpoints should be added from Suffolk Coastal Path, Snape Maltings and Grove Road. There should be a viewpoint from Grove Road. The conclusion that the impact will only cause long term severe effects in three defined viewpoints (Saxmundham Road, Aldeburgh Road and Grove Wood) is dubious. The series of views from Grove Road in particular stand to be entirely altered by the development proposals and further consideration should be given to this point in order to accurately capture the full extent of the proposal's impact. 	SLVIA/ LVIA Expert Topic Group 2 (Suffolk Coastal and Waveney District Council (now East Suffolk Council) and NCC); SPS; Friston Parish Council / SASES; Suffolk Energy Action Group	2	<p>Two viewpoints were included from Grove Road in the PEIR at Viewpoint 3 (Figure 29.15) and Viewpoint 4 (Figure 29.16). An additional viewpoint has been added to the ES at the closest point of Grove Road at Viewpoint 14 (Figure 29.26).</p> <p>The ZTV in Figure 29.7 (of the ES) shows that there is no visibility of the substations from Snape Maltings, due to screening by intervening landform and vegetation.</p> <p>The SLVIA assesses effects on users of the Suffolk Coastal Path, in Appendix 29.4 Visual Assessment and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment of the ES.</p>

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	<p>Assessment Methodology</p> <ul style="list-style-type: none"> A screening exercise should be undertaken for sensitive receptors outside the Proposed Development Area which could benefit from early / additional offsite planting. Bunding should be included in the LVIA. The Planning Inspectorate's scoping document registered concerns about the risk of unnecessary illumination was not covered in the PEIR. Not enough detail on the use of artificial lighting for several hours each day during the Autumn/ Winter periods. The Applicant will employ a series of stand-alone generator/lighting sets along the entire length of the cable trench and haul road and exits to the public highway. Volume 1, Part 1, Chapter 6 states that there will be no 24 hour lighting anywhere along the cable construction route, unless a specific task requires it. The PEIR fails to state that there will be lighting at other times. There is usually a 500m standard distance to residents rather than 250m. (This was used for Galloper Substation and a 600m radius was used at Bramford). The PEIR has not included landscaping or other mitigation measures. Inadequate level of information on impacts on landscape value. Short/long term impacts of lightening not assessed in enough detail. 	<p>SLVIA/LVIA Expert Topic Group 2 (Suffolk Coastal and Waveney District Council (now East Suffolk Council) and NCC); Landscape Mitigation Plan Meeting (SCDC (now East Suffolk Council), SCC, Suffolk Coastal and Waveney District Council (now East Suffolk Council) and Historic England); Local Community Members; Friston Parish Council / SASES; SCC; SCDC (now East Suffolk</p>	35	<p>Lighting effects have been taken into account within the assessment methodology. More detail is provided in Appendix 29.2 LVIA Methodology of the ES. An Artificial Light Emissions Management Plan will be prepared under Requirement 21 of the draft DCO, and which will be submitted to the Local Planning Authority for approval prior to construction commencing. The approved scheme will be maintained throughout the construction of the relevant works</p> <p>A target buffer of 250m from residential properties was applied following consultation with Suffolk Coastal and Waveney District Council at the July 2017 Site Selection Expert Topic Group. The onshore substation(s) site selection study area was subdivided into zones based on available space for co-location of the onshore substation and the National Grid substation, whilst minimising interaction with the 250m buffer on residential properties as much as is possible.</p> <p>The Applicant has used Lidar data to ascertain 1m contours for the substation site. These contours are used to inform the substation site design, masterplan and assessments. An updated version of the landscaping proposals (including contour mapping) is presented within the OLEMS (Document Reference: 8.7) submitted with this DCO application.</p> <p>Landscape and visual effects of the construction of the onshore infrastructure on the tranquillity of the AONB</p>

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	<ul style="list-style-type: none"> Inappropriate assessment of impacts to pedestrians in Friston. There is considerably less tree planting proposed and where planting is shown, it appears to relate directly to the chosen viewpoints in order to show these in a good light, e.g. Viewpoint 1 from Grove Road, 15 year maturity period for effective screening incorrect EA1 and EA3 sites cannot be comparable, as Bramford is an already industrialised landscape with existing substations and electrical infrastructure, with residential dwellings and settlements much further away. Unacceptable that magnitude of change has been assessed as 'medium high' as the proposed landscaping cannot mitigate this in either the short to long term. Other than the views from the cycle route on Grove Road, there is no reference to the visual impact on cyclists, only motorists. The reports attempt to divide the village into different areas Unsatisfactory that the Applicant have excluded this project from their Visual Impact Assessment Leaving aside the impact of other projects such as Nautilus and Eurolink, even on the Applicant's flawed assessment, screening by tree planting will not be effective until at least the 2040s, and never fully effective on the approach roads to Friston. The masterplan does not include any details of the levels of the site. The Councils are not 	Council); Public Health England		<p>are assessed in Appendix 29.3 Landscape Assessment and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment.</p> <p>Further review of landscape receptors sensitivity (susceptibility and value) has been undertaken and reflected in the updated sensitivity assessments and significance judgements in the LVIA in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment and Appendices 29.2-28.4.</p> <p>Agreement on the conclusions that significant effects of the onshore substations will occur within a localised area is welcomed. 'With mitigation' impact assessments (at 15 years) have been updated to address changes in National Grid Infrastructure, the updated OLMP (presented in the OLEMS (Document Reference: 8.7) submitted with this DCO application) and revised assumptions for woodland heights at 15 years post planting. Heights of woodland planting at 15 years post planting have been reduced from PEIR, to address feedback from SCC/ESC, guidance and precedents from other NSIP projects. 'With mitigation' impact assessments have been updated in Appendix 29.3 Landscape Assessment and 29.3 (visual effects) and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment.</p> <p>The photomontage visualisations in Figures 29.13 – 29.26 show the proposed National Grid overhead line</p>

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	<p>satisfied that the various assessments adequately recognise the sensitivity and value of the receiving landscape outside the AONB.</p> <ul style="list-style-type: none"> The definitions and evaluation of Susceptibility Value and Sensitivity of the receiving landscape and other receptors require a systematic review and discussion between the Councils and the Applicant to ensure that the findings of the final LVIA submitted are robust. The Applicant are expected to put forward a comprehensive program of landscape restoration to ensure that harm to the fabric of the landscape is restored and such that there are no long term residual adverse effects arise. All areas of woodland, hedgerows and tree cover that need to be removed should be surveyed in detail prior to removal to inform existing landscape fabric baseline. Tree species presented in mitigation are unsuitable to prevailing landscape character and are not native species. The Councils note the conclusions of both Chapter 29s and agrees that the presence of the onshore windfarm infrastructure will have significant visual effects on views experienced by people in the local area near Friston, but do not necessarily agree that these will become 'not significant' 15 years post planting, as this will very much depend on the rate of establishment and growth of new planting. the Applicant state (224) that landscape mitigation planting will be coming 			<p>modifications, including sealing end compounds. This National Grid infrastructure is also shown in the OLMP (presented in the OLEMS (Document Reference: 8.7) submitted with this DCO application) together with proposed mitigation. The landscape and visual impacts assessed in Appendix 29.3-29.5 and summarised in Chapter 29 Landscape and Visual Impact Assessment include these National Grid overhead line modifications and infrastructure.</p>

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	<p>into maturity at 15 years post planting. The Councils consider that this claim is unreliable because newly planted trees at 15 years post planting cannot be considered to be mature. At best they can only be regarded as maturing. East Suffolk can suffer notably dry summers and growth rates of new tree planting that can be reliably predicted in wetter parts of the country, cannot necessarily be relied on in East Suffolk. The Councils consider that the conclusion of 'not significant' at 15 years post planting in this respect cannot be assured."</p> <ul style="list-style-type: none"> The LVIA's for each project do not include an assessment of the infrastructure associated with the connection of the National Grid substation to the overhead lines which will include up to four sealing end compounds and potentially one additional pylon associated with the overhead line realignment works. The Non-Technical Summary does not adequately reflect the findings of the LVIA. It is important to ensure that any impact on tranquillity in open spaces is considered. 			
	<p>Comments on the Impact on the character of the AONB</p> <ul style="list-style-type: none"> The AONB Partnership, have concerns about the negative impact on the features of AONB designation, for example tranquillity, landscape quality, scenic quality, relative wildness, natural 	Suffolk Coast and Heath AONB Partnership; NE	10	Effects of the onshore infrastructure on landscape character of the AONB are assessed in Appendix 29.3 Landscape Assessment of the ES. Visual effects are assessed in Appendix 29.4 Visual Assessment of the ES. Both are summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment.

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	<p>heritage features and cultural heritage during the onshore construction phase.</p> <ul style="list-style-type: none"> This concern is particularly acute relating to the character of the AONB, its long distance and panoramic views, the introduction of human activity at an industrial scale, the reduction in features associated with tranquillity and seascape character. The AONB Partnership have concern about the impact on the nationally designated AONB during the construction phase of the installation of the cables. In particular it raises concern about: Impacts on landscape quality during construction and operation. The installation of underground cables will have a temporary negative impact on the AONB' landscape quality. It is further noted that infrastructure related to maintenance and inspection of the underground cables could have adverse impacts on the AONB. Impacts on scenic quality during construction. The installation will have a negative impact on large vistas and long views during construction. The characteristic stimuli of light and space will be negatively impacted during the construction phase. Impacts on relative wildness during construction. The introduction of large scale construction work including haul roads and the introduction of an obvious human influence during construction will adversely impact the AONB features. 			<p>Landscape and visual effects of the construction of the onshore infrastructure on the landscape quality, scenic quality and relative wildness of the AONB are assessed in Appendix 29.3 Landscape Assessment of the ES and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment.</p> <p>Landscape and visual effects of the construction of the onshore infrastructure on the tranquillity of the AONB are assessed in Appendix 29.3 Landscape Assessment of the ES and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment.</p> <p>Landscape effects of the construction of the onshore infrastructure on the special qualities of the AONB are assessed in Appendix 29.3 Landscape Assessment of the ES and summarised in section 29.6 of Chapter 29 Landscape and Visual Impact Assessment of the ES. The AONB previously recognises that undergrounding of the onshore cables will minimise the negative impacts on the nationally designated AONB during the operational phase. The siting of the East Anglia TWO onshore substation and National Grid infrastructure outside the AONB avoids significant effects on the special qualities of the AONB.</p> <p>Landscape effects of the construction of the onshore infrastructure on the special qualities of the AONB are assessed in Appendix 29.3 Landscape Assessment of the ES and summarised in section 29.6 of Chapter 26</p>

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	<ul style="list-style-type: none"> The AONB Partnership have concern about the impact on the nationally designated AONB during the construction phase of the installation of the cables. In particular it raises concern about: <ul style="list-style-type: none"> Impacts on relative tranquillity during construction. The introduction of a major construction site will negatively impact the purposes of the AONB in terms of the introduction of noise, light and presence of construction activity itself. The AONB Partnership consider that the impacts on the AONB designation factors such as landscape quality, scenic quality, relative wildness and relative tranquillity are significantly impacted in respect of the EA2 and are not coherent with the purposes of the AONB. Proposals should be revised to remove significant adverse impacts on the nationally designated AONB. NE welcomes the confirmation in the LVIA that the landfall selection has sought 'to avoid the most sensitive landscapes of the AONB' and that the onshore cable route site selection has sought, 'wherever possible, to locate the cable route through open agricultural land'. NE officers have surveyed much of the proposed route corridor and it appears to mostly feature a continuity of arable farmland with some pasture within the AONB. 			<p>Landscape and Visual Impact Assessment of the ES. Cumulative Effects with the Sizewell C Project are assessed in Appendix 29.5. The AONB previously recognises that undergrounding of the onshore cables will minimise the negative impacts on the nationally design. The siting of the East Anglia TWO onshore substation and National Grid infrastructure outside the AONB avoids significant effects on the special qualities of the AONB.</p> <p>The Applicant considers that the proposed East Anglia TWO project minimises adverse effects on the special qualities of the AONB, in so far as the proposed East Anglia TWO project demonstrates good design and includes recognised mitigation, in particular through the design of the underground cables through the AONB which limit significant effects to the construction stage; and the siting of the substation and National Grid infrastructure outside the AONB, which avoids significant effects on the special qualities of the AONB.</p> <p>The Applicant welcomes agreement that the aim of locating the onshore cable route through less sensitive agricultural (arable/pasture) land has largely been achieved.</p>
	Landscape and Visual Impact	SCDC (now East Suffolk	273	Landscape management plans have been further developed since PEIR, based on consultation feedback

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	<ul style="list-style-type: none"> Concerns over substation master planning visual impacts. Concern over damaging unspoilt rural landscape. Visual impact on all routes into Friston. Substation will dominate the village. Change to historical landscape. Residual landscape impact. Mitigation planting not sufficient – trees will take a long time to establish and grow (10-15 years). Impacting tourism. Visual impact from the church. No plans to minimise height, landscape or build underground. Awful appearance in photomontages. Out of proportion with the nature of the landscape. Cable route impact on Aldringham Special Landscape Area by the Hundred River – potentially long term impact. Loss of view from bed and breakfast (Manor Farm). Visual impact reducing value of property. View of cable route and haul road from bed and breakfast (Manor Farm) during construction. Impact on rural setting of Manor Farm and Bull's Hall. Visual impact of loss of woodland beside Fitches Lane. Impact on the character of the village. Sizewell Gap Road currently has a rural approach to the beach which will be changed by the 	<p>Council) Meeting; Local Community Members; Church of St Mary the Virgin, Friston; Leiston- cum-Sizewell Town Council; Suffolk Coast and Heath AONB Partnership; Suffolk Preservation Society, Friston Parish Council / SASES, Therese Coffey; Suffolk Energy Action Coalition; Darsham Parish Council; Aldringham- cum-Thorpe Parish Council; Suffolk Energy Action Group; National Trust</p>		<p>and in liaison with the Local Planning Authority and stakeholders within the Expert Topic Groups and other regular meetings. The updated landscape management plan will be presented within visualisations and the OLEMS (Document Reference: 8.7), submitted with the application.</p> <p>Mitigation measures associated with the onshore substation and National Grid infrastructure form part of a strategic approach to enhancing landscape character and biodiversity in the local area. The OLMP (presented in the OLEMS (Document Reference: 8.7) submitted with this DCO application) shows how mitigation planting would contribute to the wider landscape structure of the area and has been designed to screen the onshore project substation and help consolidate green corridors for wildlife. Details of the mitigation planting are presented in Section 29.3.4 of Chapter 29 Landscape and Visual Impact Assessment of the ES. For other Landscape and Visual Impact embedded mitigation, see Table 29.4 of Chapter 29 Landscape and Visual Impact Assessment of the ES.</p> <p>An OLMP (presented in the OLEMS (Document Reference: 8.7) submitted with this DCO application) has been produced in consultation with SCC/SCDC (now East Suffolk Council) and further to feedback at Public Information Days. Proposed woodland planting areas have been updated to respond to local character</p>

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	<p>proposed traffic and intended works alongside this road.</p> <ul style="list-style-type: none"> Concern over visual impact of pylon which will be 27m high and NG pylons. Mitigation measures will be inadequate for the pylons. Insulators and high level cabling will be visible. Buildings will be 15m high and with harmonic filters up to 18m. AONB is a rare and fragile landscape. Visual impact of removal of hedgerows. The cable route south of Aldringham Court, where it is required to remove many trees which cannot be replanted, is of great concern. Impact of building three large buildings in an AONB. Disturbed vistas. Screening is inadequate for users of Grove Road. Site is too close to Friston for any screening to be fully effective. Impacts to trees and meadows. Concerns over planning of mitigation planting – area of low rainfall so how will the plants grow. Loss of features associated with tranquillity. Impacts to unhindered views across a flat landscape. The proposed SUDs would also cause further landscape damage. Currently the field (near Grove Road) has no boundary features whatsoever, and the site would 			<p>and tree species have been updated to include only native species. SUDs basins have been located to the west and south-west of the substations. The OLMP is considered to afford the potential for an effective scheme of mitigation of the landscape and visual impacts of the onshore substations.</p>

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	<p>be totally open to view during construction and many years thereafter.</p> <ul style="list-style-type: none"> Concern over visual impact from haul road near Friston, on both residents and tourists. Concerns over only doing mitigation after substation construction, planting should begin immediately after planning consent is given. The cable network required to service the substations, including the positioning of sealing end compounds, will have a significant negative impact on the landscape. The positioning of four sealing end compounds requires clarification as, to date, insufficient information has been provided to allow their impact to be properly considered. The proposed substation occupies almost all of the site area leaving very limited space for any meaningful future landscape screening. 			
	<p>Light pollution</p> <ul style="list-style-type: none"> Light pollution during construction. Light pollution during operation. Impact on dark night skies. Lighting at Haul Road CCS at Fitches Lane and on the River Hundred SLA between Aldeburgh Road and Thorpe Road which would have a damaging impact on residents and on the many species of nocturnal animals in those areas currently enjoying dark skies. 24 Hour security lighting. Artificial light to mitigate concerns regarding safety and security, merely transfers the 	<p>Local Community Members; Church of St Mary the Virgin, Friston; Friston Parish Council / SASES; Aldringham-cum-Thorpe Parish Council; Suffolk Coast and Heath</p>	73	<p>The OCoCP (Document Reference: 8.1) and the Artificial Light Emissions Management Plan will contain details on how lighting will be managed on site. For example, site lighting will be positioned and directed to minimise nuisance to footpath users and residents, to minimise distractions to passing drivers on adjoining public highways and to minimise sky glow, so far as reasonably practicable. Lighting spillage will also avoid or minimise impacts on ecological receptors, including nocturnal species.</p> <p>In addition, construction lighting will be limited to between 7am and 7pm in low light conditions with lower-</p>

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	<p>unwanted environmental burden to local residences and will be vigorously opposed on the ground of environmental pollution.</p> <ul style="list-style-type: none"> No statement that the Applicant will adhere to the UK Government National Planning Policy Framework guidance on light pollution. Concerns over artificial light use 6 months of the year and references to Diesel generator sets. The Applicant has given vague and generalised attention to lighting, only considered the impact on bats and not on people and birds (among others) who are also sensitive. Aldringham-cum-Thorpe PC are concerned that 24-hour lighting is proposed at the Landfall site and at the Elm Tree Farm Construction Compound as well as other locations, for security purposes. It is also anticipated that with extended day working for the winter months lighting will be required for safe working, supported by diesel generators, in all working areas including the landfall site, the cable route and the substations. 	AONB Partnership		<p>level security lighting outside of these times to reduce impacts.</p> <p>As part of embedded mitigation measures, the onshore substation has been designed so that it does not require to be permanently lit at night during the operational phase, with passive lighting (passive infra-red). Task and vehicle lighting may be used in the hours of darkness during approved working hours.</p>
	<p>Cumulative Impact</p> <ul style="list-style-type: none"> Highly visible offshore windfarm related infrastructure will be visible on the flat landscape. 	Leiston-cum-Sizewell Town Council; Local Community Member	2	<p>Embedded mitigation measures that have been adopted as part of the evolution of the project design. The East Anglia TWO windfarm site is located within the former East Anglia Zone, whose location was sited outside territorial waters following feedback on its consultation. The 'Round 3 plan/programme' was considered under SEA which noted that the siting of Round 3 zones outside territorial waters, 8km off undesignated coasts and 13km off AONB and heritage coasts, would help</p>

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				mitigate potential visual impacts. Following feedback to the PEIR, the Applicant investigated the potential to reduce the East Anglia TWO windfarm site area to reduce the magnitude of effect on onshore receptors. The revised design presented in this ES therefore represents a reduction in the geographic extent of the East Anglia TWO windfarm site, whilst maintaining its generation capacity. The change has resulted in the following cumulative effect: the revised layout is likely to reduce cumulative landscape and visual effects on the AONB. This is primarily due to the increase in open sea horizon or 'gap' between the East Anglia TWO and East Anglia ONE North windfarm sites; which increases the legibility of each as a windfarm in its own right (rather than visually merging to form one larger array). This change affords mitigation of the 'curtaining' effect of the conjoined layouts that was the subject of responses to the PEIR; and cumulative effects most likely to reduce from northern viewpoints/parts of the AONB, such as between Kessingland and Southwold, where the increased 'gap' or 'space' between East Anglia TWO windfarm site and East Anglia ONE North windfarm site is most evident.
	Mitigation of Visual impact <ul style="list-style-type: none"> Substation should be well screened. Vegetation planting should be used to reduce visual impact. 	Local Community Members; SPS; Aldeburgh Society; Suffolk	79	Discussions with Local Planning Authorities has been had to ensure successful planting is carried out. Big blocks of woodland will be younger trees however the Applicant will look to improve hedgerows too in order to

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	<ul style="list-style-type: none"> An irrigation and maintenance plan should be implemented for the tree screening. Bunding to reduce light pollution. Substation should be lowered into the ground/ substation should be underground. Were informed that sinking the substation, using large trees and land banks were too expensive. Proposals should be built in a dip in the land. Planting should be done as soon as the project is approved to give time for trees to establish. Impacts should be minimised on long path towards Friston Church. The walk has existed in its presently for over 600 years. There is a strong relationship between the church and the farmhouses. There should be 'extensive' tree planning utilising 1800mm standards, as opposed to whips, to ensure that from the outset there is improved woodland mitigation. Reduce the height of the substation. Department of the Environment-approved plan should be made to mitigate visual impact, by planting trees and shelter beds Substations should be away from higher ground. An entire field between the substation and the village should be planted with woodland to provide more protection. Mitigation should go further than net-loss, enhancement and improvements to the landscape should be embedded into the report. 	Coast and Heath AONB Partnership; Friston Parish Council / SASES, Therese Coffey; Aldringham-cum-Thorpe Parish Council; SCC; SCDC (now East Suffolk Council)		<p>provide screening. The OLEMS (Document Reference: 8.7) will be submitted with the DCO application</p> <p>Landscape management plans have been further developed since PEIR, based on consultation feedback and in liaison with the Local Planning Authority and stakeholders within the Expert Topic Groups and other regular meetings. The updated landscape management plan will be presented within visualisations and the OLEMS (Document Reference: 8.7), submitted with the application.</p> <p>The Applicant is committed to working with Local Planning Authority to develop a comprehensive scheme of offsite planting. This will be agreed outside this Environmental Statement as it cannot be agreed through the DCO process. The Applicant has presented initial proposals to the Local Planning Authority for discussion. Noted. The Applicant is committed to working with the Local Planning Authorities through the post-consent detailed design phase of the project to discharge the conditions of the DCO.</p> <p>National Grid substation with AIS electrical infrastructure is assessed as the realistic worst-case in the LVIA and is shown in the photomontage visualisations in Figures 29.13-29.26. Visualisations showing the National Grid substation with GIS electrical infrastructure have been produced in Figures 29.27 - 29.40 for comparison.</p>

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	<ul style="list-style-type: none"> • If consent is to be granted, then the infrastructure must be built into the land so that the visual and physical impact is heavily mitigated – ideally no higher than the size of a three storey house. • Low growing evergreens that reach their height quickly would really help keep the setting of the village feeling and looking as good as possible. • Suggest a long term monitoring and management scheme is put in place. It could involve local people to give a sense of ownership too. It is especially important to get maximum growth by mulching and watering in this dry area. • Large pines and other evergreens as seen locally could provide screening of the taller structures. • Deep/dense swathes of deciduous trees could provide winter screening as the leaves are not there for half of the year and the position of these plantings needs much more careful assessment because the very rough map that the Applicant showed so far shows they have not paid any attention to details on the ground. • A better designed area of planting north of Friston could be put in place that joins up Grove wood to the woodland area south west of the three proposed substations sites providing a wide swathe of wildlife habitat and connecting corridor. • Consultation regarding screening should be done with local people, parish councils and NE or similar. • Mitigation should be applied to all of the onshore works and facilities, including minimising heights 			<p>The DCO process will enable the Local Planning Authorities to sign-off the conditions of the DCO only when satisfied. The design of substation infrastructure can evolve and change when greater certainty regarding the project is obtained through detailed design post-consent. This includes the ancillary buildings and perceived 'visual clutter'.</p>

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	<p>of any installations, adopting appropriate colour schemes, providing adequate screening and noise reduction measures and reducing the building footprints to an absolute minimum</p> <ul style="list-style-type: none"> • Use more mature specimens in particularly sensitive spots. • It could be planned carefully so that screening and banking be prioritised around all 6 of the Construction Consolidation Sites, the temporary access roads and all other areas that will otherwise be a total eyesore for many years. • More creative mitigation strategies must be applied to minimise the impacts of the onshore infrastructure on the visual landscape. • Planting should fit in with the surrounding landscape character and pattern. • The current planting scheme does not take into account existing landscape pattern. • The levels of the site need to be fully understood in order to understand the effectiveness of the proposed planting as screening. • A comprehensive scheme of offsite planting is required to deliver rapid and timely mitigation whilst the large onsite planting scheme is developing. • Key locations for hedgerow reinforcement and offsite planting should be identified and included in the application or legal agreements. • The mechanism to secure and deliver offsite planting should be considered upfront and not left as an afterthought. 			

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	<ul style="list-style-type: none"> The design of the substation should minimise visual impact and blend with the background using recessive colouring and the use of innovative solutions. Although visualisation of the Gas Insulated Substation (GIS) option for the National Grid substation is shown, the implications of this option for the design mitigation and consequent impacts of the scheme should be explored. The impact of low level visual clutter should be effectively minimised through design of layout, and landscaping. 			
	<p>Lighting Mitigation</p> <ul style="list-style-type: none"> Should have no lights at the substation. It is essential that appropriate lighting arrangements are put in place to minimise light pollution and further restrictions applied to evening working. 	Local Community Member; Aldringham-cum-Thorpe Parish Council	2	<p>As part of embedded mitigation measures, the onshore substation has been designed so that it does not require to be permanently lit at night during the operational phase, with passive lighting (passive infra-red). Task and vehicle lighting may be used in the hours of darkness during approved working hours.</p> <p>The OCoCP (Document Reference: 8.1) and the Artificial Light Emissions Management Plan will contain details on how lighting will be managed on site. For example, site lighting will be positioned and directed to minimise nuisance to footpath users and residents, to minimise distractions to passing drivers on adjoining public highways and to minimise sky glow, so far as reasonably practicable. Lighting spillage will also avoid or minimise impacts on ecological receptors, including nocturnal species.</p>

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				In addition, construction lighting will be limited to between 7am and 7pm in low light conditions with lower-level security lighting outside of these times to reduce impacts.
	<p>Landscape Mitigation Plan</p> <ul style="list-style-type: none"> • Historic character of the landscape of the area should be taken into account in the landscape mitigation plan. • Concern over future NGV projects and the potential for removing the Applicant's planted mitigation to accommodate future NGV equipment. • The "farming context" should not be removed at Moor Farm with the addition of significant screening/ planting. • LVIA study could be carried out at S106 negotiations to identify areas for offsite landscaping reinforcement. • Proposed planting species mix may be slightly different in the Friston area (to Bramford). • Large scale bunding should have a gradual tie into the existing ground (i.e. a gradual slope at the base). • Public Right of Way diversion should be away from going through the site and not too close to substation infrastructure. • Public amenity should be incorporated into the mitigation plan. 	<p>Landscape Mitigation Plan Meeting (SCDC (now East Suffolk Council), SCC, Suffolk Coastal and Waveney District Council (now East Suffolk Council) and Historic England); Local Community Members; SCC; SCDC (now East Suffolk Council)</p>	15	<p>Landscape management plans have been further developed since PEIR, based on consultation feedback and in liaison with the Local Planning Authority and stakeholders within the Expert Topic Groups and other regular meetings. The updated landscape management plan will be presented within visualisations and the OLEMS (Document Reference: 8.7), submitted with the application.</p> <p>The results of the settings assessment are provided in Appendices 24.3 and 24.7 and inform Chapter 24 Onshore Archaeology and Cultural Heritage where relevant (see sections 24.4, 24.5 and 24.6).</p> <p>Table 29.4 of Chapter 29 Landscape and Visual Impact Assessment. The design of the onshore substation site has been substantially progressed since PEIR and includes meaningful and deliverable mitigation measures which seek to minimise harm to the landscape. The Applicant considers that the proposed East Anglia TWO project now demonstrates good design and includes recognised mitigation, in particular through the design of the underground cables and routing of the onshore cables through the least sensitive agricultural areas of the AONB; the siting of the substation and National Grid</p>

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	<ul style="list-style-type: none"> The Councils desire for the masterplan to deliver more than just planting with a sole screening function. The site is surrounded by public footpaths, hosts wildlife and is currently enjoyed by the surrounding communities and therefore the masterplan should deliver significant gains for biodiversity and public amenity. There are opportunities to deliver a masterplan which provides enhanced public access. 			infrastructure outside the AONB and the design of the OLMP (presented in the OLEMS (Document Reference: 8.7) submitted with this DCO application) which reduces adverse effects of the onshore infrastructure on local character and views. The mitigation of landscape and visual effects has been carefully considered in the LVIA, to minimise 'harm to the landscape' where possible.
Tourism Recreation and Socio-Economics	<p>PEIR Policy</p> <ul style="list-style-type: none"> A new 2017 AONB Tourism Volumes and Values Report has been produced to replace the 2015 version. Thorpeness and the surrounding area is a tourist hot spot and work is currently being undertaken through the production of a Neighbourhood Plan to manage the growing impacts on the parish. Aldringham-cum-Thorpe Parish Council would seek to work with the Applicant to ensure that the economy of the area is not impacted by work carried out by the Applicant. The consultation demonstrates a clear understanding of our regional policies, their aims and ambitions but does not make a clear link to how these projects will assist in delivering the Applicant's stated ambitions for skills, education and employment. The chapter acknowledges the National Policy Statements (NPS) for Energy (Dec 2011) that 	The Suffolk Coast DMO; Aldringham-cum-Thorpe Parish Council; Waveney District Council; Suffolk Coast DMO	5	<p>In response to the comment on the update to the 2015 AONB Tourism Volumes and Values report, the 2017 updates are now included in sections 30.5.2.7 and 30.5.2.8 of Chapter 30 Tourism, Recreation and Socio-Economics.</p> <p>A skills strategy was developed by SPR for East Anglia ONE in conjunction with the relevant Local Planning Authorities This is being developed further for East Anglia THREE. The implementation of this strategy has created the skills environment required for the proposed East Anglia TWO project.</p> <p>Positive benefits to date from East Anglia ONE are highlighted in Chapter 2 Need for the Project of the ES, section 2.4, including the long term investment in Lowestoft.</p> <p>Enhancement measures are included in section 30.3.3 of Chapter 30 Tourism, Recreation and Socio-Economics.</p>

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	<p>Nationally Significant Infrastructure Projects (NSIPs) should assess their effects on tourism. However, the chapter fixates on tourism assets within 1km of the development area and does not consider the damage that the projects could have on the perception to the area, and tourism assets that are close-by (Aldeburgh and Snape).</p> <ul style="list-style-type: none"> Chapter 30 refers to the emerging Suffolk Coastal District Council Local Plan, quoting its ambition to “to manage tourism across the district in a way that protects the features that make it attractive to visitors” and yet there is no real reference to the damage that could be caused to the perception of the area by NSIPs. 			<p>In response to the comment on fixation on tourist assets within 1km, section 30.3.1.2 of Chapter 30 Tourism, Recreation and Socio-Economics defines the study area for recreation and tourism which includes different areas of effect for direct impacts and indirect impacts. Whilst the direct impacts are indeed focused within or in proximity to the onshore development area (e.g. air quality and noise impacts) the Seascope assessment considers an area encompassed by the SLVIA study area which is defined as a 50km radius from the outermost wind turbines of the East Anglia TWO windfarm site (see Chapter 29 Seascope, Landscape and Visual Amenity of the ES). Various studies have been used to assess the tourism impact of perceptions of development (section 30.5.3.3 of Chapter 30 Tourism, Recreation and Socio-Economics and Appendix 30.2 Literature Review of the ES).</p> <p>Potential impacts on tourism are included in sections 30.6.1.3, 30.6.1.4 and 30.6.2.2 of Chapter 30 Tourism, Recreation and Socio-Economics. Studies which assess the impact to tourism are detailed in section 30.5.3.3 of Chapter 30 Tourism, Recreation and Socio-Economics and Appendix 30.2 Literature Review of the ES.</p>
	<p>PEIR Baseline</p> <ul style="list-style-type: none"> The Applicant implies as part of their estimated home based/non home based workforce split that there are sufficient workers with the requisite skills based either locally or regionally. It does not 	<p>Waveney District Council; SCC; SCDC (now East Suffolk Council)</p>	<p>3</p>	<p>In response to the comment on the estimated home based/non-home based split: The predicted direct and indirect employment created by East Anglia TWO, and its induced employment are included in sections 30.5.2, 30.6.1.1.2 and 30.6.2.1.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES.</p>

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	<p>reference the fact that these identified workers are probably currently employed meaning that there will be significant displacement of these workers from existing jobs, businesses and the supply chain that will clearly impact negatively on the local economy. For example, you quote that 16,545 appropriately skilled workers exist locally but they do not say that they are all currently employed elsewhere.</p> <ul style="list-style-type: none"> The Applicant conclude that as the local baseline shows a lower skills level than that of the UK, we would have a local population that could only access lower skills job opportunities. Waveney District Council along with Suffolk Coastal District Council and Suffolk County Council seek to challenge this assumption; targeted skills intervention would enable more local people to have the opportunity to access higher skills roles. We also have clear evidence that skill levels in Suffolk and the NALP area are growing faster than comparative regions and we will expect the Applicant to enhance their current commitments to continue working with local stakeholders to ensure this trend is maintained. 			<p>Construction employment is by its nature temporary, as one project finishes workers move to another. As such, currently employed personnel may become available to work on the proposed East Anglia TWO project throughout the duration of the construction period. In addition, onshore construction employment will have a low magnitude of effect (see Table 30.53 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES). Therefore, labour displacement is not likely to be an issue.</p> <p>Skills shortages in the surrounding area were assessed during East Anglia ONE. Skills and labour requirements for the offshore wind industry have been assessed up to 2032 (Energy and Utility Skills, 2018). This is covered in section 30.1 of Chapter 30 Tourism, Recreation and Socio-Economics.</p> <p>The mitigation and enhancement measures to minimise adverse impacts and increase the skills levels and employment opportunities for locals are included in section 30.3.3 of Chapter 30 Tourism, Recreation and Socio-Economics.</p> <p>Employment opportunity is discussed in sections 30.6.1.1, 30.6.1.2 and 30.6.2.1 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES.</p> <p>Details of the potential labour market are included in section 30.6.1.1.1 of Chapter 30 Tourism, Recreation</p>

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				<p>and Socio-Economics of the ES. Current levels of unemployment within the travel to work area are included in section 30.5.2.4 of Chapter 30 Tourism, Recreation and Socio-Economics and current economic inactivity levels are included in section 30.5.2.1 of Chapter 30 Tourism, Recreation and Socio-Economics.</p> <p>The data used in section 30.5.1.3 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES is from NOMIS the National database. The evidence provided to the Applicant since PEIR by East Suffolk Council shows that that skills levels in Suffolk are growing faster than in 2 of the 3 neighbouring counties, but that they remain below the National average as detailed in section 30.5.1.3 of Chapter 30 Tourism, Recreation and Socio-Economics.</p> <p>The Applicant has included skills and training enhancements in section 30.3.3.1 of Chapter 30 Tourism, Recreation and Socio-Economics to increase the employment opportunities within the area and enable more local people to access higher level jobs.</p>
	<p>PEIR Methodology</p> <ul style="list-style-type: none"> Socio-economics is a wider determinant of health and wellbeing we expect the Environmental Statement (ES) to address, to demonstrate whether it is likely to give rise to significant effects. We have focused its approach on scoping determinants of health and wellbeing, which has been derived from an analysis of the wider 	<p>Public Health England; Waveney District Council; SCC/SCDC (now East Suffolk Council); The Suffolk Coast DMO</p>	5	<p>Interrelationships between Tourism, Recreation and Socio-economics and other wider determinants of health are detailed in section 30.8 of Chapter 30 Tourism, Recreation and Socio-Economics.</p> <p>The Applicant has partnered with SCC and other industry stakeholders to engage local suppliers and enabled a local supply chain as far practicable (section 30.6.1.1.4 of Chapter 30 Tourism, Recreation and Socio-</p>

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	<p>determinants of health mentioned in the National Policy Statements.</p> <ul style="list-style-type: none"> It should be noted that although the potential benefits of the proposed developments will be widely felt across Suffolk and beyond, the negative impacts requiring significant mitigation will be very locally felt in the area of East Suffolk where the development is focussed and we will expect to see this positively mitigated by the Applicant. The consultation documents go into considerable detail explaining the framework, design, definition, content and methods of data analysis used to inform the work produced, but they do not show how this analysis translates into real, tangible economic benefits both locally, and regionally. The Applicant quantify in some detail the employment multiplier effects and benefits that will be felt more widely, whilst dismissing the negative worker and supply chain displacement effects, along with tourism, recreation and accommodation impacts that will be felt locally. Local, regional and national employment percentages have been included for the purpose of assessment. There is no commitment made by the Applicant in the consultation to achieve any of these. The figures used for the purpose of assessment would be positive stretch recruitment targets for the projects and we would like to engage with the Applicant to set realistic, but, stretching recruitment expectations as part of East Suffolk Council. 			<p>Economics of the ES). Employment opportunities are further enhanced by continuity between multiple projects being developed by the Applicant and support by Skills Strategy that includes an MoU with SCC.</p> <p>The magnitude of both local and wider employment is discussed in sections 30.6.1.1.2 and 30.6.2.1.2 of Chapter 30 Tourism, Recreation and Socio-Economics, based on the current businesses which are capable fulfilling the supply chain needs within the area.</p> <p>A supply chain plan will be developed post-consent in advance of the CfD process (see section 30.3.3.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES).</p> <p>In response to Waveney District Council and SCC/SCDC's (now East Suffolk Council) request for further information: the predicted direct and indirect employment created by East Anglia TWO, and its induced employment are included in sections 30.5.2, 30.6.1.1.2 and 30.6.2.1.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES. Construction employment is by its nature temporary as one project finishes workers move to another. As such, labour displacement is not considered significant (section 30.6.1.1.1 of Chapter 30 Tourism, Recreation and Socio-Economics). Skills shortages in the surrounding area were assessed during East Anglia ONE. Skills and labour requirements for the offshore wind industry have been assessed up to 2032 (Energy</p>

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	<ul style="list-style-type: none"> Waveney District Council and SCC/SCDC seek further information regarding socio-economic assessment assumptions and employment predictions, labour displacement effects, current skills shortages and mitigation strategies proposed. Whilst a slightly arbitrary Trip Advisor “meta study” suggests that only a very small number of tourists refer to wind turbines in their holiday reviews there is only a passing reference to the impact of onshore construction, with a 2014 National Grid study “proving” that this will have very little impact. This assessment is too generic and not acceptable. 			<p>and Utility Skills, 2018). This is covered in section 30.1 of Chapter 30 Tourism, Recreation and Socio-Economics.</p> <p>Several studies have been reviewed which attempt to measure the impact of perception on tourism. These are included in section 30.5.3.3 of Chapter 30 Tourism, Recreation and Socio-Economics and Appendix 30.2 Literature Review of the ES. An additional Trip Advisor study was conducted using the largest sample size of any perception study included in the ES which is also detailed in section 30.5.3.3 of Chapter 30 Tourism, Recreation and Socio-Economics.</p>
	<p>PEIR Impact</p> <ul style="list-style-type: none"> The PEIR identifies how non-motorised user (NMU) will be impacted through the loss or change in formal Public Rights of Way (PRoW), open space and the existing road network. Active travel forms an important part in helping to promote healthy weight environments and as such it is important that any changes have a positive long term impact where possible. Changes to NMU routes have the potential to impact on usage, create displacement to other routes and potentially lead to increased road traffic collisions. The PEIR does not provide any data for NMU within the traffic assessments. Without such data it is unclear how the impact on 	<p>Public Health England; Suffolk Coast DMO; Socio-economics Expert Topic Group (Suffolk Coastal and Waveney District Council (now East Suffolk Council), SCC, Snape Maltings and Suffolk Coast</p>	5	<p>Impacts to non-motorised users are addressed in sections 30.6.1.4.2.1, 30.6.2.2 of Chapter 30 Tourism, Recreation and Socio-Economics and Chapter 26 Traffic and Transport of the ES. The associated potential impacts to non-motorised users’ health are discussed in section 27.5.5 of Chapter 27 Human Health of the ES. An OPRoWS (Document Reference: 8.4) has been developed which details any diverted routes and associated mitigation measures.</p> <p>In response to the comment on the damage to visitor economy: HDD mitigates potential impacts to the Thorpeness cliffs as detailed in Chapter 6 Project Description of the ES. Potential impacts on tourism are detailed in sections 30.6.1.3, 30.6.1.4 and 30.6.2.2 of Chapter 30 Tourism, Recreation and Socio-Economics,</p>

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	<p>NMU (pedestrians and cyclists) from the presence of large numbers of HGVs can be assessed.</p> <ul style="list-style-type: none"> Similarly no data has been presented on the usage of each PRoW affected by the scheme, nor does it identify the specific impact and mitigation to be put in place for each PRoW, for example through diversions. Diverted routes must be designed, installed and maintained to allow for access to the community. A scheme of this scale and nature can also provide mitigation opportunities to enhance the existing infrastructure that supports active travel, physical activity and access to green/blue space. We expect the proposal to contribute to improved provision of infrastructure that supports this type of activity. Damage to Visitor Economy has not been assessed, the Applicant has not given adequate consideration to the harm that would be caused to the visitor economy in the local area by the construction of the onshore infrastructure and cabling, including the landfall at Thorpeness Cliffs (a treasured local tourism asset). The next stage of work needs to consider SLVIA receptors targeted for those tourism receptors that could potentially be affected. Cross-reference with SLVIA following PEIR to identify those specific locations and potential businesses that could be affected by the offshore wind farm. 	and Heaths AONB)		<p>with mitigation measures in section 30.3.3.2 of Chapter 30 Tourism, Recreation and Socio-Economics.</p> <p>Locations where East Anglia TWO will be visible from the shore have been identified in Chapter 28 Seascape, Landscape and Visual Impact Assessment of the ES.</p>
	PEIR Cumulative	Public Health England; Waveney	9	Regarding the comments on assessing the consideration of Sizewell C, the Cumulative Impact Assessment (CIA) has been updated where possible

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	<ul style="list-style-type: none"> The assessment of cumulative impact should be reviewed using the latest PEIR from Sizewell C. Particular attention should be given to accommodation demands affecting tourist accommodation, housing affordability and availability including the private rented/social housing sector. The applicant should consider the nearby development of Sizewell C, assess the cumulative implications on the proposed East Anglia TWO and ensure assessments and mitigation measures are consistent and interoperable. It is not considered that the Applicant has fully considered the cumulative impact of a number of projects going ahead in the same timeframe (EA1N, EA2, EDF Energy Sizewell C, and National Grid Interconnectors alongside local infrastructure projects in the New Anglia Local Enterprise Partnership area). The assessment considered Sizewell C and Vattenfall projects; there is however other significant projects which will create a demand for similarly skilled people (Lowestoft Third Crossing, various housing projects etc). It should also be noted that the assessment in relation to Sizewell C was based on consideration of EDF Energy's Stage 2 consultation material which does not take into account the new maximum employment figures being sensitivity tested by EDF Energy. The cumulative assessment is currently inadequate and we welcome the opportunity to 	District Council; SCC; SCDC (now East Suffolk Council); The Suffolk Coast DMO		<p>using the latest information from EDF Energy. The updated CIA is presented in section 30.7.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES. It should be noted that EDF Energy propose to submit a Stage 4 consultation document prior to the submission of an ES in early 2020. The proposed publication date of the EDF Stage 4 material mean it is unable to be incorporated into the proposed East Anglia TWO project CIA. Recognising that EDF Energy are proposing further changes to some of their proposals (in particular transport strategies) a detailed CIA based upon Stage 3 materials would potentially be based upon out of date and incorrect information and furthermore, could prejudice EDF Energy's Stage 4 consultation. House prices are beyond the scope of this assessment.</p> <p>The Cumulative Impact Assessment (CIA) has been updated with the latest information for Sizewell C New Nuclear Power Station in section 30.7 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES. The National Grid Interconnectors have not been screened in to the CIA as there is insufficient information on these projects to undertake assessment. The list of projects screened into the CIA has been developed in consultation with the Local Planning Authorities. Based upon the assessment in sections 30.6.1.1.2 and 30.6.2.1.2 of Chapter 30 Tourism, Recreation and Socio-Economics, it is concluded that there will be no employment displacement. Based upon the assessment in sections 30.6.1.3, 30.6.1.4, 30.6.2.2 and 30.6.4, it is considered that there</p>

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	<p>work with the Applicant to ensure a more robust assessment is provided. The availability of workers and accommodation will potentially have a knock on impact on the availability of accommodation for tourists.</p> <ul style="list-style-type: none"> In relation to tourism employment, the Applicant assumes that non-residential workers will stay in local tourist accommodation with the expenditure by non-residential staff leading to between 11 to 22 FTE jobs on average during the construction period. The assessment also concludes that if peak employment for one project coincides with the high tourist season, the workers would not displace tourists but provide additional income to local businesses. It is not considered that the Applicant has adequately addressed the issue of peak season accommodation shortages and the cumulative impacts with other energy projects including Sizewell C. This should be adequately addressed. The Applicant assume that non-home based workers will stay in local tourist accommodation which will be a benefit when the accommodation sector has out of season capacity. They do not adequately address the issue of peak season accommodation shortages, and their assumptions are also at odds with EDF Energy's Sizewell C analysis which states that most non-home based workers at Sizewell C will stay in the (severely supply limited) private rented sector 			<p>are no significant adverse impacts upon tourism and recreation receptors either for the proposed East Anglia TWO project alone or cumulatively with the proposed East Anglia ONE North project. Mitigation is therefore only proposed for contributors to potential impact (e.g. air quality, noise and traffic mitigations).</p> <p>The worst case assessed for accommodation impacts in section 30.6.1.3 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES considers a scenario whereby the peak number of non-residential workers occurs during peak tourism season. This shows that non-residential workers from the proposed East Anglia TWO project will only take up 47% of the rooms available assuming 80% occupancy from visitors (see Table 30.63 and Table 30.64 of Chapter 30 Tourism, Recreation and Socio-Economics). Therefore, as assessed, non-resident workers will provide a benefit by using extra capacity, but will not displace tourists.</p> <p>The cumulative assessment suggests that there may be excess demand for rooms when Sizewell C is considered assuming that peak numbers for all project coincide (by approximately 130 workers in total, see Section 30.7.2.1.3 of Chapter 30 Tourism, Recreation and Socio-Economics). However using revised assumptions from EDF Energy, based upon experience from Hinkley Point C, it is likely that some construction workers engaged in long term work may well look to the rental market rather than hotels etc.</p>

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	<p>accommodation as tourism accommodation will be too expensive for them.</p> <ul style="list-style-type: none"> The Phase 4 documentation does not consider the impact of additional pressures on the labour market, generated by other major construction projects likely to be on going at the same time. Without considering the impact of multiple projects, any mitigation may be inadequate for the local impacts. It is not considered that the Applicant has adequately addressed the issue of peak season accommodation shortages and the cumulative impacts with other energy projects including Sizewell C. The Councils request the Applicant to ensure it is adequately addressed. Insufficient cumulative impact assessment: the Applicant has not satisfactorily attempted to acknowledge or consider the cumulative impacts of the EA2 and EA1N projects with the other planned energy projects. References to EDF Energy's new nuclear power station Sizewell C are included, but it is clear that despite being "in communication to understand each other's programme" the information is outdated and largely dating from 2016. There is no masterplan and seemingly no joined-up thinking or impact assessment. This is unacceptable when tourism is such a significant part of the local economy. The NSIPs are too large for this small, rural area. 			<p>Note that at the time of the preparation of the PEIR the EDF Stage 2 consultation documents were the most recent publicly available materials.</p> <p>Details of the potential labour market are included in section 30.6.1.1.1 of Chapter 30 Tourism, Recreation and Socio-Economics. Current levels of unemployment within the travel to work area are included in section 30.5.2.4 of Chapter 30 Tourism, Recreation and Socio-Economics, and economic inactivity levels are included in section 30.5.2.1 of Chapter 30 Tourism, Recreation and Socio-Economics.</p> <p>Noted. The best available information was used at the time of writing. The Cumulative Impact Assessment (CIA) has been updated as far as possible with information from EDF Energy noting their proposal to submit a Stage 4 consultation document prior to the submission of an ES in early 2020.</p> <p>The comments on an insufficient cumulative impact assessment were noted. The best available information was used at the time of writing. The cumulative impact assessment has been updated as far as possible with information from EDF Energy noting their proposal to submit a Stage 4 consultation document prior to the submission of an ES in early 2020.</p> <p>In response to the comment on no joined-up thinking, Chapter 2 Need for the Project details the urgency and the masterplan behind the East Anglia TWO Project.</p>

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	<ul style="list-style-type: none"> The Suffolk Coast DMO is deeply concerned by the proposed developments, and in conjunction with the National Coastal Tourism Academy, has commissioned an independent study by leading consultants BVA-BDRC. The study will measure the impact that the prospective EA2 and EA1N projects and the nearby Sizewell C project would have on the visitor economy and will be published in the spring of 2019. While Norfolk County Council welcomes the potential employment opportunities these offshore proposals will have within the local/regional area both during construction and once operational, there are significant economic issues, which these proposals will need to address with regard to the cumulative impacts on the local labour market; and supply chain (i.e. taking into account other planned NSIPs e.g. Sizewell C; Norfolk Vanguard Offshore Wind Farm; Hornsea Project Three; and Boreas Offshore Windfarm). 			<p>Chapter 3 Policy and Legislation of the ES includes the relevant legislation in regards to environmental impact assessments for NSIPs, including cumulative assessment (sections 3.5.2, 3.6.2 and 3.6.3).</p> <p>The Suffolk Coasts' concerns and the commissioning of an independent study were noted. The Applicant has contacted Suffolk Coastal DMO and the NCTA. The resultant discussion in July 2019 confirmed that whilst the surveying portion of this study is complete, that the data requires further processing and is not ready at the time of writing.</p> <p>Norfolk County Council's comment was noted. Employment opportunities are included in sections 30.6.1, 30.6.1.2, 30.6.1.3 and 30.6.2.1 of Chapter 30 Tourism, Recreation and Socio-Economics. Cumulative impacts are assessed in section 30.7 of Chapter 30 Tourism, Recreation and Socio-Economics. A skills strategy was developed by SPR for East Anglia ONE in conjunction with the relevant Local Planning Authorities. This is being developed further for East Anglia THREE. The implementation of this strategy has created the skills environment required for the proposed East Anglia TWO project.</p>
	<p>PEIR Mitigation</p> <ul style="list-style-type: none"> It is suggested that local tourist accommodation businesses will benefit because non-home based workers will use spare capacity in the off-peak tourist season but you do not explain how this 	Waveney District Council; Public Health England; SCC; SCDC (now	16	<p>The worst case assessed for accommodation impacts in section 30.6.1.3 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES considers a scenario whereby the peak number of non-residential workers occurs during peak tourism season. This shows that non-residential workers from the proposed East Anglia</p>

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	<p>impact will be mitigated if non-home based workers are using tourist accommodation and preventing visitors from staying in the local area during peak season or where these workers will be accommodated if they are evicted from tourist accommodation in the peak season.</p> <ul style="list-style-type: none"> The negative impacts requiring significant mitigation will be very locally felt in the area of East Suffolk where the development is focused and we will expect to see this positively mitigated by the Applicant. The consultation documents go into considerable detail explaining the framework, design, definition, content and methods of data analysis used to inform the work produced, but they do not show how this analysis translates into real, tangible economic benefits both locally, and regionally. It is positive to hear that all elements of the onshore construction could be facilitated by UK based companies; however, it is disappointing that the Applicant through this consultation say it is impossible to define the supply chain at this stage because of the location of suppliers and their competitiveness. Consequently they do not have a supply chain plan even though one is needed to secure an effective local and regional supply chain that will be needed to leverage the benefits of single or multi offshore wind projects. The Applicant make no commitment to use local companies in the construction works planned for each project. The Councils expect to see agreed 	East Suffolk Council)		<p>TWO project will only take up 47% of the rooms available assuming 80% occupancy from visitors (see Table 30.63 and Table 30.64 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES). Therefore, as assessed, non-resident workers will provide a benefit by using extra capacity but will not displace tourists.</p> <p>The Applicant has partnered with SCC and other industry stakeholders to engage local suppliers and enabled a local supply chain as far practicable (section 30.6.1.1.4 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES). Employment opportunities are further enhanced by continuity between multiple projects being developed by the Applicant and supported by Skills Strategy that includes an MoU with SCC.</p> <p>The magnitude of both local and wider employment is discussed in sections 30.6.1.1.2 and 30.6.2.1.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES, based on the current businesses which are capable fulfilling the supply chain needs within the area.</p> <p>A supply chain plan will be developed post-consent in advance of the Contracts for Difference (CfD) process (see section 30.3.3.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES).</p> <p>To participate in the CfD scheme applicants must demonstrate that they have an approved Supply Chain Plan for the project they intend to build. The aim of the Supply Chain Plan is described in published guidance</p>

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	<p>approaches ensuring local and regional companies are adequately supported to secure as much of this work as possible.</p> <ul style="list-style-type: none"> Where mitigation measures are required, e.g. temporary diversions, these must be identified and reported in the ES. Any temporary diversions must be designed to maximise continued usage and minimise perceived or actual barriers to access. Local partners share the same high-level ambition to develop a sustainable regional and national supply chain with the indirect benefit of increased education and training that these projects will bring to New Anglia. The Applicant's recognition of the significant opportunities to maximise and support the uptake of local socio-economic benefits through targeted enhancement, initiatives and support offered by these projects, learning from what worked from EA1 and EA3 and utilising proven mitigation strategies is welcomed. It is appreciated that the turbines themselves will be limited in the time of when they will be visible from shore and that the proposed 300m height to tip is currently an aspiration and not actually available technology at this stage. However, EA2 is closer to the shore than the existing East Anglia 			<p>from the Department of Business, Energy and Industrial Strategy (BEIS)².</p> <p>The Government will assess the extent to which plans:</p> <ul style="list-style-type: none"> Support the development of competition in supply chains; Support innovation in supply chains; and Support the development of skills in supply chains. <p>If a project is successful in the CfD scheme then the Supply Chain Plan will be monitored by BEIS. This will include gathering evidence relating to the delivery of commitments and/or actions identified in the Supply Chain Plan.</p> <p>Any changes or diversions to Public Rights of Way (PRoW) are detailed in the OPRoWS (Document Reference: 8.4), as are mitigation and enhancement measures.</p> <p>Noted regarding local socio-economic benefits.</p> <p>Both visual impacts to the seascape from the shore and the associated mitigation measures, are addressed in full in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES.</p>

²https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/759231/AR3_SCP_Guidance_-_Nov_2018.pdf

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	<p>One (EA1) and consented East Anglia Three (EA3) arrays that have maximum turbine heights of 250m. As such, the potential impacts arising from EA2 are greater. WDC would be happy to discuss the potential for mitigation of these impacts as it is likely they will most greatly be felt during peak tourist season, this is a concern particularly around Kessingland, Covehithe and Southwold where tourism and the coast are a massive draw to visitors, holiday makers and second-homeowners. Mitigation could include a reduction in the height of the turbines or alterations to the layout of the arrays to minimise impacts. We would welcome discussions as part of East Suffolk Council on this element.</p> <ul style="list-style-type: none"> Impact on tourism and recreation resulting from landscape and seascape impacts during the construction and operation phases along with associated mitigation strategies is an area, WDC are particularly concerned with and look forward to being involved in discussions prior to the development consent orders being submitted. 			<p>Since PEIR, further refinement to the East Anglia TWO windfarm site boundary has been undertaken. The north-south extent of the East Anglia TWO windfarm site has therefore been reduced (see Chapter 4 Site Selection and assessment of Alternatives, section 4.6 and Figure 4.3) in order to mitigate potential seascape impacts, without a reduction in wind turbine numbers or generation capacity. The boundary is now 3km further from Covehithe and 2km further from Southwold when compared to the PEIR boundary.</p> <p>Residual impacts range from negligible to minor/moderate, and as such potential tourism, recreation and socio-economic impacts will also vary.</p> <p>Visual impacts are assessed in both Chapter 28 Offshore Seascape, Landscape and Visual Amenity and Chapter 29 Onshore Landscape and Visual Amenity of the ES.</p> <p>Residual visual impacts range from negligible to minor/moderate adverse, and as such potential tourism, recreation and socio-economic impacts will also vary.</p> <p>Impacts to tourism and recreation amenity are considered further in sections 30.6.1.4 and 30.6.2.2 of Chapter 30 Tourism, Recreation and Socio-Economics.</p>

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	<p>General assessment comments</p> <ul style="list-style-type: none"> The Applicant should undertake a tourist/ visitor survey to better understand perceived impact. Use data on construction worker accommodation for EA1 for further assessment. The Applicant should review EDF tourism survey data. It was noted that data presented in terms of job creation, increase in economy and visitor numbers is based on that generated by the project and is not a 'net' figure and does not account for the any reduction in visitors/tourists. Damage to the perception of the Suffolk Heritage Coast has not been explored. The disturbance to the area and the people is dismissed as insignificant. Underestimated impact on associated businesses. Tourism section of technical report is superficial and insubstantial The Applicant only identified three hotels in the whole area. The Applicant have failed to understand the nature of tourism in Suffolk. Damage to the perception of the Suffolk Heritage Coast has not been explored. Tourism assessment not undertaken for Thorpeness. Contains and unfathomable and unsustainable expectation of major benefits to tourism. 	<p>Socio-economics Expert Topic Group (Suffolk Coast and Waveney District Council (now East Suffolk Council), SCC, Snape Maltings and Suffolk Coast and Heaths AONB); Local Community Members; The Hotel Folk Ltd.; Aldeburgh Town Council; Friston Parish Council / SASES; Snape Parish Council; The Suffolk Coast DMO; Snape Maltings; SCC; SCDC (now East Suffolk Council); Suffolk Coast and Heath</p>	64	<p>No monitoring has been undertaken on worker accommodation.</p> <p>Data sharing will take place where appropriate.</p> <p>Impacts to tourism receptors have been assessed in sections 30.6.1.3, 30.6.1.4 and 30.6.2.2 Chapter 30 Tourism, Recreation and Socio-Economics of the ES. The potential adverse impacts have been assessed as negligible, as such potential reductions in visitor numbers have not been modelled.</p> <p>Impact assessment methodology for Chapter 30 Tourism, Recreation and Socio-Economics of the ES is detailed within section 30.4.4.</p> <p>In response to comments on the assessment, the assessment considers Tourism and Hospitality Sector Employment (section 30.6.1.3 of Chapter 30 Tourism, Recreation and Socio-Economics) and Tourism and Recreation Disturbance (section 30.6.1.4 and section 30.6.2.2 of Chapter 30 Tourism, Recreation and Socio-Economics), these are also considered cumulatively (section 30.7 of Chapter 30 Tourism, Recreation and Socio-Economics). The assessment therefore covers direct and indirect impacts upon tourism assets (including traffic impacts), impacts upon accommodation supply and potential impacts from perceived changes to the character of the area (both offshore and onshore).</p>

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	<ul style="list-style-type: none"> Need to recognise that the holiday season is short. Offensive to comment on the socio-economic impact to the local villages. Consider Suffolk Coast DMO research. Failure to evaluate the impact of construction phase on the visitor economy. Pertinent questions (size, positioning and noise pollution) dismissed as no concern or mitigated against – even though there is no mitigation that would be advantageous to the village or any other parts of the project. PEIR makes no reference to the safety and security of residents during the construction and operation of the substations. No direct reference to Snape village, no recognition of the potential impact on tourism on the village itself or Snape Maltings (a major cultural and destination site for the county). Concerns over the focus on the tourism impact by only assessing i) whether tourist mind looking at the wind turbines and ii) whether tourism businesses can benefit from workers renting accommodation, instead of focusing on the harm that will be caused to visitor economy. Concerns that only tourism assets within 1km of the development area were assessed and no consideration was given to the damage that the project could have on the perception to the area, and tourism assets that are close-by (i.e. Aldeburgh and Snape). 	AONB Partnership; Public Health England; Waveney District Council		<p>In response to the comment regarding the difficulty of measuring tourism impacts: various studies have been used to assess the tourism impact of developing an offshore windfarm detailed in section 30.5.3.3 of Chapter 30 Tourism, Recreation and Socio-Economics and Appendix 30.2 Literature Review of the ES.</p> <p>The PRoW Strategy will be agreed with the Local Planning Authority post-consent. The OPRoWS (Document Reference: 8.4) submitted with the DCO application includes the principles for management of PRoWs during construction and proposed alternative routes if required.</p> <p>The comments regarding the PRoW and the access network – PRoW, open access and common land were noted.</p> <p>The impacts to PRoWs are considered in section 30.6.1.4.2.1 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES and have been updated in light of refinements to the onshore development area since PEIR.</p> <p>In response to the comment on robust research in the area, the robustness of the Trip Advisor study is detailed in section 30.5.3.3 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES, as are the results. The Trip Advisor study was conducted to supplement other</p>

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	<ul style="list-style-type: none"> The chapter repeatedly refers to the difficulty of measuring tourism impact. A survey of existing and prospective visitors should be undertaken. The National Coastal Tourism Academy (an organisation referred to in Chapter 30) and The Suffolk Coast have commissioned an independent study by leading consultants BVA-BDRC, to measure the effects that the two the Applicant projects and Sizewell C could have on tourism demand and therefore the visitor economy. Reference is made to the Suffolk Coastal District Local Plan, quoting the ambition “to manage tourism across the district in a way that protects the features that make it attractive to visitors”, yet there is no real reference to the damage that could be caused to the perception of the area by NSIPs. Assessment of tourism impacts of the wind turbines and onshore construction, using Trip Advisor meta study and a 2014 National Grid study, is too generic and not acceptable. Presenting poorly researched and underestimated information is misleading for the Planning Inspectorate. No account of the impact to holiday rental properties in Friston, Aldringham, Knodishall or Thorpeness. The chapter does not adequately assess the damage to visitor economy and focusses too much on the perception of wind turbines rather 			<p>independent studies, included in section 30.5.3.3 of Chapter 30 Tourism, Recreation and Socio-Economics and Appendix 30.2 Literature Review of the ES. Embedded mitigation measures are included in section 30.3.3.2 of Chapter 30 Tourism, Recreation and Socio-Economics. Mitigation measures (including use of best practice guidance) to minimise or avoid adverse impacts to the tourism industry are also detailed in Chapter 19 Air Quality, section 19.3.4, Chapter 25 Noise and Vibration, section 25.3.3, Chapter 26 Traffic and Transport, section 26.3.3, Chapter 28 Seascape, Landscape and Visual Impact Assessment, section 28.3.3 and Chapter 29 Landscape and Visual Impact Assessment, section 29.3.3.</p> <p>The PRoW Strategy will be agreed with the Local Planning Authority post-consent. The OPRoWS (Document Reference: 8.4) submitted with the DCO application includes the principles for management of PRoWs during construction and proposed alternative routes if required.</p> <p>In response to the comments on tourism and recreational disturbance, perception impact during construction were omitted from the PEIR and have now been included for project alone and cumulatively (see sections 30.6.1.4 and 30.6.5.1.4 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES).</p>

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	<p>than the impact of years of onshore construction, traffic and associated disturbances.</p> <ul style="list-style-type: none"> Request for further information regarding Socio-economic assessment assumptions and employment predictions, labour displacement effects, current skills shortages and mitigation strategies proposed. Request for further information regarding impact on tourism and recreation during the construction and operation phases and mitigation strategies. The NPPF states that 'planning policies and decisions should protect and enhance public rights of way and access, including taking opportunities to provide better facilities for users, for example by adding links to existing rights of way networks including National Trails'. The Councils expect this principle to be followed during construction of both EA1N and EA2. The access network - public rights of way (PROW), open access and common land are key features of the visitor experience in coastal Suffolk. The quality of the coastal landscape, its high level of accessibility on foot, by bike or on horse and this connectivity to the coastal towns, villages and hinterland, are the draw for visitors. The consultation does not appear to recognise that although an individual footpath is not a tourist attraction by itself, it is part of the overall tourism attraction to this part of east Suffolk. The consultation documents list the PROWs which are crossed by the cable corridor or used 			<p>Visual impacts are addressed in Chapter 28 Offshore Seascape, Landscape and Visual Amenity and Chapter 29 Onshore Landscape and Visual Amenity of the ES.</p> <p>Impacts on perception have been assessed using many sources of which the Trip Advisor study is just one. These are detailed in section 30.5.3.3 of Chapter 30 Tourism, Recreation and Socio-Economics and Appendix 30.2 Literature Review of the ES. The Trip Advisor study benefits from a large sample size (>12,000 comments) consisting of freely offered opinions, rather than tailored questioning and therefore provides useful context alongside the other studies.</p> <p>The PEIR referred to a visitor survey conducted by SCDC (now East Suffolk Council) mistakenly, the survey referred to is the Suffolk Coast DMO in Partnership with the NCTA. This has been amended in section 30.6.2.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES where the misprint was previously.</p> <p>Noted. Positive benefits to date from East Anglia ONE are highlighted in Chapter 2 Need for the Project, section 2.4 of the ES.</p> <p>A skills strategy was developed by SPR for East Anglia ONE in conjunction with the relevant Local Planning Authorities This is being developed further for East Anglia THREE. The implementation of this strategy has created the skills environment required for the proposed East Anglia TWO project.</p>

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	<p>as access to the cable corridor. the Applicant has however not shown the PROWs on any of the large scale plans with the correct status and path numbers.</p> <ul style="list-style-type: none"> Robust research in this area is required beyond an analysis of 'Trip Advisor' comments in other locations with offshore wind turbines. This needs to assess the impacts of the construction phase, operation phase and perceptions of the Suffolk Coast of those that would consider a visit. the Applicant should seek to avoid, minimise, mitigate and compensate for any adverse impacts on the tourism industry. This could be done through support of Suffolk Coast Limited, a Destination Management Organisation. Any assessment of PRoW, green or blue spaces accessible by the community must be considered on a case by case basis, taking into account, the number and type of users and the effect of the scheme. In relation to tourism and recreational disturbance, your consultation documents conclude that the impact of the projects will be of negligible significance. The assessment does not however consider the impact on the perception of visitors during the construction phases of the developments especially when considered cumulatively with other energy projects and how this will influence their behaviour and consequently impact on local tourism. 			<p>Supply chain targets are not being created at this time. A supply chain plan will be developed post-consent (see section 30.3.3.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES).</p> <p>Details of the potential labour market are included in section 30.6.1.1.1 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES. Current levels of unemployment within the travel to work area are included in section 30.5.2.4 of Chapter 30 Tourism, Recreation and Socio-Economics, and economic inactivity levels are included in section 30.5.2.1 of Chapter 30 Tourism, Recreation and Socio-Economics.</p> <p>Construction employment is by its nature temporary, as one project finishes workers move to another. As such, currently employed personnel may become available to work on the proposed East Anglia TWO project throughout the duration of the construction period. In addition, onshore construction employment will have a low magnitude of effect (see Table 30.53 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES). Therefore, labour displacement is not likely to be an issue.</p> <p>The Applicant has included skills and training enhancements in section 30.3.3.1 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES to</p>

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	<ul style="list-style-type: none"> It is disappointing that the Stage 4 documents suggest the proposed construction projects will not negatively impact on the attractiveness of the area to tourists. It is also very concerning that the Applicant propose no visitor perception survey of their own to assess and measure the tourism related impacts of the proposed developments. the Applicant refer to a council led independent visitor survey but in fact the only independent survey that we are aware of is the one now being undertaken by the Suffolk Coast Destination Management Organisation (DMO) in partnership with the National Coastal Tourism Academy. The positive benefits and economic potential the two developments can bring to our local area are not currently being highlighted, for example reference to the potential for positive impacts on the supply chain both regionally and locally does not include any targets to achieve these benefits. The Applicant's labour assessment has not taken account of the fact that labour is currently employed, signified by the low unemployment rates in NALEP, and therefore the proposed projects are likely to result in displacement effects in the labour market. The Applicant has also not included any analysis of current reported skills shortages by employers in the construction, engineering and agricultural sectors, all of which draw on the same pool of workers who possess a similar, connected competence skill set. Waveney District Council, 			<p>increase the employment opportunities within the area and enable more local people to access higher level jobs.</p> <p>Skills shortages were assessed as part of East Anglia ONE and will be further analysed retrospectively.</p> <p>In response to the comment on Brexit, the impact of Brexit is beyond the scope.</p> <p>In response to the comment on the calculation of likely GVA: Section 30.4.1.4.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES discusses the ONS advice on GVA which states that "The complex calculations and imputations used to produce GDP and regional GVA estimates cannot be applied at the firm level". The assessment is based, as was agreed with stakeholders through the Method Statement, on estimated number of staff compared to available labour market. Specific details on average salaries for construction workers are included in section 30.6.1.1.3 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES. Details on average salaries for roles in the offshore wind sector are included in section 30.6.1.2.3 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES.</p>

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	<p>SCC and SCDC urge the Applicant to assess any current skills shortages to better understand displacement effects and bring forward suitable mitigation.</p> <ul style="list-style-type: none"> The Applicant has made no assessment of the impact Brexit will have on the ability of the projects to employ people, this will likely exacerbate the local and regional labour market and therefore we expect the Applicant to address this adequately. No information is given on likely wages to enable any forecasting. From a socio-economic perspective WDC are supportive of aspiration to improve opportunities in the local area by looking at issues, assumptions and predictions on labour displacement effects, current skills shortages and mitigation strategies proposed. WDC expect you to build upon the existing Skills Strategy associated with Scottish Power/Iberdrola and the East Anglia One and East Anglia Three offshore windfarms. However, WDC are concerned that the positive benefits and economic potential the two developments can bring to our local area are not currently being highlighted, for example reference to the potential for positive impacts on the supply chain both regionally and locally does not include any targets to achieve these benefits. The Applicant has stated that management measures or temporary alternative routes will be agreed with Suffolk County Council prior to 			<p>Noted. Positive benefits to date from East Anglia ONE are highlighted in Chapter 2 Need for the Project, section 2.4 of the ES.</p> <p>A skills strategy was developed by SPR for East Anglia ONE in conjunction with the relevant Local Planning Authorities This is being developed further for East Anglia THREE. The implementation of this strategy has created the skills environment required for the proposed East Anglia TWO project.</p> <p>Supply chain targets are not being created at this time. A supply chain plan will be developed post-consent (see section 30.3.3.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES).</p> <p>Noted. The impacts to PRoWs are considered in section 30.6.1.4.2.1 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES and have been updated in light of refinements to the onshore development area since PEIR.</p> <p>The PRoW Strategy will be agreed with the Local Planning Authority post-consent. The OPRoWS (Document Reference: 8.4) submitted with the DCO application includes the principles for management of PRoWs during construction and proposed alternative routes if required</p> <p>The comment on the emerging data gathered from over 1700 online respondents was noted. The Applicant</p>

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	<p>construction. However, the Councils require management measures, alternative routes and mitigation for the impact on the PROW network to be agreed prior to the submission of the DCOs. Further advisory principles in relation to the PROW network can be found within Appendix A.</p> <ul style="list-style-type: none"> The emerging data, gathered from over 1700 online respondents, suggests that there could be a significant reduction to the AONB's visitor economy, currently worth £210M annually. 			<p>contacted Suffolk Coastal DMO and the NCTA to access their independent study of potential impacts to the local tourism industry. The resultant discussion in July 2019 confirmed that whilst the surveying portion of this study is complete, that the data requires further processing and is not ready at the time of writing.</p>
	<p>Tourism and recreation impacts</p> <ul style="list-style-type: none"> Concern over 'perceived impact' of construction on tourism. Impact of cable route construction on tourism and local accommodation/ bed & breakfasts. Impacts on visiting birdwatchers. Impacting AONB and Sandlings will impact tourism. Impact on the perception of the SC&H AONB as a tourist destination. Concern over Construction Consolidation Sites sited next to holiday businesses. SCDC local plan states that 'Tourism to the Heritage Coast environment is of national significance'. Impacts on hotels, holiday rentals, shops and restaurants. Impacts on footpaths such as the Sandlings Way and Coastal Path. 	<p>Socio-economics Expert Topic Group (Suffolk Coastal and Waveney District Council (now East Suffolk Council), SCC, Snape Maltings and Suffolk Coast and Heaths AONB); Local Community Members; Snape Parish Council Meeting; Church of St Mary the</p>	473	<p>Chapter 30 Tourism, Recreation and Socio-Economics of the ES includes an assessment of potential effects upon the tourism industry and economic impacts. Potential traffic impacts are considered in Chapter 26 Traffic and Transport of the ES.</p> <p>The Applicant set up a dedicated tourism working group to discuss key concerns, separate from the Expert Topic Group.</p> <p>The Memorandum of Understanding between the Applicant and Suffolk County Council will continue for East Anglia TWO and East Anglia ONE North.</p> <p>In response to the comment on the potential impact on the enjoyment of the AONB and tourism industry, Chapter 29 Landscape and Visual Impact Assessment of the ES defines the AONB baseline. Chapter 28 Seascape Landscape and Visual Impact Assessment of the ES details potential visual impacts which may impact tourism. The effect on tourism, which includes the effect</p>

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	<ul style="list-style-type: none"> Visitors come for peace and wildlife which will be impacted. Impact on tourism at Aldeburgh, Thorpeness, Snape, Friston, Knodishall, Aldringham and Leiston. Concern over impact on Snape Maltings and the Benjamin Britten concert hall. Job losses due to impacted tourism. Impacts with cable corridor crossing bridleway. Impact on £210/ £250m local tourism industry with a total of 4 million visitor trips (day and staying) and total tourism related employment standing at 4655 jobs, which is significant in a predominantly rural county. Cannot mitigate loss of visitors and change in economy. Long term impact on tourism. Tourists may just go to other seaside towns. Tourism impact of closed footpaths and beaches. Impacts on recreation such as cycling and walking. Tourism will be affected by substations impacting the beauty and tranquillity of the area. Impact on Duke of Edinburgh activities. Construction of cable route will deter visitors throughout the construction period from visiting Manor Farm bed and breakfast. Long term recovery of bed and breakfast and holiday cottages business. 	<p>Virgin, Friston; Leiston-cum-Sizewell Town Council; Aldeburgh Society; Save our Sandlings; Friston Parish Council / SASES; Aldeburgh Business Association; The Suffolk Coast DMO; Darsham Parish Council; Aldringham-cum-Thorpe Parish Council; Snape Maltings; Save Our Sandlings; National Trust, Fisherman; Waveney District Council; Suffolk Coast and Heath AONB</p>		<p>on tourism within the AONB, during construction and long term is assessed in sections 30.6.1.4 and 30.6.2.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES. Enjoyment and impacts on wellbeing are discussed in Chapter 27 Human Health of the ES.</p> <p>The effects on tourism and hospitality businesses are considered in sections 30.6.1.3 and 30.6.2.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES. The effect on tourism based on recreation and amenity impacts, is assessed in sections 30.6.1.4 and 30.6.2.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES.</p> <p>The comments regarding the value of tourism within East Suffolk and the Suffolk Coasts and Heaths AONB were noted.</p> <p>The Applicant recognises the importance of the AONB to the tourism industry (Section 30.5 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES). Potential impacts on tourism are detailed in Sections 30.6.1.4 and 30.6.2.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES.</p> <p>The comments regarding the importance of the Suffolk Coast and Heaths AONB and the Heritage Coast in Suffolk, from a landscape and natural beauty perspective as well as a vital economic role were noted. The presence of the AONB was a key consideration in site selection and siting for the onshore substation.</p>

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	<ul style="list-style-type: none"> Inability to hold shooting activities during construction and operation. Not possible to 'hold birds' on the farm. Friston church is part of a trail of historic rural churches which attracts visitors. Thorpeness area has grown and gets overcrowded and the beach allows dog walkers all year round and through Park Run activities. AONB is visited for heritage, music, art, walking, photography and space. Following construction, demand will take a considerable number of years to recover and re-establish for staying at holiday cottages. Caravan rally which takes place annually (August) on land to the south of the proposed indicative transition bay area of search must not be disrupted. Impact on golf clubs. Ness House, Thorpeness bridleway has been designated a haul road. Closing tracks will discourage tourism from cyclists, birdwatchers, runners and orienteering groups. Vehicles will largely disrupt tourism. Damage to Aldeburgh's art tourism. Impact of the industrial compounds on the rural/coastal environment. Impact on sales of fish at the beach. Impact to Minsmere Bird Sanctuary. Impact of loss of escape for people living in London. 	Partnership; Suffolk Preservation Society; Aldeburgh Town Council		<p>Chapter 4 Site Selection and Assessment of Alternatives of the ES discusses how the AONB was factored into decision making, including consideration of the AONB special qualities. Since PEIR, further refinement to the East Anglia TWO windfarm site boundary has been undertaken. The north-south extent of the East Anglia TWO windfarm site has therefore been reduced (see Chapter 4 Site Selection and assessment of Alternatives, section 4.6 and Figure 4.3) in order to mitigate potential seascape impacts upon the AONB, without a reduction in wind turbine numbers or generation capacity.</p> <p>Perception impact during construction were omitted from the PEIR and have now been included for project alone and cumulatively (see sections 30.6.1.4 and 30.6.5.1.4 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES).</p> <p>Based upon the assessment in sections 30.6.1.3, 30.6.1.4, 30.6.2.2 and 30.6.4 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES, it is considered that there are no significant adverse impacts upon tourism and recreation receptors either for the proposed East Anglia TWO project alone or cumulatively with the proposed East Anglia ONE North project. Mitigation is therefore only proposed for contributors to potential impact (e.g. air quality, noise and traffic mitigations).</p>

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	<ul style="list-style-type: none"> Impact on wedding venues. Impacts to key events (e.g. Aldeburgh Poetry Festival, High Tide Theatre Festival and Aldeburgh Literary Festival). Concern over inhibiting access to Red House (including its library and archive). Significant concerns over the damage the construction works would have on The Aldeburgh 'Brand'. Visitors are attracted to the East Suffolk area by the character, culture, food, clean beaches and spectacular coastline, countryside and wildlife of the area. This would all change due to the project. Visitors are likely to use social media to tell their friends the tranquillity they have come for has been disturbed. Most of the shops on Aldeburgh High Street depend on tourism. Impact on local fisherman's fish sales. Concern over seascape impact on tourism at Kessingland, Covehithe and Southwold where tourism and the coast are a massive draw to visitors, holiday makers and second-homeowners. Impacts on the enjoyment of the AONB and tourism industry. The construction of the cable routes has the potential to negatively impact the ability of residents and visitors to enjoy the AONB. The tourism business in the AONB is based to a large degree on quiet informal recreation in the 			<p>Both visual impacts to the seascape from the shore and the associated mitigation measures, are addressed in full in Chapter 28 Offshore Seascape, Landscape and Visual Amenity of the ES .</p> <p>Since PEIR, further refinement to the East Anglia TWO windfarm site boundary has been undertaken. The north-south extent of the East Anglia TWO windfarm site has therefore been reduced (see Chapter 4 Site Selection and Assessment of Alternatives of the ES, section 4.6 and Figure 4.3) in order to mitigate potential seascape impacts, without a reduction in wind turbine numbers or generation capacity. The boundary is now 3km further from Covehithe and 2km further from Southwold when compared to the PEIR boundary.</p> <p>Residual impacts range from negligible to minor/moderate, and as such potential tourism, recreation and socio-economic impacts will also vary.</p> <p>Visual impacts are assessed in both Chapter 28 Offshore Seascape, Landscape and Visual Amenity and Chapter 29 Onshore Landscape and Visual Amenity of the ES.</p> <p>Residual visual impacts range from negligible to minor/moderate adverse, and as such potential tourism, recreation and socio-economic impacts will also vary. Impacts to tourism and recreation amenity are considered further in sections 30.6.1.4 and 30.6.2.2 of</p>

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	<p>countryside, walking and cycling, and enjoyment of landscapes, wildlife and cultural experiences.</p> <ul style="list-style-type: none"> • The Suffolk Coast and Heaths AONB and the Heritage Coast is one of the most important parts of Suffolk, from a landscape and natural beauty perspective but also plays a vital economic role. • The Suffolk Coastal and Waveney District Councils' Volume and Value Study for all of Suffolk (2017 data estimated that the total value of tourism is £2.03bn, with 42,118 tourism related jobs. The impacts and mitigation measures need to be identified as soon as possible. • With a cable route 32m wide the Applicant accepts in its document that this will have 'significant environmental impacts'. The business association feels that the impact of ugly and extensive construction work on tourism will also be significant. • Impact on tourism and recreation resulting from landscape and seascape impacts during the construction and operation phases along with associated mitigation strategies is an area Waveney District Council is particularly concerned with. • The Applicant should fully acknowledge the likely impacts of the proposals on the enjoyment of the AONB and the economic benefits associated with that enjoyment. 			<p>Chapter 30 Tourism, Recreation and Socio-Economics of the ES.</p> <p>The Applicant recognises the importance of the AONB to the tourism industry (section 30.5 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES). Potential impacts on tourism are detailed in sections 30.6.1.4 and 30.6.2.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES .</p>

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Topic	Feedback	Stakeholders	Number of times feedback received	Action
	<p>Impacts on local residents</p> <ul style="list-style-type: none"> Concern over impact and disruption during cable laying. Impact on quality of life at Friston. Loss of well used footpaths (at Friston and cable route). Cable route impact on Fitches Lane, destroying walk to Knodishall. Walkers should be able to enjoy the paths at Thorpeness. Impact on footpath connecting St Andrews Church Aldringham to Aldringham Common near the Old School House. Loss of allotments. Concerns over long term impacts. Traffic impacts on Aldeburgh residents. Disruption to village of Thorpeness, impact on quality of life. PEIR documents do not consider the real impact of the proposals on Friston village and the wider area. Impact on peace and tranquillity of the area. Concern over residents living on Leiston Road, Aldeburgh. Concern about the Warden's Trust (local charity for children and adults with learning and physical disabilities) as they will be adjacent to the landfall – impacts of traffic and interaction between workers and children. 	<p>Local Community Members; Snape Parish Council Meeting; Thorpeness Residents Meeting; Church of St Mary the Virgin, Friston; Leiston-cum-Sizewell Town Council; Aldeburgh Society; the Hotel Group Ltd.; Friston Parish Council / SASES; Aldeburgh Business Association; Aldringham-cum-Thorpe Parish Council; Save Our Sandlings; Sizewell Residents;</p>	449	<p>Chapter 30 Tourism, Recreation and Socio-Economics of the ES includes an assessment of factors that have the potential to affect local communities such as noise or visual impact and potential impacts to Public Rights of Way.</p> <p>The outline management of PRow will be indicated in the PRow Strategy, and this includes details for any temporary and permanent diversions. Exact details on management measures will be agreed with the Local Planning Authority pre-construction.</p>

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	<ul style="list-style-type: none"> Concern over proposed cable route impacting residential properties and primary school in Knodishall. Fear of future developments. No commitment to ensure residents are not affected. Historic traditions wiped out such as Beating of the Bounds of the church benefice. Church services intruded by industrial noise. Mitigation measures cannot compensate for destruction. Dynamic of village changed. Impact on rural tranquillity and AONB tranquillity. Loss of privacy, including due to HGVs. Impact of reduced access to bridleways due to cable route and haul road. Impact on church, churchyard, village hall (used for community organisation, clubs and societies) and used for events and fundraising such as Open Gardens, Classics (cars and bikes), the Christmas Fayre and concerts. Lack of understanding of the areas qualities, attributes and values. Impacts of Construction Consolidation Sites (CCS) on local residents. Concern that residents in both Gipsy Lane and Fitches Lane will be uninhabitable if the roads were closed. Impact on local amenity. 	<p>Suffolk Coast and Heath AONB Partnership; Aldeburgh Town Council</p>		

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	<ul style="list-style-type: none"> Impact on Thorpeness beach and common (used for walking, swimming, dog walking and recreational enjoyment). Friston in close proximity with both haul road and construction sites. Impact on sailors. Impact on recreation of woodland lost and creation of a pond at Suffolk Lodge. Impact on access to property. Impact on general amenity of Holding (Bull's Hall). Lorry holding/ marshalling area off the public road at Elm Tree Farm on the B1353 would impact Elm Tree House and impact on privacy, security and safety. Concern over effects on mental health and physical wellbeing. Impact on retired residents. Impacts on communities beyond the immediate vicinity of the project (along the A14/A12 junction to Lowestoft). Industrialisation of a rural area. Public footpaths have been rerouted to follow the line of the pylons (the workforce are not allowed to work under the pylons but the public are expected to walk there). Impacts to fisherman and swimmers Impacts to social infrastructure. Concerns over repeat of social problems that arose when other developments were under construction. 			

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	<ul style="list-style-type: none"> Will make daily life difficult and possibly dangerous. Removal of existing footpath 6 will create a hostile environment for walkers. Care homes identified along the proposed cable route have fewer elderly or vulnerable residents than live in Friston: Of the 117 persons aged 65 and over, at least 25 live within 500m of the proposed substation(s). No accommodation strategy – only 30% of workers from the local community. 			
	<p>Socio-economic impacts</p> <ul style="list-style-type: none"> Economy reliant on tourism impacted. Impacts on the local economy. Concern over compulsory purchase orders of land and properties north and south of Victoria Road, Aldeburgh. No future employment in East Suffolk from the substation (post – construction). Only short term jobs in construction. Property devaluation, especially with properties in direct proximity to the substation site. Inability to sell and move house (this is already happening in Friston). Costs incurred over inability to sell property. Market has dropped by 50% for houses. Traffic impacts on businesses in Aldeburgh. Construction workers will require accommodation. 	<p>Local Community Members; Snape Parish Council Meeting; Leiston-cum-Sizewell Town Council; Aldeburgh Society; Friston Parish Council, SASES, Therese Coffey; Save Our Sandlings; Darsham Parish Council; Suffolk</p>	381	<p>An assessment of impacts on the local economy and tourism economy has been included in Chapter 30 Tourism, Recreation and Socio-Economics of the ES. Mitigation measures will be provided where appropriate.</p> <p>Employment opportunities - offshore employment and the supply chain to support the proposed East Anglia ONE North and TWO projects have been estimated using a supply chain assessment for East Anglia ONE (currently in construction on the East Coast). During the operation phase, this assumes that direct employment would generate between 100 and 300 full time employment opportunities in the UK. It is assumed that the majority of this would be procured from the New Anglia LEP region. It is assumed that the proposed East Anglia ONE North and East Anglia TWO project would operate for at least 25 years (25 years is therefore taken</p>

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	<ul style="list-style-type: none"> No community benefit. Workers staying at the accommodation will reduce holiday trade and less money will be spent in shops and cafes which may cause them to close. No accommodation strategy. Need details on compensation. Impact on high street trade. Devalued bed and breakfasts, holiday cottages and rental value. Financial impact on businesses, such as bed and breakfasts and holiday cottages. Visitors less likely to return. Specialist construction jobs would be sourced from outside the local community. The area is struggling to keep a balance between being a rural and coastal area and industry needs and demands. Impact on business on Thorpeness cliff top. Impact on amenities such as schools and hospitals. No plans for additional infrastructure or amenities. No police in area already. Financial impacts on local community from traffic delays. Business turnover rates are proof that trading successfully is very precarious in Aldeburgh and any impacts could make the situation worse. Aldeburgh and Thorpeness will suffer irreversible decline. 	<p>Energy Action Coalition; Save Our Sandlings; Sizewell Residents; Waveney District Council; Aldeburgh Town Council; SCC; SCDC (now East Suffolk Council)</p>		<p>as the worst case as any greater period would increase positive effects).</p> <p>The Applicant is assessing the potential impacts of the proposed projects and considering mitigation that might reduce or remove any potential impacts identified. The projects will seek to avoid or mitigate against adverse impacts with the aim of removing or reducing the potential for impacts.</p> <p>In the event that a stakeholder believes that they have been adversely affected by either project during construction or operation of one or both of the projects, (e.g. property value) the general law of compensation in England will apply to any statutory claims for compensation made, and these are set out in legislation which the Applicant will comply with. This is not intended to be legal advice. Should a party believe that they require further advice on these matters, they should consider seeking their own legal advice.</p> <p>The comment regarding the larger share of employment is likely to be based in ports such as Lowestoft or Great Yarmouth was noted. The employment impacts are considered in relation to quantity and duration of the jobs created as shown in sections 30.6.1.1, 30.6.1.2 and 30.6.2.1 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES.</p> <p>The comment on the growing ageing population and a shrinking working age population was noted.</p>

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	<ul style="list-style-type: none"> • Loss of farming income and agriculture. • Impact of workers moving into the area and overwhelming the local village population. • Interference with electrical devices. • Impact of abnormal working hours. • Loss of equity that people are relying on to fund their retirement. • Local people do not have the skills to benefit from any new jobs. • Equity in owner-occupied homes has already been adversely affected by the announcement of the project, which has blighted future financial planning, particularly in respect of future care needs • Potential increased pressure on local health services and emergency vehicles. • There are no environmental, social or economic benefits for the area from this siting of the landfall, cable route and substations. • Recent research by Research Policy Analysts for the Alde and Ore Estuary Partnership, reliably and empirically, documented a value of circa £100 million per annum value of tourism and farming to the immediate area subject to these proposals; which would therefore be at risk for at least a number of years. the Applicant were unaware of the values contained in that research and were therefore not in a position to identify the potential economic impact on the immediate area. • Disagree with statements 173 – 176 of Chapter 30 which claim there will be beneficial 			

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	<p>employment impacts, no significant adverse impacts and “significant beneficial impacts to short-term, long-term and tourism employment”.</p> <ul style="list-style-type: none"> • A larger share of the employment is likely to be based in ports such as Lowestoft or Great Yarmouth for the offshore construction with the longer term opportunities often created in areas a considerable distance from the communities experiencing the permanent effects of the onshore substations and infrastructure. Waveney District Council and SCC/SCDC welcome discussions around the opportunities for the Port to be involved in the project longer term. • No commitment made by the Applicant to achieve local, regional and national employment percentages included in the assessment. Waveney District Council would like to engage with the Applicant to set realistic, but, stretching recruitment expectations as part of East Suffolk Council. • The Applicant creates the argument that we have a growing ageing population and a shrinking working age population and therefore the projects attracting more people of working age to Suffolk is a positive. Although Waveney District Council , SCC and SCDC welcome this positive aspiration the population figures can also be interpreted as a driver of a tight labour market and therefore these projects would further exacerbate an already tight labour market. 			

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	Positive Socio-Economic Impact <ul style="list-style-type: none"> Boost to local businesses from the workers. 	Local Community Member	1	Noted.
	Safety concerns <ul style="list-style-type: none"> Concern over construction workers in public areas and proximity to property. Concern over fire, safety and security. Concern over safety of the supply of electricity. Concern over malicious acts. Concern over terrorism and deterring tourism. Danger to pedestrians of removing pavements near the Thorpeness pavilion during drilling. Concentrating multiple major energy sources in one place is a risk to national security as it becomes an easy target. Concern over accidental injuries caused by increase of people working and travelling in the area. Concerns over false alarms and reiggers caused by the safety and security measures proposed. Lack of consideration for projection of materials and toxic fumes that usually accompany fires. 	Local Community Member; Church of St Mary the Virgin, Friston; Friston Parish Council / SASES	15	Security measures proportionate to the substation (and in line with similar facilities) will be implemented.
	Cumulative impacts <ul style="list-style-type: none"> Cumulative impacts on accommodation meaning no availability for those visiting the area. The price of rental properties will increase and local people will be priced out and forced to move out of the area. 	Local Community Members	5	The worst case assessed for accommodation impacts in section 30.6.1.3 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES considers a scenario whereby the peak number of non-residential workers occurs during peak tourism season. This shows that non-residential workers from the proposed East Anglia TWO project will only take up 47% of the rooms

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	<ul style="list-style-type: none"> Concern that it is suggested that another project will not cumulatively worsen the situation. Disbelief that the cumulative impact with Sizewell C would have both short and long term beneficial impacts on tourism and no significant adverse impacts. 			<p>available assuming 80% occupancy from visitors (see Table 30.63 and Table 30.64 of Chapter 30 Tourism, Recreation and Socio-Economics). Therefore, as assessed, non-resident workers will provide a benefit by using extra capacity but will not displace tourists.</p> <p>The cumulative assessment suggests that there may be excess demand for rooms when Sizewell C is considered assuming that peak numbers for all project coincide (by approximately 130 workers in total, see Section 30.7.2.1.3 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES). However using revised assumptions from EDF Energy, based upon experience from Hinkley Point C, it is likely that some construction workers engaged in long term work may well look to the rental market rather than hotels etc.</p> <p>Cumulative impacts are considered in section 30.7 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES.</p>
	<p>Tourism and Socio-Economics Mitigation Suggestions</p> <ul style="list-style-type: none"> Marketing campaign to sell benefits of Suffolk Coast as mitigation. Strategy to boost local economy and investment into local communities. There should be a legacy plan. Investment into local educational, recreational and social projects. 	Socio-economics Expert Topic Group (Suffolk Coastal and Waveney District Council (now East Suffolk Council), SCC, Snape	32	<p>All feedback received during the consultation phases relating to community benefit has been logged and collated by the Applicant. This information has been considered during the creation of the Applicant's principles for community benefit funding. A commitment was made to a community fund in July 2019 to Suffolk County Council and East Suffolk Council, to be further decided post-consent.</p> <p>Any changes or diversions to Public Rights of Way (PRoW) are detailed in the OPRoWS (Document</p>

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	<ul style="list-style-type: none"> Mitigate impacts on amenity. Access needs to be kept open to both residents and tourists to the coastal strip and the numerous footpaths across this part of the AONB and beyond. Improve community assets. Management measures, alternative routes and mitigation measures for the PROW network must be agreed with the council prior to DCO submission. Waveney District Council, SCC and SCDC expect the Applicant to set and deliver an ambitious plan to maximise the skills, education and employment outcomes for local residents. There are clear opportunities for the Applicant to capitalise on the skills and employment programmes already being delivered in East Suffolk and across Suffolk, working with us and other local organisations across our skills system to create a legacy that will benefit the area and positively impact people's lives for years to come. Without additional mitigation, evidence suggests that local economic benefits will be lower than anticipated whilst negative effects such as displacement are likely to be greater. It is therefore essential that Waveney District Council, SCC and SCDC seek from the Applicant early agreement of a robust and properly resourced mitigation plan to increase local economic benefits and reduce negative effects. 	<p>Maltings and Suffolk Coast and Heaths AONB); Suffolk Coast and Heath AONB Partnership; Local Community Members; Aldringham-cum-Thorpe Parish Council; SCC; SCDC (now East Suffolk Council); Waveney District Council; Public Health England ; Norfolk County Council</p>		<p>Reference: 8.4), as are mitigation and enhancement measures.</p> <p>The Cumulative Impact Assessment (CIA) has been updated with the latest information for Sizewell C New Nuclear Power Station in section 30.7 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES. The National Grid Interconnectors have not been screened in to the CIA as there is insufficient information on these projects to undertake assessment. The list of projects screened into the CIA has been developed in consultation with the Local Planning Authorities.</p> <p>Embedded mitigation measures are included in section 30.3.3.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES. Additional measures have been included in the form of enhancements in section 30.3.3.1 of Chapter 30 Tourism, Recreation and Socio-Economics.</p> <p>Construction employment is by its nature temporary, as one project finishes workers move to another. As such, currently employed personnel may become available to work on the proposed East Anglia TWO project throughout the duration of the construction period. In addition, onshore construction employment will have a low magnitude of effect (see Table 30.53 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES). Therefore, labour displacement is not likely to be an issue.</p>

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	<ul style="list-style-type: none"> Waveney District Council, SCC and SCDC seek expect the Applicant to develop clearly defined partnership strategies focussed on potential areas of economic benefit, such as, inward investment and supply chain development alongside developing innovative schemes to encourage non home based workers to spend money with local retailers. Waveney District Council expect to see a clear, realistic, positive mitigation strategy with key targets and ranges for financial investment that you are proposing for each economic area affected, including skills, tourism, supply chain etc. The Council need to have greater understanding of and further discussion on the intent and scale of investment from the Applicant. To maximise the benefits of the projects in the local area, there needs to be a strong and proactive partnership between the Applicant, the local Councils and other stakeholder bodies including New Anglia Local Enterprise Partnership (NALEP) and the Suffolk Chamber of Commerce. the Applicant is equally expected to work with these stakeholders to minimise negative economic impacts on local communities and the local and regional economy. This includes defining mitigation measures to be included in the final DCOs. The Memorandum of Understanding between the Applicant and Suffolk County Council used to deliver Skills and Education interventions for EA3 			<p>Based upon the assessment in sections 30.6.1.1.2 and 30.6.2.1.2 Chapter 30 Tourism, Recreation and Socio-Economics, it is concluded that there will be no employment displacement. Based upon the assessment in sections 30.6.1.3, 30.6.1.4, 30.6.2.2 and 30.6.4 of Chapter 30 Tourism, Recreation and Socio-Economics, it is considered that there are no significant adverse impacts upon tourism and recreation receptors either for the proposed East Anglia TWO project alone or cumulatively with the proposed East Anglia ONE North project. Mitigation is therefore only proposed for contributors to potential impact (e.g. air quality, noise and traffic mitigations).</p> <p>Economic benefit would derive from construction employment (plus indirect and induced employment) and benefit to the tourism and hospitality sector (as discussed in sections 30.6.1.1, 30.6.1.2 and 30.6.1.3 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES). Labour displacement is not considered to be significant, given the low magnitude of effect (see Table 30.53 of Chapter 30 Tourism, Recreation and Socio-Economics) and temporary nature of construction work in general.</p> <p>Potential negative effects during construction would come from disturbance to tourism and recreation assets (see section 30.6.1.4 of Chapter 30 Tourism, Recreation and Socio-Economics) which are each mitigated (i.e. effects on traffic, air quality, noise etc) to avoid significant impact. The longer term effects upon tourism</p>

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	<p>has been positive and has delivered many positive results. It is not designed to be a tool for local employment targets and these should be discussed and agreed as part of the planning process. If the Applicant were to not proceed with full build out of either project we expect there to be mechanisms in place to replace the existing skills and education Memorandum of Understanding with the Applicant and return any skills and education commitments to tools of planning.</p> <ul style="list-style-type: none"> • The Applicant should provide greater investment in skills training (legacy first) and to set specific targets both for the Applicant and their contractors to deliver a higher proportion of local and regional workers in higher skilled jobs. • The scheme should continue to identify any additional opportunities to contribute to improved infrastructure provision for active travel and physical activity. Links to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of wider green infrastructure. • Any new or restored green / open space and PRoW should be sited and designed to ensure access across the life course and account for the uneven distribution across communities. The mitigation plans should identify the design principles or standards that will be adopted and any support for community engagement to promote use of these assets to local communities. 			<p>are not considered significant, however, following feedback on offshore seascape effects further refinement to the East Anglia TWO windfarm site boundary has been undertaken in order to mitigate potential seascape impacts, without a reduction in wind turbine numbers or generation capacity (see Chapter 4 Site Selection and assessment of Alternatives of the ES, section 4.6 and Figure 4.3).</p> <p>A supply chain plan will be developed post-consent in advance of the Contracts for Difference (CfD) process (see section 30.3.3.2 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES).</p> <p>A skills strategy was developed by SPR for East Anglia ONE in conjunction with the relevant Local Planning Authorities This is being developed further for East Anglia THREE. The implementation of this strategy has created the skills environment required for the proposed East Anglia TWO project.</p> <p>Positive benefits to date from East Anglia ONE are highlighted in Chapter 2 Need for the Project of the ES, section 2.4, including the long term investment in Lowestoft.</p> <p>Enhancement measures are included in section 30.3.3 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES.</p>

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	<ul style="list-style-type: none"> Due to the negative impact that will be felt in terms of employment displacement and tourism (cumulatively with Sizewell C) Waveney District Council; SCC and SCDC would expect to see the Applicant seek to mitigate these impacts and where this cannot be done we expect the Applicant to propose mitigation funds for tourism, housing, communities etc. There is no reference to a Tourism Fund to mitigate negative impacts on the tourism and visitor economy. There should be a tourism mitigation fund and a firm commitment from the Applicant to support marketing and promotion activities to be undertaken by the Suffolk Coast DMO. There should be a wider compensation package from the Applicant and the Government that deals with the broader impacts on community, environment and businesses of these alongside other energy projects in the vicinity. The County Council would support measures that would encourage/enable people currently excluded from the formal labour market to be supported into jobs at any level/degree of permanency. The Council would especially welcome measures that will enable permanent, long term job opportunities to be taken up by local people. There is a need for an Education, Skills and Employment Strategy to be prepared to address / consider the wider cumulative impacts arising 			<p>Section 30.6.1.1 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES assesses the labour required and concludes that the majority of onshore construction labour will be sourced regionally. As noted above, we have updated the skills baseline with information provided by ESC. Some highly specialist skills will have limited availability which may well be sourced outside the region and may be scarce at a national level. Offshore operations will provide the longer term opportunities for employment and therefore skills enhancement.</p> <p>The comment regarding no reference to a Tourism Fund was noted.</p> <p>Enhancement measures are considered outside of the EIA process and therefore not included as part of the assessment presented in Chapter 30 Tourism, Recreation and Socio-Economics of the ES.</p> <p>The comment regarding the wider compensation package from the Applicant and the Government was noted.</p> <p>A skills strategy was developed by SPR for East Anglia ONE in conjunction with the relevant Local Planning Authorities. This is being developed further for East Anglia THREE. The implementation of this strategy has created the skills environment required for the proposed East Anglia TWO project.</p>

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	<p>from other planned NSIPs in the area (i.e. covering the above offshore projects and Sizewell C). It is suggested that contact be made with the Norfolk County Council's Economic Development Manager.</p> <ul style="list-style-type: none"> The Applicant should set realistic but stretching employment targets. There is no commitment by the Applicant to the employment figures provided within the PEIRs. 			<p>The County Councils comment was noted. Employment opportunities are included in sections 30.6.1, 30.6.1.2, 30.6.1.3 and 30.6.2.1 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES.</p> <p>Supply chain targets are not being created at this time. A supply chain plan will be developed post-consent (see section 30.3.3.2 of Chapter 30 Tourism, Recreation and Socio-Economics).</p>
	<p>Local community benefit/ funds suggestions</p> <ul style="list-style-type: none"> Long term funding such as neighbourhood nursing, child care projects, other health resources. Development of village hall or children's playground at Aldringham. So far no benefits to Friston village such as free electricity, no council tax or improved local amenities. Upgrading and resurfacing the track from the C228 to the Wardens Trust disabled retreat by Ness House, this would need some discrete speed humps along the route. This would be a community donation by the Applicant over and above any community fund agreed with the principal councils. A community fund should be set up to compensate affected communities for loss of amenity and disruption (larger than Gabbard and 	<p>Local Community Member; Leiston-cum-Sizewell Town Council; Aldeburgh Town Council</p>	13	<p>All feedback received during the consultation phases relating to community benefit has been logged and collated by the Applicant. This information has been considered during the creation of the Applicant's principles for community benefit funding. A commitment was made to a community fund in July 2019 to Suffolk County Council and East Suffolk Council, to be further decided post-consent.</p>

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	<p>Galloper funds). This should be targeted appropriately at affected communities.</p> <ul style="list-style-type: none"> • Long term mitigation to include individuals and local businesses before, during and post construction. • Set up a Health and Welfare fund to help mitigate the loss of equity. • Meet with local community groups regularly to discuss the project. • Concerns over no attractions offered for Friston residents in order to support the project (e.g. free electricity or new Village Hall). • The minimum compensation and mitigation that the Aldeburgh Town Council would seek for this project is the upgrading and resurfacing of the track from the 228 to the Wardens Trust disabled retreat by Ness House. This would need some discrete speed humps along the route. The track at the moment is pitted and rough which makes the transfer of carers and disabled visitors very unformattable indeed. This would be a community donation by the Applicant over and above any community fund agreed with the principal councils. It runs beside the initial cable route and could be easily incorporated into the project. • The Applicant to formulate a strategy for mitigating public perception that Aldeburgh and the surrounding area is being ruined by large-scale development. 			

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	<p>Footpath Mitigation Suggestions</p> <ul style="list-style-type: none"> Closure should be kept to a minimum and diversion routes as short as possible, clearly labelled. Footpaths or detours close by (where necessary) should remain open throughout the construction period. Diversion of public right of ways closed or diverted along roads. Supply a cycle path between Aldringham and Thorpeness. No Right of Way should be closed off. No Right of Way tracks should be upgraded to allow traffic so they can be maintained for horse riders. All Rights of Way diversions need to be managed safely to ensure they do not endanger horses and riders. The footpath travelling north from Friston to the proposed sites should loop round and connect to the existing one alongside Woodside Farm so that a circular route is created, even though it would have to be so much smaller it would at least allow villagers and visitors the opportunity to walk. 	Local Community Members; Leiston-cum-Sizewell Town Council	9	<p>An OPRoWS (Document Reference: 8.4) has been submitted with the DCO application, secured as a requirement of the draft DCO. As detailed within the OPRoWS (Document Reference: 8.4), 30 of the 38 PRoWS within the onshore development area would have management measures or temporary alternative routeing. However, this is a common occurrence during the construction of linear infrastructure (such as cable routes) and can be mitigated through appropriate signage and safety measures, that will be agreed with SCC prior to construction through the development of the final PRoWS.</p> <p>The proposed East Anglia TWO project has undergone an extensive selection process which has involved incorporating environmental considerations in collaboration with the engineering design requirements, this includes minimising impacts to local residents in relation to access to services and road usage, including footpath closures.</p> <p>There are two PRoWs in the vicinity of the East Anglia TWO substation and National Grid substation location that will require permanent diversion. Precise details for the management of each new PRoW, including the specification of the PRoW permanent diversions, will be agreed with the Local Planning Authority (acting on behalf of the local highway authority) through consultation on the final PRoWS prior to commencement of the relevant stage of works.</p>

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				The use of HDD (see Chapter 6 Project Description of the ES for further details) would remove impacts to the coastal path and beach at Thorpeness.
Habitat Regulations Assessment (HRA)	<p>HRA Onshore Ornithology Project Design</p> <ul style="list-style-type: none"> Section 3.2.1.6 NE welcomes that 'HDD techniques would be employed where practicable, where the indicative onshore development area overlaps with the Sandlings SPA. The HDD entry pits would (where possible) be located away from the SPA to avoid any potential impacts'. Section 3.2.1.7 Assuming a worst case scenario of open cut trenching across the SPA, with EA2 and EA1N following sequentially i.e. with a disturbance period of up to 6 years during construction with additional time for habitats to be re-established; The structure and function of the habitats of the qualifying feature may be reduced as a result of the proposed development, over a number of breeding cycles. Given that the developer has identified that there is no suitable habitat for Nightjar outside the SPA this will put increasing pressure on an already declining population. NE advise that on the information currently available an adverse effect on integrity of the SPA cannot currently be ruled out. Further information needs to be provided regarding the final design and timing of proposed works in relation to the SPA features. 	NE	2	<p>Noted.</p> <p>Detailed information on the open-trenching and alternative HDD options for crossing the SPA/SSSI and within the landfall area is presented in Chapter 6 Project Description of the ES, and summarised in the Information to Support Appropriate Assessment Report (Document Reference: 5.3) and Chapter 23 Onshore Ornithology for the purposes of the impact assessment.</p> <p>Based on the RSPB historic data from 2009 to 2018, and survey data in 2018 and 2019, no nightjars have been recorded where open-cut trenching is used to cross the narrowest point of the SPA. The construction here would last an estimated one month in duration. The Applicant has committed to conducting this estimated one month of open cut trenching through the SPA outside of the breeding bird season, therefore minimising potential impacts to the features of this designated site. If a HDD technique were to be employed, construction would be approximately 12 months in duration and it would not be possible to impose a seasonal restriction on such works. In terms of construction scenario 2, both projects would be subject to the seasonal restriction for the open-cut trenching used to cross the SPA.</p>

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				Therefore, this assessment concludes that there will be no adverse effect on the integrity of the SPA.
	HRA Onshore Ornithology Methodology <ul style="list-style-type: none"> Paragraph 55 of the EA2 HRA document (p.14) concludes that "...there would be no significant adverse effect on the integrity of the SPA due to habitat loss" (emphasis added). The Habitats Regulations do not assign a significance to an AEOL conclusion; either there is an adverse effect or there isn't. Paragraph 63 of the EA2 HRA document (p.16) concludes that "...an unmitigated significant effect on the integrity of the SPA due to construction disturbance to breeding nightjar cannot be ruled out" (emphasis added). There has already been screening completed which has identified that a Likely Significant Effect is possible and the current assessment should be avoiding an Adverse Effect on Integrity (AOEI) of the SPA. The wording for this section needs to be revised to ensure it accords with the Habitats Regulations. 	RSPB	2	Noted. The relevant conclusions have been updated throughout the Information to Support Appropriate Assessment Report (Document Reference: 5.3) to read "no adverse effect on the integrity of the SPA".
	HRA Onshore Ornithology Impact <ul style="list-style-type: none"> Section 3.2.1.1, Para.40 Nightjar are also recorded on the Sandlings SPA in April (Sandlings SPA Conservation Objectives Supplementary Advice, 2019). 	NE; RSPB	6	Noted, this is reflected in section 3.2.1.1 of the Information to Support Appropriate Assessment Report (Document Reference: 5.3).

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	<ul style="list-style-type: none"> Section 3.2.2.1 Woodlark are recorded on the site February to August. The HRA does not consider the timing of construction in relation to sensitive periods for features (Sandlings SPA Conservation Objectives Supplementary Advice, 2019). Section 3.2.1.3 Assessment of habitat loss to nightjar due to onshore cable infrastructure – NE welcomes that the project design has minimised the overlap of the onshore cable route with the Sandlings SPA, choosing a crossing at the narrowest point. NE reiterate their preference for HDD under the SPA , rather than open cut trenching through the site. There is currently insufficient detail provided on the worst case scenario i.e. open cut trenching if adopted and how habitats would be restored to provide good quality habitat for the species. There is no consideration of timing of works in relation to the features of the site. Section 3.2.1.4 Assessment of disturbance to nightjar due to onshore infrastructure – NE welcomes the reduction of the working corridor width within the SPA. There is currently insufficient information provided relating to noise, light or vibration disturbance effects on this species. The direct habitat loss associated with the in combination open cut trenching working corridor and the area of disturbance from light, noise and vibration, may reduce the foraging area available to Nightjar. The structure and 			<p>Noted. This has been added into section 3.2.1 of the Information to Support Appropriate Assessment Report (Document Reference: 5.3).</p> <p>Where an open-cut methodology is used to cross the narrowest point of the SPA, the construction would last an estimated one month in duration. The Applicant has committed to conducting this estimated one month of open cut trenching through the SPA outside of the breeding bird season (mid-February to September), therefore minimising potential impacts to the features of this designated site. If a HDD technique were to be employed, construction would be approximately 12 months in duration and it would not be possible to impose a seasonal restriction on such works. The seasonality of works has been considered throughout section 3 of the Information to Support Appropriate Assessment Report (Document Reference: 5.3).</p> <p>Approval noted regarding the onshore cable route crossing at the narrowest point of the SPA. Detailed information on the open-trenching and alternative HDD options for crossing the SPA/SSSI and within the landfall area is presented in Chapter 6 Project Description, and summarised in the Information to Support Appropriate Assessment Report (Document Reference: 5.3) and Chapter 23 Onshore Ornithology of the ES for the purposes of the impact assessment.</p>

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	<p>function of the habitats of the qualifying feature may therefore be reduced as a result of the proposed development.</p> <ul style="list-style-type: none"> Section 3.2.2.7 Woodlark were recorded inside the SPA, on the SPA boundary and outside the SPA within the red line boundary. Assuming a worst case scenario of open cut trenching across the SPA, with EA2 and EA1N following sequentially i.e. with a disturbance period of up to 6 years during construction with additional time for habitats to be re-established. The structure and function of the habitats of the qualifying feature may therefore be reduced as a result of the proposed development, over a number of breeding cycles. NE advise that on the information currently available an adverse effect on integrity of the SPA cannot currently be ruled out. Further information needs to be provided regarding the final design and timing of proposed works in relation to the SPA features. As identified in our 2017 scoping response (231180) Timing of construction works could be a mitigation option. Paragraph 52 (p.14) indicates that “0.483ha of the SPA designation, or 0.01% of the whole SPA (3,405ha)” would be affected by the proposed works. However, paragraph 74 (p.18) states that “a temporary loss of up to 0.966ha of the SPA designation, or 0.03% of the whole SPA 			<p>Approval noted regarding the reduced width of the onshore cable route crossing the SPA.</p> <p>Detailed information on the open-trenching and alternative HDD options for crossing the SPA/SSSI and within the landfall area is presented in Chapter 6 Project Description. For the purposes of the assessment presented in the Information to Support Appropriate Assessment Report (Document Reference: 5.3), the relevant parameters in relation to disturbance have been considered and are discussed in sections 3.2.1.4.1 and section 3.2.2.4.1 of the Information to Support Appropriate Assessment Report (Document Reference: 5.3) for nightjar and woodlark respectively.</p> <p>The onshore development area has been refined to take into consideration the distribution of designated features of the SPA. Based on the RSPB historic data from 2009 to 2018, and survey data in 2018 and 2019, no woodlarks have been recorded where open-cut trenching is used to cross the narrowest point of the SPA. The construction here would last an estimated one month in duration. The Applicant has committed to conducting this estimated one month of open cut trenching through the SPA outside of the breeding bird season (mid-February to September), therefore minimising potential impacts to the features of this designated site. If a HDD technique were to be employed, construction would be approximately 12</p>

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	(3,405ha)." It is unclear why these figures are different and should be clarified.			<p>months in duration and it would not be possible to impose a seasonal restriction on such works. In terms of construction scenario 2, both projects would be subject to the seasonal restriction for the open-cut trenching used to cross the SPA. Therefore, this assessment concludes that there will be no adverse effect on the integrity of the SPA.</p> <p>The extent of SPA loss due to the proposed East Anglia TWO project alone would equate to 0.483ha, under the open-cut trenching scenario. When considered in-combination with the proposed East Anglia ONE North project, this would equate to 0.966ha in total (i.e. 2 x 0.483ha) (detailed in section 3.3.2.5.1.1 and section 3.3.3.5.1.1 of the Information to Support Appropriate Assessment Report (Document Reference: 5.3)).</p>
	<p>HRA Onshore Ornithology Mitigation</p> <ul style="list-style-type: none"> Paragraph 63 of the EA2 HRA document, p.16 clearly highlights that mitigation measures are required. The initial set of mitigation measures that have been considered (noting that, reducing working corridor length and width should not be considered "embedded mitigation" due to recent case law) are insufficient to alter the conclusion. Additional measures to limit the impact of disturbance on nightjar have been set out within the HRA, which primarily relate to a Breeding Bird Protection Plan (BBPP) and the presence of an Ecological Clerk of Works to ensure no activities 	RSPB	3	<p>Further breeding bird surveys, similar in scope to those 2018 surveys, have taken place within the onshore ornithology study from May to August 2019. As the target species present are found in distinct and predictable habitat types, the combination of two breeding seasons surveys, combined with historic data from 2009 to 2018 is considered to be sufficient to adequately determine typical distribution and abundance of these species.</p> <p>Mitigation associated with minimising the likelihood of a significant effect of construction activities on the</p>

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	<p>take place that could cause disturbance to breeding birds. The principles of these may be appropriate but will rely heavily on a suitable schedule of surveys to ensure accurate understanding of changes to breeding birds in the works area is known.</p> <ul style="list-style-type: none"> The RSPB also recommends that the BBPP sets out a clear communication strategy for updating site managers on the works schedule to ensure any impacts on site management or surveys required to effectively manage the site to maintain conservation objectives are minimised. To have confidence in any BBPP we recommend that this be drafted for consideration at examination to ensure that appropriate principles are agreed, and the key measures needed to be in place prior to and during construction have been formally agreed. Additional measures to limit the impact of disturbance on nightjar have been set out within the HRA (paragraph 216 EA2 and paragraph 216 EA1N), which primarily relate to a Breeding Bird Protection Plan (BBPP) and the presence of an Ecological Clerk of Works to ensure no activities take place that could cause disturbance to breeding birds. The principles of these may be appropriate, but will rely heavily on a suitable schedule of surveys to ensure accurate understanding of changes to breeding birds in the works area is known. The RSPB recommends that the BBPP update site managers on the works 			<p>Sandlings SPA have been outlined in Information to Support Appropriate Assessment Report.</p> <p>If an open-cut methodology is used to cross the narrowest point of the SPA, the construction would last an estimated one month in duration. The Applicant has committed to conducting this estimated one month of open cut trenching through the SPA outside of the breeding bird season (mid-February to August inclusive), therefore minimising potential impacts to the features of this designated site. If an HDD technique were to be employed, construction would be approximately 12 months in duration and it would not be possible to impose a seasonal restriction on such works. Entry and exit pits would be located outside of the SPA.</p> <p>Further pre-construction surveys would take place to help avoid disturbance effects during the construction period, as part of the BBPP. Further details on the BBPP are provided within the OLEMS (Document Reference: 8.7) submitted with this DCO application and secured under the requirements of the draft DCO.</p>

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	<p>schedule to ensure any impacts on site management or surveys required to effectively manage the site to maintain conservation objectives are minimised. We support the final bullet point of the proposed mitigation, specifically, "...Where, in the opinion of the suitably qualified ecologist, disturbance cannot be avoided by mitigation, construction works within the area of disturbance will be suspended until chicks have fledged." The RSPB recommends that such decisions should be taken in conjunction with NE and with the relevant landowners and/or site managers to ensure a fully informed and agreed approach is taken.</p>			
	<p>HRA Offshore Ornithology Baseline</p> <ul style="list-style-type: none"> 4.7.2.4.1. Apportioning of impacts in the non-breeding seasons to relevant SPA colonies - For the apportionment of impacts of species to relevant SPA colonies during the non-breeding seasons, NE would recommend that the data presented in the tables in Appendix A of Furness (2015) for the relevant species Biologically Defined Minimum Population Scales (BDMPSs) for each season (e.g. migration, winter etc.) are used. The apportionment of LBBGs to the Alde-Ore Estuary SPA and of kittiwakes to the FFC SPA in the non-breeding seasons has been undertaken using the relevant BDMPS sizes in Furness (2015). However, the figures from the 	NE; RSPB	10	<p>The assessments have been updated as advised.</p> <p>The lesser black-backed gull assessment has been updated with the addition of consideration of impacts assessed using the full breeding season.</p> <p>The estimation of the population size has been updated following review of the assessment and the methods used.</p>

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	<p>tables in Appendix A of Furness (2015) do not appear to have been used in the non-breeding season apportionment of gannets to the FFC SPA. Whether the colony figure in the BDMPS tables used is the adult figure or that for all ages depends on any Population Viability Analysis (PVA) model and outputs to be used. For example, the Applicant has referred to the outputs of existing PVAs done for gannet and kittiwake at FFC SPA at Hornsea 2. The mortality currency of these models is adults, so for example, calculating the proportion that the Flamborough kittiwake number of adults in the relevant seasonal BDMPS represents of the overall total number of kittiwakes of all ages in the relevant season would be acceptable, dependent on the site data used being for birds of all ages. the Applicant has done this for kittiwake, but our understanding is that the gannet apportionment has used a colony figure of birds of all ages (as has also been done for LBBG at the Alde-Ore). Given that the outputs of the existing PVAs tend to be on an adult currency, NE also advise that calculations of baseline mortality used in the HRA are undertaken on an adult currency, therefore using the adult colony figure and the adult mortality rate rather than on all ages.</p> <ul style="list-style-type: none"> RSPB note that (paragraph 65, p.26), except for lesser black-backed gull, the migration-free breeding season has been used rather than the 			<p>Noted regarding collisions apportioned to the Alde-Ore SPA during the autumn and spring migration seasons for East Anglia TWO.</p> <p>Noted regarding collisions apportioned to the Alde-Ore SPA during the winter season for East Anglia TWO.</p> <p>The assessment has been updated to ensure use of a common currency and in line with this advice.</p> <p>The assessment has been updated with the inclusion of consideration of impacts assigned using the full breeding season.</p> <p>The assessment has been updated to take account of the results of the more recent tracking studies by the RSPB.</p>

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	<p>standard breeding season, as it is assumed that there is a very low presence of breeding birds within the project area. The RSPB agrees with this approach. However, paragraph 244 (p.59) of the Habitats Regulations Assessment refers to the lesser black-backed gull migration-free breeding season (May-July) for Alde-Ore Estuary SPA. The RSPB requests clarity on the approach that will be adopted, reiterating that we support the approach set out in Chapter 12 using the full breeding season for lesser black-backed gull and not the approach set out in the HRA.</p> <ul style="list-style-type: none"> Alde-Ore SPA, LBBG: We note that a figure of around 6,700 individuals of all ages is used by the Applicant as the Alde-Ore SPA LBBG population. This is based on a figure of 2,000 pairs, which is then multiplied by 2 to get the number of adults. This is then divided by 0.58 (on the basis that adults comprise approximately 58% of the population, Furness 2015). We note that this calculation actually equals 6,897 (or approx. 6,900, rather than the around 6,700 used by the Applicant). NE note that 3.3% of collisions have been apportioned to the Alde-Ore SPA during the autumn and spring migration seasons for EA2. This appears to be based on calculating the proportion the total Alde-Ore all ages LBBG population calculated by the Applicant (approx. 6,700) accounts for of the total relevant BDMPS 			

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	<p>seasonal population of LBBGs of all ages in Furness (2015). We consider this to be a precautionary approach.</p> <ul style="list-style-type: none"> NE note that 10% of collisions have been apportioned to the Alde-Ore SPA during the winter season for EA2. We consider this to be an acceptable approach. NE note that the Alde-Ore LBBG colony figure in the tables of Appendix A in Furness (2015) is 640 pairs. However, this is acknowledged to probably relate to birds at Orfordness and has not included 1,747 pairs at Havergate Island in 2013 (which will have been included in the non-SPA colonies figures). So whilst the total seasonal BDMPS figures for the UK North Sea and Channel autumn, winter and spring are considered appropriate to use in the apportionment calculations, the Alde-Ore colony figure is not. Therefore, we agree with the Applicant's use of the figure of 2,000 pairs of LBBG for the Alde-Ore SPA colony. Our preferred approach to the apportionment would be to use the colony figure of 2,000 pairs (or 4,000 adults) and the use of 0.58 as used by the Applicant to get the all age colony figure, which we calculate to equal 6,897 – so if 4,000 of these are adults then the remaining 2,897 are immatures. We would then recommend using the information in the relevant tables in Appendix A of Furness (2015) on the proportions of adults and immatures from the Alde-Ore in 			

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	<p>each relevant seasonal BDMPS to get the total colony figures of adults or all ages to use in the apportionment.</p> <ul style="list-style-type: none"> NE also note that the Applicant's apportioning appears to be based on calculations of all ages. As the outputs of the existing PVAs tend to be on an adult currency, we would advise use of the proportion of ALL birds in the project area that are predicted to be ADULT birds from Alde-Ore SPA. As highlighted in our main comments, we also advise that calculations of baseline mortality used in the HRA are undertaken on an adult currency, therefore using the adult colony figure and the adult mortality rate rather than on all ages. As EA2 is located within the mean-maximum foraging range of LBBG from the Alde-Ore Estuary SPA, we consider that the full breeding season in Furness (2015) is the most appropriate for assigning monthly impacts to the breeding season, rather than the migration free breeding season as currently used by the Applicant. We also consider that the migration periods should then be adjusted accordingly to account for any overlapping of months in the definitions. FFC SPA, kittiwake: the Applicant discusses RSPB tracking data of kittiwakes from the FFC SPA colony conducted between 2010 and 2013. We note that more recent tracking has been undertaken with kittiwakes from Flamborough Head tracked between 2010-2015 and 2017, Filey 			

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	<p>Brigg in 2013-15 and 2017 and Speeton in 2017. The results of these do indicate that birds from the FFC SPA do forage within the East Anglia Zone. Therefore we advise that the Applicant requests this data/reports from the RSPB and considers it in the final submission documents.</p> <ul style="list-style-type: none"> Further tagging of kittiwakes from the FFC SPA colony has been undertaken in 2017 and the results of this does indicate that birds from the FFC SPA do forage within the East Anglia Zone. Therefore, we recommend that the Applicant requests this data/reports from the RSPB and considers this in the final submission documents. 			
	<p>HRA Offshore Ornithology Methodology</p> <ul style="list-style-type: none"> Section 4.7.2.4.2. Apportioning of impacts in the breeding season for LBBG at the Alde-Ore Estuary SPA - NE is currently uncertain regarding the evidence base for 25 % apportionment of impacts to LBBG during the breeding season used by the Applicant. This is due to a number of reasons/areas of uncertainty: <ul style="list-style-type: none"> The figure of 25 % used by the Applicant for the breeding season is based on simply summing the totals of counts from LBBG colonies within foraging range of EA2 (141km mean-maximum range in Thaxter et al. 2012). NE note that this approach does not take account of the 	RSPB; NE	27	<p>The estimated apportioning rate for lesser black-backed gull has been updated following additional reviews of evidence on gull populations in Norfolk and Suffolk including consideration of the advice provided by Natural England and the submissions for the Norfolk Vanguard project. See section 4.4.1.1 of the Information to Support Appropriate Assessment Report (Document Reference: 5.3).</p> <p>The lesser black-backed gull assessment has been updated taking into consideration the advice provided by Natural England and the submissions for the Norfolk Vanguard project. See section 4.4.1.1 of the Information to Support Appropriate Assessment Report (Document Reference: 5.3).</p>

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	<p>distance each colony is from EA2 or segregation, which apportioning approaches should do. If the Alde-Ore is the closest of all the colonies within foraging range, then the apportionment approach may lack precaution (as it may be that birds present are biased more towards the Alde-Ore), but if it is the colony located furthest away then the approach may be precautionary.</p> <ul style="list-style-type: none"> There may also be some colonies within foraging range that have not been included in the Applicant's summed figure, which should be considered. Given the potential for roof nesting urban colonies to be controlled, NE are uncertain about the Applicant's approach to doubling the summed urban colonies figure based on the age of data and the Applicant's consideration that these colonies would have significantly increased in the interim. NE would therefore suggest that the Applicant provides evidence to justify this decision. 4.7.2.4.3. NE advise the Applicant considers the advice provided during the Norfolk Vanguard examination, namely to consider our concerns and revisit its approach to apportioning of LBBG to the Alde-Ore Estuary SPA during the breeding season, including reviewing the merits of previous approaches undertaken for apportionment to 			<p>The kittiwake assessment has been reviewed and updated taking into account the advice received and further reviews of the available evidence.</p> <p>The Information to Support Appropriate Assessment Report (Document Reference: 5.3) has been updated taking into account comments received where these are considered to be appropriate for inclusion and with additional evidence and justification for aspects where the existing assessment is considered robust.</p> <p>The Applicant welcomes the RSPB's comments on estimating the reference population for lesser black-backed gulls. Given that this draws on many similar data sources, not surprisingly this review reaches conclusions which are similar to those in the updated assessment (e.g. that Alde Ore Estuary comprises approximately 25% of the regional population). However, the Applicant disagrees with the RSPB's suggestion that urban gulls should be completely disregarded, as the evidence for distinctions in preferred foraging locations for urban and rural gull colonies indicates that both are equally likely to forage at terrestrial and marine locations, and does not support the clear distinction in habits proposed by the RSPB. Therefore, the assessment as presented is considered robust, is agreed with NE, and the interpretation presented by the RSPB provides additional support.</p>

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	<p>account for the contribution of SPA colonies to the numbers of birds seen at marine renewable development sites during the breeding season, including:</p> <ul style="list-style-type: none"> ○ That undertaken by NE during the Galloper offshore wind farm examination (NE2012); and, ○ SNH interim guidance on apportioning impacts from marine renewable developments to breeding seabird populations in SPAs, updated November 2018. <ul style="list-style-type: none"> • Section 4.7.2.4.4. Apportioning of impacts in the breeding season for kittiwake at the FFC SPA – the Applicant has apportioned 16.8 % of kittiwake collisions in the breeding season to the FFC SPA and this is considered by the Applicant to be a precautionary estimate. The tracking data for kittiwakes at the FFC SPA up until 2015 suggests low connectivity of the EA2 site with foraging birds from the colony. This together with the evidence presented by the Applicant for distributions of immature kittiwakes during the breeding season, and in the absence of specific data on the distributions of immatures who will later recruit into a breeding colony to quantify the proportion of pre-breeders present at a site suggests that the logic presented by the Applicant for arriving at this apportionment figure is reasonable. However, further tagging of kittiwakes from the FFC SPA colony has been undertaken in 2017 and the 			<p>The Applicant acknowledges the detailed review that the RSPB has provided of the points of concern raised in the HRA. While we are in agreement over some of these issues, areas of uncertainty remain about the potential for tag effects on tagged individuals and the risk of bias due to unavoidable logistical aspects (e.g. catchability of birds within precipitous colonies). The Applicant also acknowledges that the RSPB has gone to considerable efforts to minimise such effects, however (as the RSPB note) the risk of bias and tag effects remains and it is considered appropriate that studies which discuss these are presented alongside the results from the RSPB studies.</p> <p>Where PVA results are available counterfactuals have been presented in the assessment, however not all PVA reports include these metrics. In such cases consideration of other metrics has been provided, along with other relevant aspects, such as changes in the population size (e.g. gannet) since the modelling was conducted which also inform the assessment.</p> <p>References to PBR in the assessment have been removed.</p> <p>The Applicant has provided assessment using the NE advised displacement and mortality rates and also those derived from reviews of evidence conducted for other windfarm assessments.</p>

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	<p>results of this does indicate that birds from the FFC SPA do forage within the former East Anglia Zone. Therefore, NE recommend that the Applicant requests this data/reports from the RSPB and considers this in the final submission documents.</p> <ul style="list-style-type: none"> Habitats Regulation Assessment (HRA). Due to the methodological issues highlighted, the RSPB considers the HRA conclusions are not based on appropriate assumptions. Conclusions are not based on the worst-case scenario and seek to base assumptions on lower mortality figures than can be justified. HRA: apportioning lesser black-backed gulls Paragraph 240 (p.98) refer to the calculation of a reference population using Norfolk Vanguard (2018), which seeks to apportion lesser black-backed gull collisions to specific colonies (see also Paragraph 231 and Paragraph 237 (p.57) of the EA2 HRA). We disagreed with the calculation of the non-SPA element of this and the subsequent apportioning of 25% of breeding birds at the Norfolk Vanguard windfarm site to the Alde-Ore Estuary SPA for a number of reasons (note also that EA1N and EA2 are significantly closer to the AOE SPA than Vanguard). The RSPB considers that the apportioning of 25% of collision risk to the Alde-Ore Estuary SPA is not sufficiently supported by evidence in two key areas: the estimation of the non-SPA lesser black- 			<p>The red-throated diver assessment has been reviewed and updated in line with advice received and further reviews of available evidence. The assessment concludes that no adverse effect on the integrity of the SPA as a result of the project-alone or in-combination effects is predicted. See section 4.2.1.6 of the Information to Support Appropriate Assessment Report (Document Reference: 5.3).</p> <p>The assessment has been updated in line with advice received and additional reviews of evidence.</p> <p>This aspect of the assessment has been updated following discussions with NE and advice received.</p> <p>Noted agreed approach undertaken to apportion collisions to the Greater Wash SPA little gull population.</p> <p>Noted regarding predicted gannet collisions.</p> <p>The assessment of nonbreeding apportioning to the SPA population has been updated in line with the percentages advised by NE.</p> <p>The assessment has been updated to ensure consistent use of a common currency for impacts.</p>

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	<p>backed gull population and its likely growth rate, and the assumption that urban and inland gulls are likely to forage at sea to the same level as rural coastal birds.</p> <ul style="list-style-type: none"> Whilst we acknowledge the difficulties arising from the lack of recent census data for urban gull colonies, the approach taken by the Applicant to estimate the urban gull population in Norfolk and Suffolk is speculative and lacking in precaution. A key source of information, the Seabird 2000 census, is missing from the cited colony counts and no evidence is provided for the rate chosen to account for colony growth since the last counts. The Seabird 2000 census carried out in 1999 – 2002 (Mitchell et al., 2004) recorded 1149 apparently occupied nests (AON) in Suffolk roof-nesting colonies, 1605 AON in Norfolk coastal colonies, and 1456 in Suffolk Coastal colonies (excluding the SPA colony at Orfordness). This gives a total of 4210 AON outside the SPA, or 8420 adult birds. We acknowledge that these data do not include roof-nesting birds in Norfolk, and that the counts of roof-nesting birds are thought to be underestimated. More recent work by Coulson and Coulson (2015) suggests that results from the vantage point surveys of roof-nesting birds carried out for Seabird 2000 should be multiplied by 1.33 to correct for under-detection of nests. This would raise the number of adult birds in Norfolk and Suffolk to 9178 when the roof- 			

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	<p>nesting numbers for Suffolk are corrected in this way. Given that Norfolk is likely to be similar to Suffolk in terms of urban habitats available, it may be appropriate to double the numbers of urban birds in Suffolk to account for the missing Norfolk data. This would give a total non-SPA population of 12,234 adult birds, or 21,093 birds of all ages (assuming adults comprise 58% of the population, Furness, 2015), of which 10,539 are from urban colonies in Norfolk and Suffolk.</p> <ul style="list-style-type: none"> JNCC (2018) discuss the growth rate of lesser black-backed gull colonies since the Seabird 2000 census, and conclude that there is insufficient evidence to allow a trend to be identified. Colonies display differing trends, due to differences in factors affecting their growth rate. Many large coastal colonies have undergone significant declines, including that of the Alde-Ore Estuary SPA at Orfordness, whilst some urban colonies, particularly in the south-east and north-west are known to have increased significantly. Given that JNCC (2018) cannot specify trend figures, and that the non-SPA population for Norfolk and Suffolk includes both urban colonies (likely to have increased) and rural coastal colonies (may have decreased), we therefore do not consider it safe to propose an overall level of population change for the non-SPA population since the Seabird 2000 census. There is also no discussion of the differences in foraging behaviour between urban and inland 			

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	<p>colonies and rural, coastal colonies. Whilst the evidence available is limited, some studies of lesser black-backed gull diet are available. Coulson and Coulson (2008) found no offshore marine component (i.e. fish or fish offal) in the diet of the lesser black-backed gull colony in Dumfries, in an analysis of regurgitated pellets. Food sources were predominantly agricultural (55% of pellets), from landfill sites (23%) or intertidal habitats (12%). Similarly, at an inland colony in the Netherlands (c.30km from the North Sea), Gyimesi et al. (2016) found no marine remains in an analysis of pellets and boluses, and found only 2 of 710 trips recorded by GPS tags visited the North Sea. Conversely, at two rural island colonies in the south-eastern North Sea, Kubetzki and Garthe (2003) found that 80% of lesser black-backed gull pellets contained prey from coastal waters. Given this difference, we do not consider it safe to assume that birds from urban colonies will forage at sea to the same extent as those birds from rural coastal colonies, including the Alde-Ore Estuary SPA. There is an argument therefore, to exclude urban populations when considering apportioning to the SPA.</p> <ul style="list-style-type: none"> Using the Applicant's calculation of 6,700 birds of all ages associated with the SPA, the apportioning to the Alde-Ore SPA would therefore be between 24.1% if urban birds are included ($6700/21093 + 6700$) and 38.8% when urban birds are excluded ($6700/10555 + 6700$). Given the discussion 			

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	<p>above, the lower figure (which is close to the Applicant's proposed 25%) is clearly unrealistic, and a figure likely to be at least 35% would be more appropriate.</p> <ul style="list-style-type: none"> • However, the RSPB further advocate the use of the theoretical approach as laid out in SNH guidance (SNH 2018). This theoretical approach is based on foraging range and three colony-specific weighting factors: colony size, distance of colony from site and the areal extent of the open sea within the foraging range of the relevant species. • Paragraphs 289 to 302 (pp.75-78) of the HRA raise a number of issues with regard to the suitability of tracking data obtained as part of the FAME and STAR projects for use in the assessment. However, the Applicant's Information for the Habitats Regulations Assessment contains a number of misinterpretations and erroneous assertions. • The RSPB does not consider that the Applicant has presented information which justifies the exclusion of the FAME/STAR (or subsequent) tracking data from that used to inform consideration of kittiwake foraging range and connectivity with the East Anglia zone sites. Therefore, our recommendation that apportioning is revisited using these data still applies. • Paragraph 313 of the EA2 HRA (p.82) gives a summary of the PVA outputs only. The RSPB recommends that these outputs be presented in 			

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	<p>the form of counterfactuals of population size. These are a robust and informative metric which indicate the percentage difference between the population with or without additional mortality at the end of the lifetime of the wind farm.</p> <ul style="list-style-type: none"> Paragraph 314 (p.83) states that “Although NE no longer advocate the use of PBR for windfarm assessments, the results remain informative in terms of the relative predicted effects.” In light of the publication of the RSPB Practitioner’s Perspective (Green et al., 2016) and the reviews by Cook and Robinson (2015) and O’Brien et al. (2017) as well as NE’s position and advice, PBR outcomes should not be included when considering potential impacts and whether it is possible ascertain that there will not be adverse effects on the integrity of SPAs designated to protect rare, threatened and regulatory migratory species in order to maintain or where necessary restore, these populations of conservation importance. Especially since determinations on levels of acceptable mortality derived from PBR will be higher than those acceptable for a population to continue to meet the conservation objectives of a SPA. RTD mortality/displacement levels (EIA & HRA) - NE does not consider the 60-80% displacement and 1-5% mortality rate used by the Applicant to be appropriate for assessing disturbance and displacement impacts to RTD from offshore wind farms. We note that this does not follow SNCB 			

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	<p>guidance (SNCBs 2017). NE notes the evidence presented by the Applicant on RTD displacement distances and displacement rates in the PEIR Chapter. However, we note that there are other studies that have been undertaken that have not been considered by the Applicant.</p> <ul style="list-style-type: none"> NE continue to advise that assessments of operational disturbance and displacement for RTD for offshore wind farm assessments are based on a constant displacement rate across the offshore wind farm site and a 4km buffer and suggest that a range of displacement rates up to 100 % and a mortality rate of up to 10 % are considered. However, NE note that the matrix tables presented by the Applicant in the PEIR chapter cover the full ranges of up to 100 % displacement and 100 % mortality, so the figures for the NE preferred worst case scenario of 100 % displacement and 10 % mortality can be assessed. NE also consider that the NE worst case scenario of 100 % displacement and 10 % mortality should be used in the assessment of construction disturbance and displacement for RTD for both EIA and for the HRA assessment for RTD at the Outer Thames Estuary SPA. However, we note that consideration of this would not alter the conclusions made by the Applicant in Section 12.6.1.1.1 of the EA2 PEIR Chapter on assessment of offshore cable laying. 			

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	<ul style="list-style-type: none"> Outer Thames Estuary SPA, RTD: the Applicant has used the RTD densities calculated from East Anglia 3 for their offshore cable route through the SPA, which calculated densities using the JNCC data set used in the designation of the original Outer Thames Estuary SPA classification and from 2013 surveys of the SPA undertaken by APEM. Although we note that the EA3 cable route passes a few kilometres south of the EA2 cable route, evidence needs to be presented to justify this approach rather than calculating the RTD densities from this data for the actual EA2 cable route. As noted above the assessment should not be restricted to the cable route only. Outer Thames Estuary SPA, RTD: The assessment of offshore cable laying disturbance/displacement for EA2 alone on RTD within the Outer Thames Estuary SPA have assumed that 5% of displaced RTD could die as a result of displacement by construction vessels. As noted for the EIA assessment of offshore cable laying, we advise consideration of a range of mortality rates of 1-10% are used for RTD assessments. As noted above the assessment should not be restricted to the cable route only. Greater Wash SPA, little gull CRM: We agree with the approach undertaken to apportion collisions to the Greater Wash SPA little gull population. 			

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	<ul style="list-style-type: none"> Greater Wash SPA, little gull CRM: We note the methodological issues/uncertainties raised regarding the CRM undertaken, that there will be changes to the number of turbines at EA2 in the final submission and that additional data will also be included in the final submission. Therefore we currently cannot agree to these figures and hence reach any conclusions regarding the impact of collision risk from EA2 alone. NE agree with the approach used to apportion 100% of predicted gannet collisions in the breeding season to birds from the FFC SPA, as this can be considered precautionary. For the apportionment of impacts of species to relevant SPA colonies during the non-breeding seasons, NE recommend that the data presented in the tables in Appendix A of Furness (2015) for the relevant species Biologically Defined Minimum Population Scales (BDMPSs) for each season (e.g. migration, winter etc.) are used. We would advise that the proportion the relevant colony figure represents of the total number of birds of all ages in the relevant BDMPS in the season in question is used as the apportionment figure. We do not recommend that the colony figures presented in the tables in Appendix A for the SPA colony in question are updated with more recent figures, unless there is evidence to suggest that the colony in question has increased or decreased relative to other colonies. Whether 			

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	<p>the colony figure in the BDMPS tables used is the adult figure or that for all ages depends on any Population Viability Analysis (PVA) model and outputs to be used. Given that the outputs of the existing PVAs tend to be on an adult currency, NE advises that calculations of baseline mortality used in the HRA are undertaken on an adult currency, therefore using the adult colony figure and the adult mortality rate rather than on all ages. Following this recommended approach, we have calculated apportionment rates of 4.8% for autumn and 6.5% for spring for gannet from the FFC SPA.</p> <ul style="list-style-type: none"> FFC SPA, kittiwake: the Applicant has apportioned 5.4% of collisions to the FFC SPA in autumn and 7.2% in spring using the approach undertaken at EA3. The approach calculates the proportion of birds in the project area that are predicted to be adult birds from FFC SPA in the autumn or spring North Sea BDMPS based on Furness (2015). We do not disagree with this approach, but note that this has considered the proportion of adult birds only, which is different to the approach taken for LBBG at the Alde-Ore. However, for kittiwake the Applicant has then assessed the impact of the predicted collision figures against baseline mortality calculated using an all age colony figure and an all age survival rate. We do not consider this to be appropriate as if the proportion of birds in the 			

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	project area that are FFC SPA adults has been calculated then the Applicant should assess the significance of this by calculating what percentage of baseline mortality this represents for the adult component of the FFC SPA population.			
	<p>HRA Offshore Ornithology Impact</p> <ul style="list-style-type: none"> Paragraph 244 (p.59) (paragraph 243 EA1N) refers to the lesser black-backed gull migration-free breeding season (May-July) for the Alde-Ore Estuary SPA. In Chapter 12, paragraph 65 (p.) there is a commitment to use the full breeding season (which includes the overlap months) to estimate collision risk. The RSPB requests clarity on this inconsistency and assurance that the migration-free breeding season will be used to predict mortality for lesser black-backed gulls. The mean max foraging range is 141km for lesser black-backed gulls. The HRA (paragraph 247, p.60) sets out a reduced foraging range of 72km for considering in-combination impacts of wind farms that could be increasing mortality for this species. This results in the potential mortality reducing from 84 to 44.1 birds. No detailed information is provided to justify the reduction other than "...given the evidence from tracking studies (Thaxter et al. 2012b, 2015), it is questionable how realistic it is to include all of the windfarms within 141km." The RSPB disagrees with this approach and considers it to 	RSPB; NE	8	<p>The lesser black-backed gull assessment has been updated with the addition of consideration of impacts assessed using the full breeding season.</p> <p>Further consideration of foraging ranges and how these relate to potential impacts has been included in the assessment. See section 4.4.1.2 of the Information to Support Appropriate Assessment Report (Document Reference: 5.3).</p> <p>Additional consideration of the age distribution of birds present in the southern North Sea in the summer has been provided in the assessment.</p> <p>The boundary of East Anglia TWO has been reduced and is no longer adjacent to the Outer Thames Estuary SPA (now 8.3km away). The assessment has been updated to take into account both the comments received and the updated site layout in that no assessment has been carried out given that there is very little potential for construction and operational displacement as was discussed and agreed with NE at Expert Topic Group 4 on 20 June 2019.</p>

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	<p>considerably underestimate the potential impact from the project. This is not standard practice and the text and calculations should be revised.</p> <ul style="list-style-type: none"> For collision risk modelling of breeding season kittiwake, a biologically defined minimum population size (BDMPS) for 'breeding season populations of nonbreeding individuals' is calculated based on the percentage of the spring BDMPS which are subadults. This equates to 47.3% of the spring BDMPS for kittiwake. We do not agree, as stated above, that there is sufficient evidence that all birds present in the breeding season are likely to be non-breeders. We also would not agree that these assumptions could be used to avoid apportioning any impacts to the SPAs in the HRA. NE note that the EA2 array boundary is immediately adjacent to Outer Thames Estuary SPA and there is potential that displacement effects could occur several kilometres into the SPA from both construction and operational phases, in addition to displacement and disturbance effects from cable laying. We advise that the Applicant consider revising their array boundary in order to avoid displacement effects on the SPA. NE has already advised in the context of several other Habitats Regulations Assessments that it is not possible to rule out an adverse effect on integrity in combination with other plans and projects for Outer Thames Estuary SPA. For example, advice to DECC 			<p>The East Anglia TWO boundary has been revised and this is reflected in the updated assessment.</p> <p>Impacts have been assessed for which there is a justifiable evidence. In the case of construction of the East Anglia wind farm array, the distance between the wind farm and the SPA boundary means that this impact is not considered to be of concern.</p> <p>The assessment has been updated, as indicated in the responses to the detailed comments and the Applicant considers that the assessment presented will now enable NE to reach a conclusion on the potential for the project to have an impact on the population.</p> <p>The assessment has been updated, taking into account advice from NE and the methods presented by other recent projects and is now considered to be complete.</p>

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	<p>regarding review of consent of London Array phase 1 (May 2013) ii) advice to MMO regarding marine aggregates licensing (February 2014), iii) advice to MMO regarding commercial fishing (July 2016).</p> <ul style="list-style-type: none"> NE note that only features and sources of effect suggested by the Applicant as requiring assessment in relation to offshore ornithology for Outer Thames Estuary SPA, red-throated diver are disturbance and displacement during cable laying. However, given the close proximity of EA2 to the Outer Thames Estuary SPA, displacement effects from the windfarm during construction and operation also need to be assessed. Outer Thames Estuary SPA, RTD: NE agrees with the Applicant's approach of estimating the magnitude of during construction disturbance (in relation to cable laying) to RTDs on a 'worst case' basis assuming that there would be 100% displacement of birds in a 2km buffer surrounding the cable laying vessels. However, there also needs to be an assessment of disturbance and displacement effects from the construction and operation of the array itself, not just the cable route. Given the issues/concerns we have regarding how the EA2 CRM has been undertaken (detailed in our main comments) and that further baseline data are still to be added and the CRM re-run to include this and the increase to turbine numbers, at present the information in the PEIR does not 			

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	<p>allow conclusions to be reached regarding the significance of the impact of collision risk to LBBG from the Alde-Ore Estuary SPA or to gannet from the FFC SPA from EA2 alone.</p> <ul style="list-style-type: none"> FFC SPA, kittiwake: Given the issues/concerns we have regarding how the EA2 CRM has been undertaken (detailed in our main comments) and that further baseline data are still to be added and the CRM re-run to include this and the increase to turbine numbers, at present the information in the PEIR does not currently allow conclusions to be made regarding the level of impact. 			
	<p>HRA Offshore Ornithology In-Combination Impacts</p> <ul style="list-style-type: none"> The Applicant notes that the Outer Thames Estuary SPA contains several constructed or consented offshore wind farms. Consideration should be given to the in-combination disturbance/ displacement effect on RTD of cable laying with the currently constructed or consented wind farms within the Outer Thames Estuary SPA. In addition to effects from cable laying, the potential impacts from the construction and operation of the EA2 and EA1N arrays need to be considered. NE advises that it is already is not possible to rule out an adverse effect on integrity on red throated diver from Outer Thames Estuary SPA in- combination with consented and operational OWF projects. 	NE	23	<p>The assessment has been updated to reflect advice received and reviews of available evidence. The assessment concludes that no adverse effect on the integrity of the SPA as a result of in-combination effects is predicted. See section 4.2.1.6 of the Information to Support Appropriate Assessment Report (Document Reference: 5.3).</p> <p>The assessment has been updated to reflect advice received and reviews of available evidence.</p> <p>The full breeding season has been included in the assessment.</p> <p>The assessment has given further consideration to the range over which individuals from this population may</p>

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	<ul style="list-style-type: none"> Greater Wash SPA, little gull in-combination CRM: The Applicant considers that given the extremely small potential impact on little gull due to collisions at EA2 alone that their assessment predicts, it is apparent that the project will not contribute to an in-combination impact. We note the methodological issues/uncertainties raised regarding the CRM undertaken for EA2 alone and that there may be changes in the predicted numbers in the final submission due to changes to the turbine numbers and addition of data. Therefore we recommend that the in-combination collision risk to little gulls from the Greater Wash SPA is revisited once these issues/uncertainties are resolved. NE also advise that whilst the predicted EA2 CRM impact to little gulls from the Greater Wash SPA is likely to equate to less than 1% baseline mortality and could be considered non-significant and therefore would not be an AEOL. However, while 1% baseline mortality can be considered to be insignificant in the context of the population, this does not mean that this level of additional mortality should not be added to an assessment of in-combination impacts. Therefore, we advise that the in-combination CRM figures for other relevant North Sea offshore wind farms (OWFs) for little gull from the Greater Wash SPA are presented (where figures are available) and that the overall in-combination CRM figure is presented. 			<p>forage and the assessment has been updated accordingly.</p> <p>The in-combination assessment has been updated and reference has been made to the recent population modelling for this population conducted for the Norfolk Vanguard assessment. The updated assessment has confirmed the conclusion of the preliminary HRA and reaches a conclusion of no Adverse Effect on Integrity.</p> <p>The updated assessment now makes reference to the recent population modelling presented for the Norfolk Vanguard project.</p> <p>The assessment has been updated, taking into account advice from NE and the methods presented by other recent projects. This includes consideration for combined displacement and collision effects.</p> <p>The assessment has been updated and the adjustment of collisions at other projects no longer applies the evidence-based revision as used in the draft HRA but instead reverts to the previous estimates for those projects calculated using the generic and precautionary rate of 25%.</p> <p>The assessment has been updated and the adjustment of collisions at other projects for lower nocturnal activity levels has been removed.</p>

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	<ul style="list-style-type: none"> Alde Ore SPA, LBBG in-combination: NE again note that the figure included for EA2 are those using the migration free breeding season. We again recommend that the extended (full) breeding season with the migration seasons adjusted accordingly is used for LBBG from the Alde-Ore Estuary SPA. The total in-combination breeding season LBBG CRM is stated in paragraph 249 of the EA2 HRA report as 44.1 collisions. We note that this figure is based on only including CRM figures for wind farms located within the mean foraging range of 72km (i.e. the mean LBBG foraging range). We would recommend that the CRM figures for the breeding season for all windfarms within 141km from the Alde-Ore are also considered in the in-combination total. The in-combination mortality figures currently presented by the Applicant of up to 56 LBBGs attributable to the Alde-Ore Estuary SPA equates to 6.4% of baseline mortality, which is not insignificant and would require further assessment through population modelling. However, we note the methodological concerns highlighted regarding the EA2 alone CRM and that the EA2 alone figures are likely to change following inclusion of the remaining 3 months of data and the increase to the turbine numbers. Additionally the figures for some other the other projects included in the cumulative assessment may change come the final submission and that there 			<p>The assessment has been updated to ensure a common currency (adults) is used throughout.</p> <p>The assessment has been updated to include consideration of the consequence of the predicted impacts using the most recent population models available for this population. While the in-combination impact still exceeds 1% of baseline mortality the updated assessment concludes that there will be no adverse effect on the integrity of the FFC SPA. See section 4.5.1.6 of the Information to Support Appropriate Assessment Report (Document Reference: 5.3).</p> <p>The assessment now makes reference to the population models presented for Hornsea Project Three, as advised by NE.</p> <p>The assessment has been revised and references to PBR have been removed.</p> <p>The assessment has been updated to include the full 24 months of survey data for East Anglia TWO and the most up to date estimates for other windfarms included in the in-combination assessment.</p> <p>Further assessment has been conducted including reference to the outputs from the Hornsea Project Three population modelling.</p>

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	<p>are currently relevant OWFs that have not been included. Therefore, the information in the PEIR does not currently allow conclusions to be made by NE regarding the level of in-combination impact.</p> <ul style="list-style-type: none"> NE note that the Applicant has made reference to the outputs of the PVA undertaken at Galloper offshore wind farm for lesser black-backed gulls. The Applicant has referred to the reduction in population growth rate predicted from the PVA. NE considers that assessments should focus on the counterfactual of growth rate and the counterfactual of final population size, as these are the two metrics that are, in NE's opinion, least sensitive to mis-specification of the population trend and demographic rates used in the PVA model. These metrics should be calculated at the end of the impact period. Therefore, we note the issues around existing PVAs detailed in our main comments and therefore suggest that these are considered by the Applicant before any conclusions can be made regarding the significance of in-combination collision impacts on LBBG. FFC SPA, gannet: Given the issues/concerns we have regarding how the EA2 CRM has been undertaken (detailed in our main comments) and that further baseline data are still to be added and the CRM re-run to include this and the increase to turbine numbers, at present the information within the PEIR does not allow conclusions to be 			<p>The assessment has been updated in line with advice received and taking account of other wind farm assessments. The Applicant acknowledges NE's suggestion with regards to the likelihood of an in-combination impact, but considers that this is a reflection of several independent sources of precaution in the assessment and that both for the project alone and in-combination there will not be an Adverse Effect on the Integrity of this population.</p>

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	<p>reached regarding the significance of the impact of collision risk to gannet from the FFC SPA from EA2 alone.</p> <ul style="list-style-type: none"> • Additionally, displacement predictions for gannet at FFC SPA should be added to collision predictions for gannet at FFC SPA, and the combined impacts considered for EA2 alone and in-combination with other relevant offshore wind farms. This should be considered in the final submission documents. • FFC SPA, gannet in-combination: As noted in our main comments, we do not consider it appropriate to adjust the CRM figures for the other OWFs included in the in-combination assessment to account for use of the 'empirically derived' nocturnal activity rates for gannet from tracking studies. • FFC SPA, kittiwake in-combination: As noted in our main comments, we do not consider it appropriate to adjust the CRM figures for the other OWFs included in the in-combination assessment to account for use of the 'empirically derived' nocturnal activity rates for gannet from tracking studies. • NE are uncertain of whether the apportioned figures to the FFC SPA for each offshore wind farm included in the in-combination assessment are for adults only or for birds of all ages. Where possible these figures should be based on common currency. 			

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	<ul style="list-style-type: none"> The predicted level of in-combination impact based on the Applicant's current figures equates to more than 1% of baseline mortality for the FFC SPA gannet colony population (based on an all age colony population size from the 2017 count and an all age mortality rate of 19.1%). This is not insignificant and would require further assessment through population modelling. NE note that the Applicant has made reference to the outputs of the PVA undertaken at Hornsea 2 offshore wind farm for gannets and kittiwakes at FFC SPA. As noted in our main comments, NE recommends using the counterfactual of population growth rate and the counterfactual of population size to quantify the relative changes in a population in response to anthropogenic impacts. Therefore, we note the issues around existing PVAs detailed in our main comments and therefore suggest that these are considered by the Applicant before any conclusions can be made regarding the significance of in-combination collision impacts on gannets from the FFC SPA. We also note that new PVAs have been undertaken for gannet, kittiwake and auks at FFC SPA as part of the Hornsea Project 3 examination. These are currently under discussion during the examination, so we advise the Applicant keeps a watch on the decisions made regarding suitability of these. NE also note that the mortality currency of the PVA undertaken at Hornsea 2 (and the new PVAs 			

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	<p>for Hornsea 3) is adults. We assume that the EA2 alone figure and the in-combination total mortality figure calculated is for an all age mortality currency. If this is the case, then this needs to be considered by the Applicant.</p> <ul style="list-style-type: none"> The Applicant also makes reference to the outputs of PBR, which was undertaken for the Rampion assessment and used at East Anglia 1. As the Applicant notes, NE no longer recommends the use of PBR and advises that assessments focus on stochastic PVA models. Therefore, as has been advised at EA3 and Norfolk Vanguard, we do not advise updating this PBR figure or that the PBR figures are used in coming to conclusions on appropriate assessment and advise that this is focused on the outputs of PVA models. However, we do note the increase in the colony gannet population noted by the Applicant. In addition to the above regarding population modelling, we note the methodological concerns highlighted regarding the EA2 alone CRM and that the EA2 alone figures are likely to change following inclusion of the remaining 3 months of data and the increase to the turbine numbers. Additionally the figures for some other the other projects included in the cumulative assessment may change come the final submission and that there are currently relevant OWFs that have not been included. Therefore, the information in the PEIR does not currently allow conclusions to be 			

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	<p>made by NE regarding the level of in—combination impact.</p> <ul style="list-style-type: none"> The in-combination mortality figures currently presented by the Applicant of up to 332 kittiwakes attributable to the FFC SPA equates to 1.5% of baseline mortality, which is not insignificant and would require further assessment through population modelling. The Applicant also makes reference to the outputs of PBR, which was undertaken for the Hornsea 1 assessment. As the Applicant notes, NE no longer recommends the use of PBR and advises that assessments focus on stochastic PVA models. Therefore, we do not advise that the PBR figure is used in coming to conclusions on appropriate assessment and advise that this is focused on the outputs of PVA models. We note that at East Anglia 3 NE concluded that we could not rule out beyond significant doubt an adverse effect on integrity for kittiwake from the FFC SPA due to in-combination collision mortality. As there have been no changes in CRM methodology since East Anglia 3 in terms of avoidance rates etc., and that more collisions are being added to these totals from the additional projects currently under examination (Hornsea 3, Norfolk Vanguard and Thanet Extension) and those currently at PEIR stage (Norfolk Boreas, EA2, EA1N) it is considered unlikely this position will change. Therefore, we would advise that the Applicant gives consideration to mitigation 			

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	measures which seek to reduce their project's contribution to cumulative/in-combination total impacts.			
	<p>HRA Offshore Ornithology Cumulative Assessment</p> <ul style="list-style-type: none"> As has been raised during the Norfolk Vanguard and Hornsea 3 examinations, NE does not consider that the PVA models produced for East Anglia 3, Hornsea 2 and Galloper are adequate to inform the assessments for these projects and the same will apply for EA2. This is due to the following reasons: <ul style="list-style-type: none"> The stochastic simulations for the East Anglia 3, Hornsea 2, Galloper models and the SOSS gannet model were not run as matched pairs. Where stochastic PVA models are used, it is important to use a 'matched-runs' approach where a metric is derived for each matched pair of baseline and impacted simulations. Stochasticity is included in the population models, but the survival and productivity rates used for a 'pair' of impacted and un-impacted populations at each time step are the same. This means that the effect that is measured with the metric can be more clearly attributed to the impact, than to model uncertainties such as the variability in the demographic parameters that have been sampled or to observation 	NE; Eastern IFCA	3	<p>The most up to date and appropriate PVA have been used to inform the assessment. While some of these were produced in line with the statutory guidance available at the time of production (which has been updated since), the results are considered to remain relevant. Furthermore, additional context with respect to the magnitude of predicted impacts from East Anglia TWO (which are typically very small) is relevant and consideration of these aspects has been included in the assessment as appropriate.</p> <p>References to Potential Biological Removal (PBR) have been removed from the assessment.</p> <p>Noted.</p> <p>Noted. Advice has been sought from NE on the approach to the assessment of impact on the Outer Thames Estuary SPA.</p>

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	<p>errors. Cook & Robinson (2017) tested the effect of using unmatched compared to matched runs in PVA models and demonstrated that the median values of several evaluation metrics (e.g. counterfactual of population size) were greater when a matched runs approach was used compared to when the simulations were unmatched and the uncertainty around the metrics was much greater in the unmatched scenario. Models were run with 1,000 iterations. It may be the case that the median values of the matched versus unmatched runs approach will converge if a larger number of simulations (e.g. 5,000) are used, however the confidence limits are still expected to vary between the two approaches. NE therefore advises that one amendment required to the existing PVA models used by the Applicant is to run the simulations using matched-pairs.</p> <p>b. NE recommends using the counterfactual of population growth rate and the counterfactual of population size to quantify the relative changes in a population in response to anthropogenic impacts. Whilst the EIA models for kittiwake and GBBG present the counterfactual of population size they do not present the output for counterfactual</p>			

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	<p>of growth rate. The other models utilised do not present outputs for the required metrics. The change in median growth rate metric that the Applicant has used in the kittiwake and gannet FFC SPA in-combination CRM assessments are not the same as the counterfactual of growth rate that NE advises, as it has not been calculated as the growth rate at the end of the duration of the projection and the Applicant has calculated the median growth rate across all years simulated in the model. Clarification is required from the Applicant regarding the lifespan of the EA2 project, as the existing PVAs utilised by the Applicant have been run over 25 years. NE note that more recent projects (e.g. Hornsea Project 3, Norfolk Vanguard and Norfolk Boreas) have lifespans of greater than this (35 years for Hornsea 3 and 30 years for Norfolk Vanguard and Boreas). If the EA2 project is to have a lifespan of greater than 25 years then the counterfactuals of population size and growth rate should be calculated at the end of the impact period (i.e. the lifespan of the EA2 project). If the lifespan of EA2 is to be greater than 25 years then the Applicant's approach whereby PVA models are run over 25 years would lead to an underestimate of impact, as</p>			

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	<p>potential impacts occurring in the last years of operation not covered by 25 years will not be accounted for in the models.</p> <p>c. A further issue with deriving the metrics from the existing PVAs is that the Applicant has had to select impact levels from those published for Hornsea 2, Galloper etc., which means that the Applicant can only derive metric values from a pre-populated set of impact levels and cannot calculate a metric that is specific to the impact level that they have calculated for EA2.</p> <ul style="list-style-type: none"> NE also note that that further PVA models have been run for gannet, kittiwake and guillemot at the FFC SPA as part of the Hornsea 3 Examination. These models have attempted to address the concerns raised by NE regarding the previous FFC SPA PVA models used by both the Hornsea 3 and Norfolk Vanguard Applicants, as they have been run using a matched pairs approach, have been run over 35 years and present outputs for the NE recommended counterfactuals of population growth rate and population size. However, NE has outstanding concerns and clarification requests related to these updated PVAs and their outputs that have been raised during the Hornsea 3 Examination process in our Written Submission for Deadline 3 and in Appendix 2 of this document. These are currently 			

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	<p>under discussion during the Hornsea Project 3 examination, so NE advise the Applicant keeps a watch on the decisions made regarding suitability of these.</p> <ul style="list-style-type: none"> The Applicant has made reference to PBR outputs for the in-combination assessment for gannets and kittiwake from the FFC SPA. As noted at East Anglia 3 and at Norfolk Vanguard, NE does not advocate the use of PBR modelling when PVA modelling is available. Our advice to regulators is that no weight should be placed on PBR outputs when making decisions. Therefore, our consideration will focus only on the PVA outputs. Although NE has previously considered PBR outputs for assessing population impacts in cases where up to date PVA models have not been available at an appropriate population scale. However, the use of PBR on its own, as the means of assessing population impacts on seabird populations presents a number of issues. Therefore, NE advises that wherever possible the population level impacts of predicted mortality from developments should be assessed using PVA models as these allow the effects of factors such as density dependence, population trends and varying demographic parameters to be explicitly investigated in terms of their effect on the population trajectory. PVA models also allow relative comparisons of population level effects with and without the additional mortality to be considered in a way that is not possible with PBR. 			

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	<ul style="list-style-type: none"> The Applicant has also considered the significance of the predicted cumulative and in-combination collision impacts by reference to a various PVA models that are currently in existence: <ul style="list-style-type: none"> For EIA in the Environmental Statement Chapter: the national gannet PVA undertaken by the SOSS-04 work (WWT 2012); kittiwake and great black-backed gull the EIA PVAs undertaken for the East Anglia 3 assessment (EATL 2015 & 2016). For HRA: the PVA undertaken for Galloper offshore wind farm for LBBG at the Alde-Ore Estuary SPA (GWFL 2012); the PVAs undertaken at Hornsea 2 for kittiwake and gannet at the FFC SPA (MacArthur Green 2015b). Eastern IFCA defer to NE and the JNCC for detailed conservation advice including any need to consider other activities that could cause cumulative impacts to sensitive species or habitats (Outer Thames Estuary Special Protection Area). 			
	<p>HRA Offshore Ornithology Mitigation</p> <ul style="list-style-type: none"> It was clarified in 2018 that with respect to HRAs, mitigation measures could not be used to screen impacts out at the “screening” stage (people Over 	RSPB	1	Noted regarding embedded mitigation.

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	Wind and Sweetman v Coillte Teoranta (C-323/17)). It is helpful to note that the HRA Appendix 1 (paragraph 33, p.14) states that "Mitigation, including embedded mitigation, has not been taken into account at Stage 1 HRA Screening, but will be included during the Stage 2 assessment." It is acknowledged that there are a range of measures that can be applied to the project to avoid adverse impacts on site integrity, but these must be considered appropriately. We suggest the section on embedded mitigation in chapter 12 (section 12.3.3, p.13) be removed for clarity and to avoid uncertainty about how such measures are being applied to the project.			
	HRA Marine Mammals Project Design <ul style="list-style-type: none"> Does the 'area of the offshore windfarm sites' used in this assessment include everything within the red line boundary, including the cable routes or is it limited to the area of the array? Clarification should be provided. 	NE	2	Within section 5.2.5.5.2.3 in Chapter 5 Environmental Impact Assessment Methodology of the ES, the assessment of potential temporary disturbance activities during offshore wind farm construction (other than piling) has been based on the area of the offshore wind farm array only.
	HRA Marine Mammals Policy <ul style="list-style-type: none"> TWT would like to highlight that a range of guidance is out of date as it was not developed with the scale of round 3 offshore wind farms in mind. This includes guidance for both piling and UXO activities. We believe JNCC were considering updating their advice in these areas. 	The Wildlife Trusts / Suffolk Wildlife Trust	1	Reference to the JNCC guidance (JNCC, 2010) has been provided for context only. Developing the MMMP for piling and UXO clearance in the pre-construction period will allow for a detailed review and assessment of the most effective and appropriate mitigation methods available at that time, including the latest scientific evidence and guidance.

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	<p>HRA Marine Mammals Figures</p> <ul style="list-style-type: none"> Paragraph 593 refers to figures 8 and 9, however figures 8 & 9 do not show concurrent piling at all 4 windfarms. Figure 8 shows concurrent piling locations at East Anglia 2 and figure 9 is not included. For a single UXO detonation the area of impact is given as 2,124 km² which in the EA2 HRA is given as 16 % of the winter area and in the EA1N HRA is given as 16.7 % of the winter area. Please could clarification be provided as to which is the correct figure 	NE	2	<p>Figure 8 of the Information to Support the Appropriate Assessment report shows concurrent piling at all offshore wind farm projects, except for East Anglia TWO which will have no concurrent piling, for those projects that are in the winter area, or that area within 26km of the winter area. Figure 9 of the Information to Support the Appropriate Assessment report shows concurrent piling at all offshore wind farm projects, except for East Anglia TWO which will have no concurrent piling, for those projects that are in the summer area, or that are within 26km of the summer area.</p> <p>A single UXO detonation in the winter portion of the SNS SAC (2,124km²) would be 16.7% of the winter area. This has been clarified within the Information to Support the Appropriate Assessment report, section 5.2.5.1.1 in Chapter 5 Environmental Impact Assessment Methodology of the ES.</p>
	<p>HRA Marine Mammals Baseline</p> <ul style="list-style-type: none"> The definitions of the seasons are taken from the SNCB threshold guidance for the SNS SCI, it is not for the MMO to manage when these seasons start and finish as implied in paragraph 604 of the EA2 HRA and paragraph 606 of the EA1N HRA. Fishing should not be considered as part of the baseline in the HRA, fishing should be included in both cumulative and in-combination assessments. 	NE; The Wildlife Trusts / Suffolk Wildlife Trust	4	<p>The reference to management of the number of days of piling within each season has been removed.</p> <p>The in-combination assessment includes all potential in-combination effects from other projects activities during construction and operation, this includes other offshore windfarms, UXO clearance and seismic surveys.</p> <p>In line with SNCB advice, fishing activity is considered part of the existing baseline, as they have existed in the North Sea for a long time before any offshore windfarm construction.</p>

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	<ul style="list-style-type: none"> As fishing is considered a plan or a project, it should be included in the in-combination assessment. This should be applied to cumulative impact assessments for all SACs. 			It is also considered more appropriate for fishing activity to be assessed as part of a more strategic assessment rather than project / developer led assessment.
	<p>HRA Marine Mammals Methodology</p> <ul style="list-style-type: none"> As stated in paragraph 326, the SNCB guidance advises that the effect of the project should be considered in the context of the seasonal component of the SNS SCI rather than the SCI as a whole. Paragraph 351 then goes on to explain that the mean annual density will be used in the assessment. NE advises the winter density should be used for EA2 and both the summer and winter densities should be used for the proportion of the site in those areas for EA1N. NE considers the SNCB guidance should be used when assessing impacts to harbour porpoise from piling noise and UXO noise for the Southern North Sea SCI. Assessment against the MU should not be required. We recognise that the approach to HRA assessment for the Southern North Sea SAC is advancing and we are impressed by the level of assessment undertaken e.g. a spatial and seasonal assessment of all activities rather than just piling and UXO. TWT believe the assessment of the impact on abundance of harbour porpoise should be done 	NE; The Wildlife Trusts / Suffolk Wildlife Trust; WDC	7	<p>Regarding comment regarding SNCB guidance in Chapter 11 Marine Mammals of the ES the East Anglia TWO windfarm survey area estimate of 0.73/km², based on the mean annual density and using the seasonal correction factors, has been used to inform the assessments of impact. Using the mean annual density allows for seasonal variation in the number of harbour porpoise that could be present within the site, and the seasonal variation in the nature of activities that will be undertaken over the construction period.</p> <p>As stated within the Conservation Objectives for the SNS SAC, the assessment of effects on the site should take into account the harbour porpoise population at the MU level (JNCC and NE 2019). The assessment against the MU has been included with the spatial and temporal assessments for both UXO clearance and piling to provide context of the number of individuals that may be affected as part of the wider harbour porpoise population. This approach was requested by NE during scoping (SPR 2017).</p> <p>Acknowledged.</p>

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	<p>against a site population. European guidance states “The expression ‘integrity of the site’ shows that the focus is here on the specific site. Thus, it is not allowed to destroy a site or part of it on the basis that the conservation status of the habitat types and species it hosts will anyway remain favourable within the European territory of the Member State.”⁴ Based on this guidance, to understand the impact on the integrity of the site, a site-based population assessment on the impact of development on the Southern North Sea SCI is required rather than assessing the impact in relation to the Management Unit.</p> <ul style="list-style-type: none"> TWT suggest that a site-based population assessment should be considered against 17.5% of the SCANSIII population which would give an estimated population number of 29,384. Other offshore wind farm developers (Norfolk Vanguard) have undertaken an assessment against as estimated population number and included this as an appendix to the HRA assessment. We would welcome this approach for East Anglia One North. Please note that TWT does not agree with the SNCB advice on underwater noise management for disturbance impacts. The proposed thresholds are not based on strong science and are therefore, not precautionary enough. TWT advocate the management approach used in Germany. However, we do support the use of the standard 26km deterrence radius. 			<p>An assessment of impacts to the SNS SAC has been provided to the Expert Topic Group to assess effects against the estimated site population. However, as stated within the Conservation Objectives for the site, it is not appropriate to use the SNS SAC site population in any assessments of effects of projects, as these need to take into account population estimates at the MU level, and therefore all assessments of effects on the SNS SAC are based on the North Sea MU (JNCC and NE 2019). This report was prepared and issued to the Expert Topic Group for information only and was not part of the consultation on the draft HRA or PEIR.</p> <p>Acknowledged.</p> <p>All mitigation included in order to negate effect of PTS within the MMMP for piling and UXO will be undertaken at all times of the year.</p> <p>The assessment on seasonal areas follows the most recent advice from the SNCBs.</p> <p>The development of the SIP will reduce any significant disturbance relative to the time of year and area of SNS SAC that disturbance could occur within.</p> <p>An In principle SIP (Document Reference: 8.17) has been submitted with this DCO Application and is secured under the requirements of the draft DCO.</p>

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	<ul style="list-style-type: none"> TWT have some concerns regarding the use of seasonal areas for underwater noise disturbance assessments. This approach will result in only half of the site being protected during half of the year. The current seasonal distribution of harbour porpoise may change over time due to natural factors or due to displacement from offshore wind farm development and therefore, it is essential that mitigation is deployed to ensure the protection of the whole site to safeguard site integrity. With the acknowledged gaps in understanding of harbour porpoise use of the Southern North Sea SCI, it would be consistent with the Precautionary Approach to deliver whole site mitigation. One of WDC's main concerns is that the assessment on the harbour porpoise population in the SNS SCI is based against the North Sea Management Unit. The European Commission guidance on managing Natura 2000 sites also states that the integrity of the site (habitat and species) must be maintained (European Commission and Office for Official Publications of the European Communities, 2000). The case law supports an approach which looks at both the site-level population and the favourable conservation status within the species natural range (see e.g. Commission v Spain C 404/09). Commission Guidance (Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive 92/43/EEC", European 			<p>Assessments were conducted based on the current SNCB advice which states that effects within the SNS SAC should be assessed against the wider population. As outlined within the Conservation Objectives of the site (JNCC and NE 2019), it is not advised to use the SNS SAC site population estimate in any assessments of effects of plans or projects, as these need to take into consideration population estimates at the MU level (JNCC and NE 2019).</p> <p>An additional assessment was completed and provided to the Expert Topic Group based on the estimate that the SNS SAC could support 29,384 harbour porpoise (SCANS-III data for 17.5% of the UK North Sea MU) alongside the PEIR for information.</p> <p>Assessments were conducted based on the current SNCB advice and the Conservation Objectives for the site. As outlined in the Conservation Objectives of the site (JNCC and NE 2019), it is currently not advised to use the SNS SAC site population estimate in any assessments of effects of plans or projects, as these need to take into consideration population estimates at the MU level.</p> <p>As stated above, an additional assessment was completed and provided to the Expert Topic Group based on the estimate that the SNS SAC could support 29,384 harbour porpoise, for information alongside the PEIR.</p>

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	<p>Commission, 2000, ISBN 92-828-9048-1) states at 2.3.2 that while favourable conservation status for species is defined by reference to its “natural range”, the assessment of favourable conservation status at site level “will always be necessary”. For the purposes of appropriate assessment, the focus is on the impact of the plan or project on the integrity of the site (for example, where article 6(4) is engaged, the damage to the site must be precisely identified (see Commission v Greece C43/10 at 114)).</p> <ul style="list-style-type: none"> WDC has previously raised concerns with the SNCB advice in section 206 of Chapter 11 Marine Mammals that “Displacement of harbour porpoise should not exceed 20% of the seasonal component of the SNS cSAC/SCI at any one time and or on average exceed 10% of the seasonal component of the SNS cSAC/SCI over the duration of that season”. We do recognise that this is the current advice given by SNCBs and this is the guidelines that developers have to work within. However this threshold approach proposed by the SNCBs has not been agreed with the competent authorities and has not been consulted upon and we have serious concerns about the evidence base of these thresholds. Additionally these thresholds are based on the ASCOBANS 1.7% bycatch threshold for harbour porpoise population decline. We do not agree that this is appropriate as these are thresholds set for 			<p>This is the current SNCB advice for assessments on the SNS SAC and is therefore used in the assessments. However, it should be noted that in addition to the area based approach, assessments were also conducted on the harbour porpoise North Sea MU population.</p> <p>Additional assessments on the estimated number of harbour porpoise that the SNS SAC site could support being provided to the Expert Topic Group alongside the PEIR.</p> <p>The MMMP and SIP for the SNS SAC will reduce the potential impacts of piling and UXO clearance on harbour porpoise in the SNS SAC. A draft MMMP (Document Reference: 8.14) and In principle SIP (Document Reference: 8.17) has been submitted with this DCO Application and is secured under the requirements of the draft DCO.</p>

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	<p>bycatch using the North Sea Management Unit harbour porpoise population as a baseline.</p> <ul style="list-style-type: none"> The results of this assessment estimate that a significant area of the SNS SCI, and the harbour porpoise population supported by the site could be impacted by construction activities, particularly piling during construction when the data is extrapolated for 75 foundations required for EA2, and 67 for EA1N. As detailed below, pile driving during construction has been demonstrated to cause behavioural changes in harbour porpoises, and reduce abundance in the area during the entire construction window, and beyond (see section below on Potential Impacts). 			
	<p>HRA Marine Mammals Impact</p> <ul style="list-style-type: none"> NE does not agree that just because the vessels will use existing vessel routes to and from windfarm sites, the increased risk of vessel interaction is therefore limited to the windfarm site. There is an increased level of collision risk due to an increased number of vessels and vessel movements. NE queries how the figure of 5 % has been arrived at as an increased collision risk? Paragraphs 674 of the EA2 HRA and 678 of the EA1N HRA appear to say there is a 5 % increased collision risk and paragraphs 675 of the EA2 HRA and 679 of the EA1N HRA then appear to state there should be no potential for increased collision risk with vessels. 	NE; The Wildlife Trusts / Suffolk Wildlife Trust	11	<p>The increase in vessels associated with the East Anglia TWO project using existing vessel routes, would not result in a significant increase in the number of vessels currently using these routes, therefore there would be no significant increase in the potential collision risk for marine mammals along these routes.</p> <p>As stated in section 5.2.5.1.6 of the Information to Support the Appropriate Assessment report, the potential for 5% of harbour porpoise present within the project areas to be at increased risk of collision is based on the available information on harbour porpoise stranding's and post mortems within UK waters and the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS) area.</p>

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	<ul style="list-style-type: none"> Although we appreciate that underwater noise changes over distance, we are concerned that PTS impacts for pin piles using the SELcum ranges is up to 21km. We would welcome a conversation with the project team regarding this, including the need for further assessment and on the adequacy of mitigation. TWT are pleased that an indicative figure for UXO clearances has been included and an assessment undertaken of impacts on the Southern North Sea SAC. However, we expect all offshore wind farm developers to undertake more pre-consent surveys to gain a realistic figure of required UXO clearances. This will ensure that a robust assessment of environmental impacts will be undertaken. With this information in place, a realistic dML could also be included within an application. For disturbance impacts, the HRA outlines that the spatial daily limits are likely to be exceeded if piling and UXO clearance took place concurrently. We welcome that that East Anglia One North will ensure that piling and UXO clearance will not occur concurrently or overlap to ensure no adverse effect on the site. Eastern IFCA support the outcome of the assessment that there would be no adverse effect on the integrity of The Wash and North Norfolk Coast SAC in relation to the conservation objectives for Harbour and Grey seal arising from changes in prey resources. 			<p>As a worst case scenario the assessment has been based on the potential for a 5% increased collision risk for marine mammals in the area. However, this is very precautionary, therefore taking into account that vessels within the wind farm and cable corridor would be stationary or very slow moving, there would be no increased collision risk with vessels.</p> <p>The MMMP for piling will be developed pre-construction in consultation, this will take into account the final project design, along with the latest guidance and latest information, including any updated noise modelling, to determine the predicted PTS ranges and mitigation required to reduce the risk of PTS in marine mammals. The assessments presented in the ES and draft MMMP (Document Reference: 8.14) are based on the current worst-case scenarios.</p> <p>Further investigations into the number, location and size of UXOs within the East Anglia TWO offshore development area will be undertaken in the pre-construction period.</p> <p>As discussed at the Expert Topic Group on 21st June 2019 the scenarios allow for UXO clearance and piling concurrently. While this is highly unlikely to occur concurrently between the East Anglia TWO and East Anglia ONE North projects, the assessment has allowed for this scenario.</p>

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	<ul style="list-style-type: none"> Grey seals are not a feature of the Wash and North Norfolk Coast SAC and NE therefore considers it is not necessary or appropriate to include them in the HRA for this designated site. Winterton-Horsey Dunes SAC does not have any marine mammal species listed as either a primary reason for selection of the site or as a qualifying feature and therefore NE consider it is not essential for the site to be included within an HRA for marine mammals. NE welcomes the consideration of seals in the assessment of impacts from EA2 and EA1N, but considers impacts to seals at known haul out sites that are not part of a designated site should be included in the EIA, not HRA, section of the assessments. A description of what 'the Wash and Blakeney point count' is should be included in the text. It is currently referred to for the first time in table 5.49 and no explanation or context is provided anywhere in the text for either EA2 or EA1N. 			<p>Acknowledged.</p> <p>As agreed with NE at the 3rd Expert Topic Group meeting on the 9th of January 2019, an assessment was completed on grey seal as part of The Wash and North Norfolk Coast SAC and Winterton to Horsey Coast SAC. However, due to this further advice provided by NE on the draft HRA, this assessment has now been removed.</p> <p>As assessment of disturbance to seal haul-out sites was scoped out the ES, however, the potential for disturbance and injury to foraging grey seals has been included within Chapter 11 Marine Mammals of the ES, section 11.6.</p> <p>Text has been added to the Information to Support the Appropriate Assessment report to clarify.</p>
	<p>HRA Marine Mammals Cumulative Assessment</p> <ul style="list-style-type: none"> The tiers that projects are placed in will need to be revisited and updated prior to submission and any changes followed through in to the cumulative impact assessment both for the EIA and HRA. WDC are concerned with the approach for the cumulative impact assessment (CIA) in section 1.6.1. We do not agree with the rationale behind 	NE; WDC; The Wildlife Trusts / Suffolk Wildlife Trust	3	<p>These have been updated within Chapter 11 Marine Mammals of the ES, section 11.7.4.1.</p> <p>The CIA included within the additional SNS SAC assessment, provided with the PEIR, assessed the potential for cumulative impacts as a result of other projects within the SNS SAC against the SNS SAC population, as well as the North Sea MU. If it is assumed that projects beyond the SNS SAC boundary (plus 26km</p>

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	<p>the approach, the purpose of this additional assessment is to assess the impacts of EA2 and EA1N on the population of the SNS SCI. By undertaking the cumulative assessment against the North Sea Management Unit population instead it goes against the objective of this additional assessment, and results in misleading data that will under-represent the in-combination impacts on the SNS SCI. We recommend that the cumulative impact assessment is revisited, using projects and plans outside the boundary that could have an in-combination effect with EA2 or EA1N against the SNS SCI reference population that has been used in the rest of this assessment. That is the only way to ensure the cumulative impacts on the SNS SCI are adequately assessed. We agree with the other offshore wind farms that have been included in the CIA, however activities other than offshore wind farm construction within the SNS SCI, do not seem to be included e.g. oil and gas, marine aggregates etc.</p> <ul style="list-style-type: none"> When producing the final Environmental Statement and HRA, it will be important to consider any further information which may be available for Hornsea 4 and any potential offshore wind farm extensions. 			<p>or 10km where relevant) could impact harbour porpoise of the site, then it must also be assumed that harbour porpoise not within that boundary would be affected by those same projects, and therefore the North Sea MU population would be the most appropriate reference population to assess against, as has been done in Chapter 11 Marine Mammals of the ES. For this reason, only those projects within the SNS SAC boundary (or within 10km or 26km of the boundary) have the potential to affect those harbour porpoise that are within the site at that time.</p> <p>Other activities (such as oil and gas and marine aggregates) have been screened out of cumulative assessment, as stated within Appendix 11.4 Underwater Noise Assessment of the ES.</p> <p>Further information has been added to section 5.2.5.5.1 of Chapter 5 Environmental Impact Assessment Methodology of the ES to clarify that only piling impacts have been considered to not overlap for windfarms with the same developer. Other impacts have been considered for all windfarms with the potential to overlap in construction programmes, regardless of developer.</p>
	HRA Marine Mammals Mitigation	NE; The Wildlife Trusts/ Suffolk Wildlife Trust;	11	The text in paragraph 598 of Chapter 11 Marine Mammals of the ES has been clarified to state that the Applicant will develop a SIP for the SNS SAC.

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	<ul style="list-style-type: none"> A Site Integrity Plan (SIP) is a document that the Applicant should produce to demonstrate their project in-combination with other plans and projects, will not have an adverse effect on site integrity on the Southern North Sea SCI. The text in paragraph 598 of the EA2 HRA and paragraph 600 of the EA1N HRA implies that the Applicant is assuming another party will be producing a SIP for each of the projects. It should be noted that it has not been determined yet who will manage the process of reviewing the SIP documents and determining any further mitigation that may be required. TWT agree that mitigation will be required to ensure no adverse effect upon site integrity from the in-combination impacts of underwater noise disturbance. The industry standard evolving appears to be the development and delivery of Site Integrity Plans (SIP) as the mechanism to ensure this. In principle, TWT support the use of SIP to manage the in-combination effect of underwater noise impacts from construction activity within the Southern North Sea SAC. However, with a lack of a mechanism to manage the multiple SIPs that will be in place to regulate in-combination impacts, no adverse effect on site integrity cannot currently be concluded. TWT believe that regulators need to develop a mechanism, such as a construction database, to ensure a robust assessment of in-combination impacts. This 	Whale and Dolphin Conservation; Eastern IFCA		<p>An In principle SIP (Document Reference: 8.17) has been submitted with this DCO Application and is secured under the requirements of the draft DCO.</p> <p>Comment regarding management of SIP review - noted. The reference to management of the SIP by the MMO has been removed.</p> <p>Acknowledged. The SIP will be developed in the pre-construction period, and will allow for a detailed review and assessment of the most effective and appropriate mitigation methods at that time, based on the latest scientific evidence to reduce underwater noise impacts across the SNS SAC, including the review of the best available mitigation techniques.</p> <p>The mechanism by which the SIPs will be managed, monitored and reviewed is beyond the scope of the project.</p> <p>The potential for impacts in both the summer and winter areas of the SNS SAC for East Anglia TWO have been fully considered within this Information to Support Appropriate Assessment report, due to the proximity of the project to the seasonal areas of the SNS SAC.</p> <p>Impacts for the SNS SAC have been assessed against the North Sea Management Unit (MU) population, as recommended by NE. However, as requested by TWT and WDC, and agreed as part of the EPP, an assessment was provided alongside the draft HRA and</p>

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	<p>approach would create a mechanism to manage multiple construction schedules and would give more certainty that there will be no adverse effect upon the Southern North Sea SCI from in-combination impacts. A commitment by developers to contribute construction data must be conditioned.</p> <ul style="list-style-type: none"> WDC are pleased to see that Chapter 11 Marine Mammals of the PEIR recognises the importance of the EA2 and EA1N areas, and that EA1N is in both the winter area and year round area of the SNS SCI for harbour porpoise, and that EA2 is in the winter area. Due to its location in the SNS SCI, it is likely that the construction of both wind farms will impact the harbour porpoise population of the SNS SCI, both stand-alone and particularly in-combination. Therefore construction at any time of year will require proven mitigation methods to ensure there is no adverse impact on the population of harbour porpoise supported by the site. Assessments on the Southern North Sea (SNS) SCI must take in to account the draft Conservation Objectives in the SNS consultation documents. Site-based protection cannot be met by assessing the whole North Sea population, but only by assessing the impacts for the number of individuals that are supported by the site. TWT is concerned that current mitigation used during UXO clearance is not fit for purpose. It is essential that work is undertaken over the coming 			<p>PEIR to the Expert Topic Group, for information only, based on the estimate that the SNS SAC could support 29,384 harbour porpoise (SCANS-III data for 17.5% of the UK North Sea MU).</p> <p>Developing the MMMP for UXO clearance in the pre-construction period will allow for a detailed review and assessment of the most effective and appropriate mitigation methods at that time, based on the latest scientific evidence.</p> <p>Details of potential monitoring will be developed pre-construction. These will be developed in consultation with stakeholders and be appropriate to the final project design and construction methodology.</p> <p>High-level proposals for monitoring are included in the In principle Monitoring Plan (Document Reference: 8.13), provision is also included (if required) within the In principle SIP.</p> <p>Acknowledged.</p> <p>Developing the MMMP and SIP in the pre-construction period will allow for a detailed review and assessment of the most effective and appropriate mitigation methods at that time, based on the latest scientific evidence to reduce underwater noise impacts, including embedded mitigation. A draft MMMP (Document Reference: 8.14)</p>

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	<p>years to gain realistic figures on noise impacts from UXO clearance and harbour porpoise response in relation to this. An assessment on the effectiveness of current mitigation measures, such as bubble curtains is also required. If the evidence suggests that current mitigation methods are not effective, then investment in research and deployment of new mitigation methods is required.</p> <ul style="list-style-type: none"> • TWT look forward to engaging with East Anglia One North on the development of marine mammal monitoring. This is especially important for the Southern North Sea SAC. Although SCANS surveys may not suggest any change in harbour porpoise density since the mid-1990s, analysis suggests that there is low power to detect changes in populations from SCANS data and populations of marine mammals may reach critical levels before a decline is detected. TWT also suggests that a strategic approach to monitoring should be implemented within the SAC which would yield better results and be a better use of individual developer resources. We are aware that a mechanism to allow strategic monitoring does not exist and we would welcome a conversation with the Applicant on how this can be achieved. • EIFCA acknowledges that studies analysing foraging rates in harbour porpoise have found that they feed almost continuously and are therefore highly sensitive to disturbance. EIFCA 			<p>and In principle SIP (Document Reference: 8.17) are submitted as part of this DCO application.</p> <p>Developing the MMMP for both piling and UXO clearance in the pre-construction period will allow for a detailed review and assessment of the most effective, and appropriate mitigation methods at that time, including considerations into those mitigation measures that have previously been proven to be effective.</p>

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	<p>supports the use of mitigation measures to aim to remove marine mammals from the mitigation zone prior to the start of piling to reduce the risk of any physical or auditory injury.</p> <ul style="list-style-type: none"> WDC have concerns over the embedded mitigation measures proposed and would like to see a commitment to using proven mitigation methods. Until the details of the MMMPs and SIP are finalised, it is impossible to conclude that there will be no Adverse Effect on Integrity (AEol) on the SNS SCI. Due to the location of EA2 and EA1N in the winter area, and year round area of the SNS SCI, it is particularly important that only proven mitigation measures are used as this is the only way to ensure no AEol on the harbour porpoise population of the site. WDC would like to see a commitment to using mitigation methods that have been proven in both test scale (Diederichs et al., 2013; Wilke et al., 2012) and full-scale sites, in particular bubble curtains (Brandt et al., 2018; Dähne et al., 2017; Nehls et al., 2016). 			
Cumulative impacts	<p>Approach to Assessment</p> <ul style="list-style-type: none"> Not enough consideration for cumulative impacts (in the PEIR). No ideas on how to minimise cumulative impact. National Grid Ventures not included in cumulative impact assessment. 	<p>Local Community Members; Snape Parish Council Meeting; Church of St Mary the Virgin, Friston;</p>	58	<p>Noted, this has been taken account of in Section 5.7 within Chapter 5 Environmental Impact Assessment Methodology of the ES.</p> <p>Section 3 of Appendix 4.6 Coastal Processes and Landfall Site Selection of the ES describes potential impacts on Sizewell C's cooling water Intakes and</p>

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	<ul style="list-style-type: none"> Haven't assessed the expansion of the Greater Gabbard and Galloper wind farms. National Grid Ventures Nautilus and Euroconnect Continental Interconnector projects not included. Consultation with Local Authorities and with local stakeholders commenced in December 2018 and so it is not valid for the Applicant to take no account of them in its designs and proposals. Cumulative impacts should be critically assessed and properly mitigated. The Applicant has not updated their information with the changes made by EDF energy therefore consultation on this is unacceptable. The ES should assess the in-combination impact on the 400 kV transmission network in the wider strategic area, given the amount of electricity coming ashore from other offshore wind energy projects and Sizewell C. No national plan for offshore power to connect to onshore grid One group needed to oversee combined impact of EA1N, EA2, EDF, National Grid and NGV projects No consideration of parliament advice that companies should work together to minimise the environmental impact of onshore developments by bringing together investment and sharing facilities. The Applicant's documentation fails to show consideration of combined effect of Sizewell C and D on the region. 	<p>SCC/SCDC (now East Suffolk Council); Darsham Parish Council; Snape Maltings; National Trust, Sizewell Residents; Friston Parish Council / SASES; EDF Energy</p>		<p>Outfalls with respect to coastal processes. This was an early stage report which recommended various mitigation measures which fed into the site selection process outlined in Chapter 4 Site Selection and Assessment of Alternatives of the ES. The landfall location and offshore cable corridor routeing has been optimised so that landfall is made in the southern portion of the offshore development area. This has increased the distance between the source of the impact and the potential receptor. The Applicant will continue to engage with EDF Energy in order to establish an appropriate 'no development' buffer zone from Sizewell infrastructure.</p> <p>As outlined in Sections 4.7.4.1.3 and 4.7.4.2.2 of Chapter 4 Site Selection and Assessment of Alternatives of the ES and illustrated in Figure 4.3 within Chapter 4 of the ES, EDF Energy raised concerns in relation to potential impacts to an important geological formation (Coralline Crag) in the landfall area which resulted in the Applicant widening the offshore cable route to the south so that this formation could be avoided.</p> <p>Furthermore, an assessment of the offshore cable corridor and landfall selection (see Appendix 4.6 Coastal Processes and Landfall Site Selection to Chapter 4 Site Selection and Assessment of Alternatives of the ES), using information provided by EDF Energy was undertaken to investigate construction methodologies which would avoid physical impacts to the Coralline Crag. This study is summarised in Section 4.8.2 in Chapter 4 Site Selection and Assessment of Alternatives</p>

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	<ul style="list-style-type: none"> Lack of information about Sizewell C and other proposed projects in the area. Not completed in line with the Environmental Impact Assessment Directive. Disingenuous to claim there is not enough detail on other developments to assess them. Ignoring available information on other developments. Assessment too brief. A more holistic approach involving all stakeholders should have been taken. Impacts not presented at consultations. Concerns that the Applicant stated in the consultation document they did not feel able to fully rely on the data from EDF and were not able to meaningfully assess the impact at that point. Similar concerns over no attempt to reflect on other potential infrastructure being developed in the area by National Grid. It was explained at a consultation meeting in Friston (27 February 2019) that EA2 and EA1N projects assumed that Sizewell C would be built using a marine-led strategy, however, EDF Energy have publicly dismissed a marine-led strategy as an option, suggesting that this attempt at cumulative assessment is flawed. SCC and SCDC feel there has been an inconsistent approach to taking into account cumulative impacts with other projects, in particular Sizewell C and this will need to be remedied. 			<p>of the ES. The results were used to inform landfall and nearshore engineering decisions which required refinement of the offshore cable corridor in the nearshore area.</p> <p>It is likely that the HDD pop-out location will be to the south of the outcrop of Coralline Crag (see section 7.6.2.7 of Chapter 7 Marine Geology, Oceanography and Physical Processes of the ES). Hence, there will be no interruption of the circulatory sediment transport pathways between the coast and Sizewell Bank.</p>

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	<ul style="list-style-type: none"> Projects considered in cumulative assessments should be reviewed before submission to include new projects. No cumulative impact assessment for three substations (East Anglia ONE North, East Anglia TWO and National Grid) in same location. Any development offshore, as the Applicant need to demonstrate that physical compatibility of its projects would have no adverse effects on the future operations of Sizewell C. EDF to work with the Applicant to understand any potential cumulative impacts and associated mitigations that may be required. Two interconnectors proposed by National Grid should be included in the cumulative impact assessment. 			
	<p>Cumulative Impacts with other schemes (Sizewell C, NGV interconnectors, other substation sites)</p> <ul style="list-style-type: none"> Concerns over construction traffic issues. Wear and tear of roads. Cumulative impacts on tourism and the economy. Cumulative impact of multiple industrial developments in a rural area. Cumulative impacts on same small area. Suffolk supplying 30% of the nation's energy. Cumulative impact on the AONB. Cumulative impact with Round 4 of offshore wind farm projects. 	<p>Local Community Members; Snape Parish Council Meeting; B1122 Action Group; Leiston-cum-Sizewell Town Council; Aldeburgh Society; Save our Sandlings; Royal Mail;</p>	435	<p>All relevant onshore ES chapters included a Cumulative Impact Assessment Appendix (apart from Chapter 27 Human Health and Chapter 30 Tourism, Recreation and Socio-Economics). These all assessed cumulative impacts with Sizewell B and Sizewell C, with some chapters assessing additional projects where applicable.</p>

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	<ul style="list-style-type: none"> Cumulative impact with Sizewell C up to 12 years long. Impact on communities, environment and businesses. Impact on character of Suffolk Heritage Coast. Long term damage. Industrialisation of the coast. Cumulative impact is not 'not significant in EIA terms'. Cumulative impact on grid system of connecting other nearby projects to same pylon network Cumulative impact on human health Cumulative impact of multiple schemes having separate landfall locations Lack of co-ordination with Sizewell projects with regards to traffic movements, overloading an area ill-suited to major infrastructure projects. Cumulative noise impact. Overwhelming impact to Leiston which will be in between the two projects. Impacts of new housing developments. It was estimated that if all the projects being offered onshore connections or transmission by National Grid proceeded, then over a quarter of the electricity generated or transmitted into the UK would occur in a very small area on the edge of the Suffolk coast. It cannot be disputed that the figures for jobs created by East Anglia One and Two but taken together with the Sizewell construction period (workforce 7,000) which will be concurrent, there 	<p>TEGAS; Therese Coffey; The Suffolk Coast DMO; Darsham Parish Council; Aldringham-cum-Thorpe Parish Council; Suffolk Energy Action Coalition; Snape Maltings; SCDC (now East Suffolk Council); SCC</p>		

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	<p>will be serious impacts on local communities in terms of housing, schooling, medical and emergency services, policing and the availability of local trades people.</p> <ul style="list-style-type: none"> • East Anglia ONE North and East Anglia TWO Offshore Wind Farms, followed by the National Grid Nautilus and Eurolink Projects, the possible extensions to the established Galloper and Greater Gabbard installations and the development of Sizewell C Nuclear Power station, will result in the Aldringham-cum-Thorpe local community facing continuous disruption for many years to come. • Suggesting the 'significant construction impacts' would be 'short term and temporary' is ridiculous when combined with all the other information about the likelihood of a sequential building process. • The cumulative impact of the infrastructure projects currently planned for East Suffolk must be considered simultaneously from the outset if their impact is to be properly planned and effectively mitigated. • Cumulative impacts of EA1N and EA2 would adversely impact the visitor economy in their current form and this would materially affect Snape Maltings. • The Royal Town Planning Institute Magazine, January 2019, states that ancient woodland and trees are threatened by the cumulative effects of inappropriate developments on their fingers and 			

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	sited inappropriately would have adverse edge effects on ancient woodlands and wildlife			
	Offshore cumulative impacts <ul style="list-style-type: none"> Overdevelopment in the North Sea. Concern over further development of offshore wind farms in the area in the future. 	Local Community Members	2	Where relevant, offshore ES chapters included a separate Cumulative Impact Assessment appendix to assess impacts with other offshore developments.
	Cumulative impact mitigation suggestions <ul style="list-style-type: none"> There should be a strategy to deal with construction work conflicts with EDF. Shared solutions and methods for transportation of materials and waste (with other developments). Provision of temporary parking, residential accommodation and recreation facilities for workforces during construction phases are co-ordinated and concentrated where possible. 	Socio-economics Expert Topic Group (Suffolk Coastal and Waveney District Council (now East Suffolk Council), SCC, Snape Maltings and Suffolk Coast and Heaths AONB); Local Community Member	4	Project conflicting with the proposed East Anglia TWO project is detailed in section 30.7 of Chapter 30 Tourism, Recreation and Socio-Economics of the ES.
General assessment comments	General Assessment Comments <ul style="list-style-type: none"> All studies are desk based and have not taken into account migration patterns. 	Local Community Members; Friston Parish Council /	58	The EIA methodology is described in Chapter 5 Environmental Impact Assessment Methodology of the ES. The EIA considers all relevant topics under three general areas of physical environment, biological environment and human environment. The EIA has been

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	<ul style="list-style-type: none"> Many assumptions and no real environmental data. Snape not considered in the development. Draft ES and Habitat Regulations Assessment fall short of standards required, and the proposed mitigation measures are inadequate and ineffective. Have not assessed all scenarios in which East Anglia ONE North and East Anglia TWO would be constructed. Plans work from maps and do not account for human lives. Why does consultation period close before any detailed information has been publicised? Support for construction given that the full environmental impact assessments to not demonstrate adverse effects on wildlife. The same level of scrutiny should be applied to the development of offshore facilities as onshore. Little thought given to the impact on rural area. Not enough work carried out to drop certain options (Sizewell). Mitigation measure not presented. Process based on theoretical computer modelling rather than visiting the site. Lack of knowledge or understanding of the local area. Local concerns not adequately addressed. Careless and complacent approach. More focus on ecology than the impacts to residents. 	<p>SASES, Therese Coffey, Great Yarmouth Borough Council; SCC, SCDC (now East Suffolk Council); Friston Parish Council / SASES; MMO</p>		<p>carried out in accordance with the Planning Act 2008 and the Infrastructure Planning (EIA) Regulations 2017 (the EIA Regulations).</p> <p>Characterisation of the existing environment has been undertaken to determine the baseline conditions in the area covered by the project and relevant surrounding study areas. This followed these steps:</p> <ul style="list-style-type: none"> Study areas defined for each receptor based on the relevant characteristics of the receptor (e.g. mobility/range); Review available information; Review likely or potential impacts that might be expected to arise from the project; Determine if sufficient data are available to make the EIA judgements with sufficient confidence; If further data required, ensure data gathered are targeted and directed at answering the key question and filling key data gaps; and Review information gathered to ensure the environment can be sufficiently characterised in sufficient detail and the data are suitable to make the EIA judgements with sufficient confidence. <p>A matrix approach has been used to assess impacts and to frame and present judgements made. Using this approach, definitions of sensitivity and magnitude of impact are tailored to each receptor, detailed in each technical chapter.</p>

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	<ul style="list-style-type: none"> PEIR does not provide enough information on impacts, concern that impacts will not be assessed properly before planning permission granted. Unclear how impact and duration are being calculated. The technical jargon and methodology used in this report presents a veneer of objectivity, but the errors, omissions and language used in this chapter show this is little more than a sales document. There is no clear logic as to the Applicant's assessment of impacts. The word 'temporary' is used in many areas to give a false sense of the impact this project will have. A key part of this proposal is not being consulted on and that is the extent of belief by the local community that what is being offered is not what will be delivered. The onshore site area now includes additional areas for works including road improvements, water management, landscaping, haul routes, site accesses and overhead line works, these areas need to be included within the assessments. The masterplan has been designed based on both EA1N and EA2 projects being approved and the use of an AIS National Grid substation. Although the visualisations demonstrate a GIS option, the implications for this option for the 			<p>Where an impact assessment identifies that an aspect of the development is likely to give rise to significant environmental impacts, mitigation measures have been considered and discussed with the statutory consultees in order to avoid impacts or reduce them to acceptable levels and, if possible, to enhance the environment.</p> <p>All ES chapters have a cumulative impact assessment which considers the proposed East Anglia TWO project and East Anglia ONE North project under two construction scenarios:</p> <ul style="list-style-type: none"> Scenario 1 - the proposed East Anglia TWO project and proposed East Anglia ONE North project are built simultaneously; and Scenario 2 - the proposed East Anglia TWO project and the proposed East Anglia ONE North project are built with a construction gap.

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	<p>design of the mitigation and consequent impacts on the schemes should be explored.</p> <ul style="list-style-type: none"> Impact of timescales on decision making has not been addressed in PEIR. EA1N and EA2 should not be considered as separate projects. For ease of reading the ES, it would be preferable if figures could be included within the main chapters rather than as appendices. 			
Request Information	<p>Request for information</p> <ul style="list-style-type: none"> Request for details on mitigation and compensation proposals. Request for onshore study area shape file for GIS system. Request for GIS shapefiles of windfarm location zone. Further information is also required on the two proposed NG contractors' compounds and other infrastructure relating to the pylons, which are not shown on the plans. RAG assessment never been publicly available. Request for fully detailed Flood Risk Assessment in Friston, with analysis of SUDs. Request for trial-trenching and further detailed investigation into archaeology. Request for further details of affected Public Rights of Way, both diversions and closures for public consideration. 	<p>SCC; SCDC (now East Suffolk Council); Essex and Suffolk Water; Local Community Members; Friston Parish Council / SASES</p>	19	<p>At each phase of the proposed developments application process, the Applicant has published details of supporting information and how to find it on the SPR website, such as the Scoping Report, and PEIR. In addition, and in accordance to the Statement of Community Consultation (SoCC) and Updated SoCC, and requests for information were addressed whenever the information was available. Information of which information was published at each phase is outlined in the introductory sections to each phase in this report.</p> <p>Following Phase 4 consultation, further information was provided on the project website and regular updates were sent via email to keep interested parties informed.</p> <p>Specific requests for data, such as shapefiles, were provided to individuals.</p>

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	<ul style="list-style-type: none"> Request for full evaluation of the cumulative effects of all three substations plus the effects of Sizewell C, the NGV Continental Interconnectors and other proposed energy projects. Request for full details and a proper assessment of the NG substation. Request for re-assessment of the landfall site. Request for evaluation of all Listed Buildings, including Aldringham Court. Request for further examination and details of traffic numbers and traffic monitoring. It is stated that “onshore infrastructure has been designed carefully”. If so, can detailed designs of the Applicant substations and the National Grid substations be made available? Request for discussion on mitigation of cable corridor impacts during construction. Seek further information regarding Cumulative impacts of the projects with other projects. Seek further information regarding National Grid connection infrastructure. 			
Cost Considerations	<p>Profit- orientated/ cost cutting</p> <ul style="list-style-type: none"> Broom Covert location would have saved costs. This is the cheapest delivery option. Exploiting the role of renewable energy and government subsidies for commercial gain. The Applicant should be required to give the government a commitment to not reconfigure 	Local Community Members	23	<p>Subsequent to Phase 3 consultation, the Applicant implemented an additional consultation phase (Phase 3.5) to consult on the Broom Covert, Sizewell substation site and the Grove Wood, Friston substation site.</p> <p>In the comparison between Grove Wood, Friston and Broom Covert, Sizewell, considerations included commercial viability and cost. It is Applicant's position, based on extensive advice and stakeholder engagement</p>

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	<p>technical arrangements in an attempt to reduce the price of energy generation.</p> <ul style="list-style-type: none"> • Driven by self-determined commercial expediency. • Concern that cost analysis of alternative options has not been adequately considered. • Private companies will cut costs to save money and this will result in safety issues. • Profit before the natural world. • Profits for multinational corporations and the biggest loss going to those who can't speak up for themselves, which is the natural world that 'progress' is built on. • Multinational corporations, with no link to the area, battling out superiority between each other, with no regard for nature, population, health and safety or the particular aspect of the whole space. • Construction working hours are an example of profit motive making the lives of ordinary people completely miserable. 			<p>that the Grove Wood, Friston site offers, on balance, the most appropriate option for substation development. This position is based on policy guidance presented within NPS EN-1.</p> <p>In order for the UK to achieve the reduction in emissions required by the EU UK Government set a target to produce 15% of UK energy from renewable sources by 2020. This includes a sub-target of 30% of electricity to be produced from renewable sources. With a total installed maximum capacity of up to 900MW, the proposed East Anglia TWO project alone has the potential to meet approximately 4% of the UK cumulative deployment target for 2030. For more information see Chapter 2 Need for the Project of the ES.</p> <p>Recent CfD auctions have seen significant reductions in the cost of offshore wind projects. In 2015, CfD Round 1 (in which East Anglia ONE Limited successfully secured it's CfD), achieved an average clearing price of approximately £117/MWh. In 2017, CfD Round 2 achieved a lower average price of £62/MWh with clearing prices as low as £58/MWh. The offshore wind CfD administrative strike prices for CfD Round 3 (expected to take place in 2019) is set at £56/MWh for 2023-24 and £53/MWh for 2024-25.</p> <p>Between East Anglia ONE's CfD award in Round 1 (2015) and Round 3 (2019), this change in the fiscal support of offshore wind has resulted in the CfD clearing</p>

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				<p>price reducing by £65/MWh, or 55%. All indications are that this downward pressure will continue into the 2021 CfD auction, when East Anglia TWO and East Anglia ONE North is expected to enter the Round 4 CfD auction.</p> <p>This reduction in CfD strike price represents a significant challenge for the offshore wind sector to reduce construction costs and is likely to result in only the most competitive projects receiving CfD support and therefore proceeding to construction.</p>
	<p>Financing</p> <ul style="list-style-type: none"> Where will money come from after we leave the EU? Will the Applicant sell the development to a third party after construction? 	Local Community Member	3	The EU political situation has no bearing on the financing of East Anglia TWO. Iberdrola are a global company with renewable projects in many countries
Communication and Comments on Public Information Days	<p>Concern over lack of communication at previous phases</p> <ul style="list-style-type: none"> Local community of Friston were not made aware of site consideration in summer 2017, when there were initial site visits. Failure to consult with Friston during Phase 1. No Phase 2 Public Information Day at Friston. Inadequate and misleading communication at early stages. Poorly advertised early stages. Lack of detailed information at every stage. 	Local Community Members; Aldeburgh Town Council; Friston Parish Council / SASES	146	<p>Phase 1 Public Information Days were an introduction to the projects, while Phase 2 Public Information Days were the first statutory consultation and focused on the seven possible zones.</p> <p>During Phase 1 the Onshore Study Area did not include the village of Friston and the seven possible zones had not been identified.</p> <p>Friston Parish Council was contacted prior to Phase 2, when the Applicant was consulting on the seven zones. Meetings were held with the Friston Parish Council on 5th March and again on 16th April 2018. At the first meeting, The Applicant used the time allocated by the</p>

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	<ul style="list-style-type: none"> Not had direct notification of the proposed developments from the Applicant (live on Grove Road). Only found out about events through local pressure group. Friston Parish Council were only notified in February/ March 2018. Residents of Snape were not consulted with directly until 18 days before the end of Phase 4 consultation and then only at the request of Snape Parish Council. Representatives were unable to answer relevant questions and gave misleading answers. Notification in newspapers was not an effective way to communicate the proposals. Information withheld from residents of the area most affected. We're not told about further NG industrialisation. No consultation on the landfall location at Thorpeness. Meeting in Leiston was poorly presented, felt that the Applicant was not taking consultation seriously. Some people were ignored. At Phase 3.5 called the substation Broom Covert Sizewell although it was in Leiston and not at Broom Covert. Poor PowerPoint at Leiston Phase 3.5 meeting with no plans and only an OS map of a large area with places which could hardly be seen. 			<p>Parish Council to present on the projects and the site selection process, prior to the parish council proceeding with other planning matters. The Phase 2 Public Information Days were advertised to the residents of Friston through posters, newspaper articles and online as described in Section 5.2.2 of the Consultation Report.</p> <p>At Phase 3 there were two Public Information Day events held at Friston.</p> <p>Consultation on the substation site selection started at Phase 2 (the first phase of statutory consultation) and continued throughout Phase 3. Subsequent to Phase 3 consultation, the Applicant implemented an additional consultation phase (Phase 3.5) to consult on the Broom Covert, Sizewell substation site and the Grove Wood, Friston substation site.</p> <p>Comments provided via the feedback form and via correspondence were noted.</p> <p>In response to comments on the lack of a leaflet drop of the whole area for Consultation Phases 1 and 2, the Applicant conducted extensive mail drops to postcodes IP15 – IP18 for Phase 3, 3.5 and Phase 4.</p>

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	<ul style="list-style-type: none"> • Consultations announcing the change to Sizewell as a possible interconnector site were shorter than they should have been. • Ill-considered or incorrect information presented has resulted in a loss of trust in the Applicant. • Poorly managed. • Substation has crept slowly towards the village with every stage of consultation. • Those effected by traffic impacts not consulted early enough as not considered to be inside the affected area. • Everyone living in the area should have been contacted directly. • Snape residents should have been consulted and informed directly rather than relying on general publicity. • Box ticking exercise to meet planning requirement, not genuine consultation. • Unfair – forgone conclusion all along. • Conflicting information depending on the audience. • Consultation 3.5 was too short. • Consultation 3.5 was not a proper consultation but purely used to pay lip service to the Planning Inspectorate. • Playing village against village. • Lack of information regarding the National Grid's requirements and intentions. • Distinct lack of detail in the 3.5 consultation document, particularly in respect of traffic and transport improvement works, alternative sites for 			

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	<p>onshore developments, environmental impact studies, the effect of the Applicant proposals on the regional tourist industry and legacy planning.</p> <ul style="list-style-type: none"> Planning process should be extended to resolve outstanding issues. Feedback forms are confusing , bewildering and user unfriendly. 			
	<p>Concern over Phase 4 Public Information Days</p> <ul style="list-style-type: none"> Concern that the consultation only lasted 6 weeks when other major infrastructure projects use 12 weeks. Consultation feels rushed. Deadline excluded seasonal visitors from being made aware and having the opportunity to have their say. Before, during and after pictures would have been a more honest way of presenting effects. Village of Snape was not included on the PID list and residents had to arrange their own meetings. Not all villages along the A12 from Felixstowe to Lowestoft informed about PIDs. Staff at the open days had not read all of the documents. Inaccurate maps provided. Crowded room is not an appropriate setting to discuss sensitive matters. Experts unable to provide accurate, transparent plans/information. 	<p>Local Community Members Snape Parish Council; Aldeburgh Business Association; SCC;SCDC (now East Suffolk Council)</p>	32	<p>The Phase 4 Public Information Days were carried out in line with the objectives of the SoCC to consult upon the PEIR for the project. This included details of the preliminary environmental assessment findings, a description of the proposals and baseline environmental information collected.</p>

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	<ul style="list-style-type: none"> Holding consultation for Sizewell C and the Applicant construction projects at the same time was unhelpful. This has either been very badly managed or is designed to deliberately confuse residents. Formal complaint on final stage NSIP consultation. Impossible to have fair consultation and fair feedback for these NSIPs as there too much to consider and digest. Consultation process is flawed in that there are proposals for a nuclear power station at Sizewell and Friston out for consultation. This was confusing and likely to mean people will think they are objecting to one scheme when they want to object to another. The current consultation was not adequate or fair given the potential impacts and the quality of the information, research and calculations contained within the Stage 4 Consultation Document. The speed and content of the Applicants "consultation" process was hasty, over generalised, lacking in facts and incomplete in the extreme. "Consultation" felt like a box-ticking exercise, obfuscation and not helpful. It was suggested at the beginning of the consultation process that a legal firm would be appointed to help and give advice to local residents, but at the last consultation it was stated that "someone forgot to get it sorted", which 			

Phase 4 Consultation				
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	<p>shows just how important the consultation process is to the Applicant.</p> <ul style="list-style-type: none"> Concerns over free-rein the Applicant now have as they've finished the consultation process and people no longer have a say in the outcome. Concerns over the fact the consultation process allows for changes after consent has been granted that can be detrimental to the local community. Lack of information available to take away on information days. 			
	<p>Lack of feedback form</p> <ul style="list-style-type: none"> No feedback form at Phase 4 for people to fill out. Should have a booklet of questions like Sizewell C. 	Local Community Member	3	Phase 4 focused on the communities input to the process and wanting to gain local knowledge and opinions on what they would like to see considered, for this reason the Applicant did not wish to lead people to answer certain questions but instead provide an open format that any information or concerns could be expressed.
	<p>Concern over notices and publicity of the Public Information Days and the proposed schemes</p> <ul style="list-style-type: none"> Notice of the public information days were posted after the meetings had already been held. Some who live on the B1122 on the outskirts of Aldeburgh are not aware of the schemes. Notices only 3 days before consultation. Notices with land maps outdated. Adverts not useful in notifying. 	Local Community Members	8	<p>At Phase 4 there were adverts in newspapers, a press release and articles advertising the meetings were posted online. The Applicant website included details of the upcoming events.</p> <p>The Phase 4 mail drop was undertaken for all residents and businesses in post code areas IP15, IP16, IP17 and IP18 including 16,500 letters.</p>

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	Communication method <ul style="list-style-type: none"> A large number of people living in the area are elderly and have limited online abilities and therefore are at risk of being exploited by the project. 	Local community member	1	The mail drops and newspaper articles were used methods of advertisement in addition to online notification. At the Public Information Days feedback flyers were handed out with freepost envelopes for feedback to be posted.
	Concern over Public Information Day locations and accessibility <ul style="list-style-type: none"> Why have there been no Public Information Days in Snape? Concern that those that don't live in the area permanently (i.e. second home owners) would not have been updated during Phase 4 consultation. 	Snape Parish Council Meeting; Thorpeness Residents Meeting; Local Community Members.	5	Phase 4 was publicised well at locations local to Snape, and residents and holiday home owners have had the opportunity to register on the website to receive direct updates. All relevant Phase 4 documentation was also available on the website.
	Concern over PEIR documents accessibility <ul style="list-style-type: none"> Difficulty looking at documents on screen and viewing many different PDFs. Concern over large amount of information without a coherent summary. Highly technical language. Would take a significant amount of time to go through the documentation. Not fit for consultation. Too much documentation with much information irrelevant to local concerns. Too much information to make a judgement on in four weeks. 	Local Community Members; Church of St Mary the Virgin, Friston, Aldeburgh Town Council; Friston Parish Council / SASES	52	<p>The Applicant produced a detailed PEIR, which provided a lot of information, to aid in the general public understanding. A signposting document was also produced to highlight where specific chapters and/or sections differed between the two project PEIRs, the Applicant also produced a Guide to Navigating the PEIR.</p> <p>Further to this, the PEIR was also summarised in a Non-Technical Summary.</p> <p>In order to ensure the PEIR was fully accessible to all and understandable, it was presented in a range of formats and locations. The PEIR was made available in digital format on the SPR website and printed copies of Volume 1 (chapters) and Volume 2 (figures) of the PEIR,</p>

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	<ul style="list-style-type: none"> 16,000+ pages in one month. Poor quality of some of the documentation including inconsistencies and incompleteness. No explanation of content or how to navigate the documents. Not explained that you did not need to read both sets of files as the onshore information for both windfarms was nearly identical. Volume missing from local library (later delivered). Unclear which documents related to onshore and which related to offshore. Not clear where to look for effects on the community. Concern that the documents were made intentionally overwhelming. Unacceptable presentation. No index was available. Limited places where documents could be viewed without a computer, this could be classed as discrimination. Inaccessible -written in technical language, using technical jargon and abbreviations). Unable to find information on landfall plans at Thorpeness, there should be a dedicated section on this. Sub-standard information and in some places factually incorrect. Maps difficult to navigate and lack of labelling (e.g. river names not included). Condescending tone. 			<p>together with printed copies of the Non-Technical Summary and the Habitat Regulations Assessment: Draft Report to Inform the Appropriate Assessment were made available to be inspected free of charge at the locations listed on the website and in newspaper articles. A printed copy of Volume 3 (appendices) was placed at Aldeburgh Library, and USB flash drives containing the entire PEIR content as set out above were made available at all locations. The full suite of appendices and figures was not printed for all locations as it was deemed environmentally irresponsible to print numerous copies, but it was available at all Public Information Days.</p> <p>PEIR chapters were provided in printed paper format at several locations in the area, which were advertised in local newspapers. The consultation period exceeded minimum time period requirements and therefore was deemed more than acceptable to process the information provided, in addition Public Information Days were held where the general public could ask representatives any specific questions they had or any queries on information provided.</p>

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	<ul style="list-style-type: none"> Amateurish language and generalised points are not useful or accurate ways of assessing this very important planning application. 			
	<p>Non-technical summary</p> <ul style="list-style-type: none"> The NTS lacked clarity on many crucial issues. No detail of potential vehicle movements along the narrow roads in the area, the proposed routes or how the effect of traffic would be mitigated. Lack of detail on the cable route. 	Local Community Member	4	The NTS is not intended to be a full detailed document, but an overall summary of the PEIR. Further information on key topic issues such as traffic and noise required reference to the PEIR chapters and appendices which were made available. This was described in the Guidance document on how to navigate the PEIR.
	<p>Concern over visualisations</p> <ul style="list-style-type: none"> 3D model was not explained at Public Information Day. It would be useful to have a more realistic presentation of seascape impacts (at night). Best case scenario of onshore substation should be shown. Request for visualisations of the NGET plant. Show aerial map visualisations of the area. Proposed buildings were represented by a simple outline rectangles and only an indication of their appearance which is a 'typical' substation. Difficult to envisage visual impact with the drawing on Plate 2.10. Distances from land are given from Lowestoft (on the display boards) and also include distances from Southwold in the Non-Technical Summary. This is completely misleading as EA2 is close to shore for a considerable distance further south, 	Local Community Members; SPS; Thorpeness Residents Meeting	17	The 3D model was demonstrated by a representative of the Applicant, who demonstrated an overall flight as well as providing the opportunity to people to see particular points they may be interested in i.e. at their properties or areas of interest to them. Depending on how busy the events were there may have been periods where a member of staff was not available, but it was always endeavoured to cover the 3D model station at all times. The model used worse case scenarios to be consistent with the PEIR. Simple outlines were used in visualisations as specific design detail will not be decided until later in the project development process. Night scenarios were not covered by the 3D model but were presented as images in the Figures of Chapter 28 Offshore Seascape, Landscape and Visual Impact Assessment available at the Public Information Days. All National Grid information available at the time of constructing the model was included. An important point to be aware of for the Public Information Day events is that the National Grid substation shown in the 3D Model

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	<p>including Thorpeness, Aldeburgh and beyond past Orford. These distances to shore should be given and the public consulted as it visually affects those, including sailors, using these popular coastal locations.</p> <ul style="list-style-type: none"> • Visuals lack detail and scale. • Maps were too small and feint to assess the impacts. • Showing computer pictures of tree screening after 15 years of growth seemed absurd. Trees could be at that stage of growth in approximately 26 years, after the planning and construction phases. 			<p>(and associated fly through video), differs from that used for the formal EIA assessment. The version used for EIA purposes, and displayed on photomontages, is a very blocky structure which displays the maximum building height for an AIS substation (13m) but is unrealistic in that it does not show the outdoor equipment associated with an AIS substation. The version on the 3D model was supplied by National grid and presents a more realistic version of what can be expected from an AIS substation. It includes one building at a height of 13m, so is appropriate in terms of their current worst case building height, but critically includes the outdoor equipment which appears as skeletal structures. The later model was not received in time for use in the EIA assessment and as such we have used it in the 3D only to present a more realistic representation for the Public Information Day events. Ariel map visualisations for the development area were presented and visualisations of the proposed substation site included in Chapter 29 Landscape and Visual Impact Assessment of the PEIR. Distances from land were described from a few key locations in order to maintain consistency of reference points. Planting visualisations used standard industry models in order to present a realistic case scenario for what the area would look like once construction has completed, and the areas has had chance to return to condition.</p>

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	<p>Helpful visualisations</p> <ul style="list-style-type: none"> Good seascape visualisations. 	Local Community Members	1	Noted.
	<p>Concern over not taking into account comments or views</p> <ul style="list-style-type: none"> Not taking into account local resident views. Not taking into account local authority or MP views. As it is an NSIP it is a 'done deal'. No account for local feelings or local environmental concerns. Little care for impact of the works. Gone against advice from Parish, District and County Councils and Suffolk Preservation Society. No one voted for Grove Wood, but the Applicant chose to place substations there. Wanted substation at Sizewell. Aldringham-cum-Thorpe Parish Council and both local authorities have opposed the crossing of Aldeburgh Road at subsequent consultation phases. Cumulative noise and vibration impact assessed at "negligible" or "minor" fails to address the 	Local Community Members, Snape Parish Council Meeting; Friston Parish Council / SASES; The Suffolk Coast DMO; SSC; SCDC (now East Suffolk Council)	186	<p>All community and statutory feedback has been considered at each consultation phase. Where relevant, this has informed decision making on the East Anglia TWO project.</p> <p>During Phase 3.5 the Applicant received over 600 responses to Phase 3.5 consultation and feedback received was in relation to both Grove Wood, Friston and Broom Covert, Sizewell. All feedback was considered when making decisions regarding site selection, the consultation raised specific concerns for the proposed substation impacts on the Suffolk Coast and Heaths AONB and drainage implications in relation to Sizewell Marshes nationally protected SSSI, therefore Broom Covert, Sizewell was not taken forward.</p> <p>The SoCC and Updated SoCC state that "Following each phase of consultation, the Applicant will reflect on any feedback to shape and inform the proposals."</p> <p>The RAG assessment process is a recognised tool for the comparison of substation zones in a site selection</p>

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	<p>concerns expressed by residents regarding the likely impact of noise over the construction period.</p> <ul style="list-style-type: none"> • Were told at Phase 3.5 that public views were not taken into account. • No commitment in the SoCC that residents views were taken into consideration. • There was only a brief pretence of responding to the residents of Friston in reviewing an alternative site. • Only have to show that there is a record of responses. • Already a 'done deal'. • Concern that scheme will not change due to public comments. • Not taken into account representations made at previous consultations. • Not considering the sensible alternatives proposed. • Failure to fully evaluate all alternatives. • Negligent and casual approach to assessing alternatives. • The Applicant clearly regard concerns by Friston residents to be "perceived" rather than "actual", when they are not in a position to judge this. The residents of Friston and surrounding communities are not ambivalent to the construction of these substations as shown by attendance at the Phase 4 and preceding Public Information Days. • The Councils response to consultation stated that Grove Wood, Friston would be hugely detrimental and difficult to mitigate. 			<p>exercise. Parameters included within the RAG assessment were discussed and agree with SCC and SCDC (now East Suffolk Council) and other statutory stakeholders.</p> <p>The RAG assessment considered archaeology / heritage, ecology and nature conservation, hydrology and flood risk, engineering and design, community, landscape and visual, property and planning considerations (see Appendix 8.13 of the Consultation Report for a Summary of RAG Assessment Methodology) .</p> <p>Noted. Chapter 4 Site Selection and Assessment of Alternatives in the ES provides rationale and justification for the selection of Grove Wood, Friston for the location of the onshore substations, and how this reduces the potential impacts on the Suffolk Coast and Heaths AONB.</p>

Phase 4 Consultation				
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	Concern over correspondence provided <ul style="list-style-type: none"> No response to consultations beyond alleging that it has “considered” them. Response not explained in everyday English and no copies of Appendices, Diagrams, Tables, etc. in email response to query. 	Local Community Members	2	Every response received at Phase 4 was responded to with an acknowledgment of receipt response and was read and considered fully before forwarding to the relevant project team for incorporating into the ES where appropriate. Workshops were held internally between the Applicant and subcontractors to discuss fully the responses received and how these could be addressed in the ES. How each response was addressed is outlined in the Consultation report response tables.
	Concern over media <ul style="list-style-type: none"> Need clarity over visual assumptions in flyby video. Concern over video showing residential properties. 	Local Community Members	2	The 3D Model was used to demonstrate what the development may look like in the area, as a visual aid to Chapter 28 Offshore Seascape, Landscape and Visual Impact Assessment and Chapter 29 Landscape and Visual Impact Assessment of the PEIR to help the general community interpret the visual impacts of the proposed development. The model used opensource aerial imagery to develop the model, similar to that available through interfaces such as Google Earth, but after concerns from a local property owner it was decided not to publish on the company website and only use as a tool under supervision at Public Information Days during the consultation period.
	Lack of information <ul style="list-style-type: none"> Lack of information on impacts to local people. Need detail on the period and volume of traffic to be expected. Need clarity on the types of HGV vehicles. Concern over clarity of the number of HGVs at the Public Information Days. 	Local Community Members; SPS; Snape Parish Council Meeting; Thorpeness Residents	92	At each phase of the proposed developments application process, the Applicant has published details of supporting information and how to find it on the SPR website, such as the Scoping Report, and PEIR. In addition, and in accordance to the SoCC and Updated SoCC, and requests for information were addressed whenever the information was available. Information of which information was published at each phase is

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	<ul style="list-style-type: none"> • Timings of HGV movements needed. • Need more clarity on the haul road between Snape Road and the onshore substation such as when it will be built and the impact it will have on Aldeburgh traffic. • PEIR didn't have enough information on Thorpeness. • Need evidence that flood risk would be not be significant. • Insignificant evidence that electromagnetic fields would not cause harm to humans or animals. • Clarity needed over what road improvements there will be. • Evidence is needed that construction timetables are staggered with Sizewell C. • Lack of information on cumulative schemes including the National Grid substation. • No satisfactory details provided in the PEIR (in relation to assessments, calculations and detailed plans for addressing increased surface water flooding, including detailed surface water management plans). • Lack of detail of substation site, people have no idea of the size, appearance and footprint. • Unclear what visibility period as a percentage means. • Request for details on lighting the substation. • Contradictory working hours. • Not much further information at this phase. • Need details on landfall area – HDD and transition bay. 	<p>Meeting; SCC; SCDC (now East Suffolk Council); Aldringham-cum-Thorpe Parish Council; NE</p>		<p>outlined in the introductory sections to each phase in this report.</p> <p>Following Phase 4 consultation, further information was provided on the project website and regular updates were sent via email to keep interested parties informed.</p>

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	<ul style="list-style-type: none"> Summary of key technical points or further detail in the NTS would have been useful. Full details on landscaping and flooding. Unclear the orientation of the cable corridors (is the haul road to be built on the east or west side of the cabling tranche?) – this makes it impossible for the public to understand the likely impact of construction work and traffic. Lack of information on the locations of the Construction Consolidation Sites (CCS) and haul road CCS. Height of NG substation needed – stated as 13m in the text but this is not shown on the drawing. Lack of detail on new cable connections which may be taken up to 25m above the adjacent ground level. Visualisations claimed to be on the website don't appear to have been available. No adequate explanation on why the Bawdsey to Bramford cable route could not take place. Produce a phased timetable in straightforward terms with Sizewell C construction traffic. Lack of detailed information required by landowners to understand the implications of the projects on their property. This is essential, particularly to understand the impact on cropping rotation. Limited detail has been provided on treatment and reinstatement of soil during and after construction. Need clarification on how practical issues, like dust, will be controlled during construction. 			

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	<ul style="list-style-type: none"> Locations of joint bays and link boxes should be advised and agreed at the earliest opportunity. Clarification required on the restrictions to be imposed on the use of the land within the easement strip is required. the Applicant representatives un-engaged with project The Applicant representatives unable to answer questions at Public Information Days. The Applicant representative did not know where substation would be located at a Public Information Day. PEIR had scant detail of the nature and build of the National Grid substation. No coherent implementation plan included in PEIR, residents have to assume worst case scenarios PEIRs contained no explanation of why Friston chosen as a substation. The Applicant have sought to trivialise concerns and present only a RAG assessment to residents. No detail given on height or appearance or proposed lightning conductors. No detail is given regarding footpath closures during the construction works. There is no detail on how, post construction, Footpath 17 will cross the new permanent substation access road, which is proposed to be fenced off. Measures to protect drinking water supplies have not been shared. 			

Phase 4 Consultation				
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	<ul style="list-style-type: none"> Lack of information about potential project which are being planned for the future. Unfair to consult local people without providing all the information first. Impossible to get any information on the number or position of the additional pylons. The Applicant has a strategy to direct certain HGV and Construction traffic along the length of cable corridor via a haul road that would extend from Friston to Thorpeness. No data has been supplied on the nature, scale, volumes and timings of such traffic along the main haul road. Has any research been done on domestic mobile phone connections (which would impact on the village of Friston)? Consultations have not answered questions regarding noise, light degradation, long-term benefit to village. Lack of information in consultation documents relating to the flood risk to Friston. It is not clear where the cables will enter and leave the Sandlings SPA. 			
	<p>Inadequate and misleading communications</p> <ul style="list-style-type: none"> Misleading information including likely impact, environmental and otherwise on local communities. Lack of transparency of appraisal process. Displays misleading. 	<p>Local Community Members; Church of St Mary the Virgin, Friston; Therese Coffey; National Trust, Friston</p>	74	<p>The Phase 4 Public Information Days were carried out in line with the objectives of the SoCC to consult upon the PEIR for the project. This included details of the preliminary environmental assessment findings, a description of the proposals and baseline environmental information collected.</p>

Phase 4 Consultation				
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	<ul style="list-style-type: none"> Concern over statement of 'negligible impact' when cables are built across the AONB and due to the volume and extent of traffic movements and resultant pollution. Inadequate information as to why Friston was chosen. Vague responses. Aim to confuse residents and deny information to make any form of measured response. The whole process has been opaque, unjust, manipulative and deceitful – impossible to assess why this has happened. Lack of planning apparent in the Public Information Days and supporting documentation. Residents have limited technical knowledge to respond. Providing information rather than consultation. Inadequate and confusing detail of the changes made in Phase 4 to the layout and screening of the proposed Friston substation. Inadequate onshore site appraisal information Lack of cohesive planning and proper consultation Public Information Day boards fail to mention that construction noise will continue for seven years. Misleading presentations on the duration of work and the impacts of other projects. Failure to inform all villages along the A12 between Felixstowe and Lowestoft about the potential impacts. 	Parish Council / SASES		

Phase 4 Consultation				
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	<ul style="list-style-type: none"> Consultation is not adequate to allow residents to have a meaningful assessment of the impact of this infrastructure. Concern over use of the word "minor" by the Applicant, as it makes anything sound like a short term, minor "inconvenience" which residents must live through for the sake of the greater good. Lack of solid facts on project such as the relative position of haul roads and cable runs within each corridor. 			
	<p>Concern over time spent responding to consultation</p> <ul style="list-style-type: none"> Not fair to offload the expense and time-consuming process on councils and other large bodies to consider all the concerns of the local people. Concern over using "minor" to describe impacts. It underplays the consequences of the Applicants proposal and puts onus on individuals and small local councils to do all the work required to attend meetings, read reams of documentation, try to understand the impact of the proposals and then investigate and even refute the Applicants claims. The Applicant has committed to a 'lessons learnt' approach following the EA1 project, but in respect of the importance of thorough, early evaluation to inform project design and programming and also to best protect heritage, this does not appear to have occurred. The six week timescale in 	Local Community Members; SCC; SCDC (now East Suffolk Council)	3	The Applicant made the decision to bring the East Anglia TWO and East Anglia ONE North applications in line with each other. This means that the consultation for both projects has been run concurrently, providing more transparency and reducing the consultation burden for stakeholders and communities. It also meant there has been greater clarity on cumulative impact and interactions between the projects. This approach allowed the Applicant to engage in a longer period of pre-application consultation, which was requested in previous feedback contributions.

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	combination with the volume of information contained within the consultation documents has been a challenge for the Councils and local communities.			
	<p>Consultation should be re-done</p> <ul style="list-style-type: none"> Re-do consultation. More work with local people before going further. 	Local Community Members	2	<p>The Applicant held four phases of statutory community consultation in order to consult with local community members. This included implementing an additional consultation phase (Phase 3.5) to consult on the Broom Covert, Sizewell substation site and the Grove Wood, Friston substation site.</p> <p>Further information was provided on the project website and regular updates were sent via email following Phase 4 consultation to keep interested parties informed.</p>
	<p>Further Consultation</p> <ul style="list-style-type: none"> A need for the Applicant to ensure that it had engaged and continues to engage directly with the Essex coastal authorities as the appropriate neighbouring Local Planning authorities, as well as the unitary authority of Southend on Sea Borough Council. Further consultation directly involving the village of Snape be carried out when the necessary work and analysis is available, as Stage 4 consultation cannot be regarded as putting the residents of Snape village or surrounding area in a position to properly understand the full impact of the proposals nor therefore what meaningful mitigation could be carried out. 	Essex County Council; Snape Parish Council; Local Community Member; SCC; SCDC (now East Suffolk Council); RSPB	5	Noted.

Phase 4 Consultation				
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	<ul style="list-style-type: none"> It would be possible to create working parties and committees of local people (as per neighbourhood planning that has been conducted in many towns and villages in recent years) to allow local people the chance to contribute to the details of screening, footpaths, noise, etc. Further discussions required with local Councils during the EIA process regarding project design and layout. RSPB are grateful for the constructive pre-application discussions with the Applicant and will continue discussions with a view to resolving our concerns and ensuring that robust evidence is submitted so that the potential environmental impacts can be properly understood and evaluated. 			
	<p>Concern over blaming other organisations for site selection choices</p> <ul style="list-style-type: none"> Blaming the Government for incorrect cabling from Bawdsey to Bramford. Blaming National Grid for choice of Friston. Blaming EDF for being unwilling to negotiate for a site at Sizewell. 	Local Community Members	5	The Applicant and National Grid have regular meetings and they also assess and publish long term grid development statements annually. The Applicant engaged with National Grid in early 2017 to determine connection options based on contracted background at that time and reflecting the projects' timescales and reduced capacities. This resulted in the Connection and Infrastructure Options Note (CION) review process which confirmed that connections in the Sizewell area for East Anglia TWO and East Anglia ONE North would be the most economic and efficient while considering environmental and programme implications.

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				In spring 2017, National Grid advised that due to the changing contracted background, connection capacity could be available in the Sizewell/Leiston area. The CION process reviewed all realistic options and in summer 2017 concluded that the most economic and efficient connections for East Anglia TWO and East Anglia ONE North, while considering environmental and programme implications, would be into the circuits in the Sizewell/Leiston area.
	Useful and informative Public Information Days and other consultation <ul style="list-style-type: none"> • Informative exhibition. • Impressed by all the research and planning. • Good number of locations. • Southwold Fisherman's Association appreciates the efforts by the developer to have open and meaningful discussions with the members. • Holding information days on weekdays and weekends has allowed good access by local population. 	Local Community Members; Southwold Fisherman's Association; SCC; SCDC (now East Suffolk Council)	8	Noted.
	Concern over representatives/ answers <ul style="list-style-type: none"> • No National Grid representatives at the Public Information Days. • Representatives had little depth of knowledge and left questions unanswered. • Poor standard of communication with reliance on PR consultation staff with little or no knowledge of 	Local Community Member	18	Representatives provided responses according to the information available at the time. As the pre-application consultation is an iterative process, the only response in some cases was that investigations are ongoing.

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	<p>answers to key questions or a degree of empathy to respond the residents' key concerns.</p> <ul style="list-style-type: none"> No awareness of present traffic problems on Leiston Road (B1122), due to residents parking, by the Applicant representatives. At the Snape consultation day, no consideration had been given to queues and pollution that increased industrial traffic would create on Church Road at Snape or its environs. At consultation, there was little response from staff, particularly regarding contentious issues. They were poorly briefed. The Applicant representatives at the PID days have given little confidence in the level of mitigation and compensation to the residents, environment or impact on the communities affected. The Applicant representatives, at the second meeting held by the Applicant in Friston, addressed people in a patronizing manner, and said the substation would be okay as it would be colour cladding. the Applicants attitude to Friston and its residents are insulting and derisible. 			
	Knowledgeable Representatives	Local Community Member	2	Noted.
	Concern over media interview	Local Community Member	1	The Applicant always endeavours to communicate information clearly and inform the local communities of any progress on the projects. The Applicant does not intentionally wish to misrepresent any impacts, rather

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	<ul style="list-style-type: none"> Concern over interview on BBC news not taking into account negative impacts such as the impacts on local communities. 			interviews are usually focussed on a predetermined number of issues and cannot cover everything.
	<p>Co-operation between EDF Energy and the Applicant</p> <ul style="list-style-type: none"> Lack of joined up thinking. Piecemeal approach to energy infrastructure development with EDF. Should be co-ordination with Sizewell. Should discuss a better strategy with EDF and NG. The two projects running parallel will constitute the biggest construction enterprise in the world concentrated in a few square miles. No pooling of plans for one road to serve both projects to reduce impacts. Evaluating project on an individual level will not allow for adequate assessment of cumulative effects. Running consultations at the same time means elected representative as the public do not have enough time to review everything presented. 	Local Community Members; Aldeburgh Society; Darsham Parish Council	48	The Applicant has consulted with EDF Energy extensively throughout the pre-application process. The Applicant is also part of the Energy Projects Working Together Group established by the Local Planning Authority.
	<p>Government Involvement</p> <ul style="list-style-type: none"> Co-ordination from Government level. No overall control. Plan for landfall for all windfarms in the North Sea. There are too many landfall connections. 	Local Community Members; Snape Parish Council Meeting; Leiston-cum-	74	<p>The Applicant undertook regular liaison with the Local Planning Authority and with other energy companies. The Local Planning Authority organised specific Suffolk Energy Projects meetings which the Applicant attended.</p> <p>The matter of seeking change to Government policy and strategy is not a matter for this DCO application.</p>

Phase 4 Consultation				
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	<ul style="list-style-type: none"> National policy should be to manage necessary provisions to minimise impacts. Assume a clearer role in managing these projects to reduce environmental and economic harm. This role would be in line with The Department of Business Energy and Industrial Strategy's statement from 7th March 2019. Alternative site should be looked into at a governmental level to ensure there is a strategic and co-ordinated approach to the combined effect so the current and anticipated proposals. Offshore wind farms should be co-ordinated as a whole project from selection of the sea bed by the Crown Estate to the choice of location of substations and land based infrastructure. Minister of State at BEIS has stressed "the importance of taking in combination all energy-related proposals under a single planning regime as NSIPs" Considering each infrastructure project in isolation does not allow impacts on communities to be minimized. Work with local government to address concerns. Central planning and oversight have been lacking. Ministers have made improper public statements about the development. Government pandering to the needs of big companies rather than people. Government should be encouraging the use of existing brownfield. 	Sizewell Town Council; Aldeburgh Society		

Phase 4 Consultation				
Topic	Feedback	Stakeholders	Number of times feedback received	Action
	<ul style="list-style-type: none"> As the government and industry set itself the ambition to provide 30GW of energy produced by offshore wind power by 2030, a coordinated well-planned policy and strategy needs to be developed that locates energy hubs in appropriate locations, accessed by appropriate means. Since the 3.5 the Applicant consultation a movement for proper planning policy around wind farm and other connections is now gaining traction in parliament with Norfolk MP George Freeman - with Claire Perry and Suffolk MP Therese Coffey attending the debate. This was mentioned as being very positive by many councillors during a recent cabinet meeting of Suffolk District Council and Suffolk Coastal District Council and the general feeling now is that something needs to be done. In the light of this might it not be worth the Applicant considering asking for an extension of any lease or rights granted by the Crown Estates or other bodies? 			
	<p>Co-ordination between energy providers</p> <ul style="list-style-type: none"> Agreement between all energy providers on onshore locations. Need joined up thinking/ co-ordinated approach. Co-ordination between developers (such as EDF, NG and Galloper) to find combined solutions to minimise the impacts on local communities. A co-ordinated approach is advocated by the local authorities. 	<p>Local Community Members; Aldeburgh Society; Aldringham-cum-Thorpe Parish Council; Suffolk Energy Action Coalition; SCC; SCDC</p>	66	<p>The Applicant is part of the Energy Projects Working Together Group established by the Local Planning Authority and is in regular dialogue with other energy companies in the area.</p>

Phase 4 Consultation				
Topic	Feedback	Stakeholders	Number of times feedback received	Action
	<ul style="list-style-type: none"> Decisions should be made in a coordinated way which include impact on land, rather than each project be competed and uncoordinated. Better planning required to reduce the potential for multiple excavations. Piecemeal developments are not the best way to meet the national energy needs. Evaluating project on an individual level will not allow for adequate assessment of cumulative effects. 	(now East Suffolk Council)		
	<p>Strategic planning from National Grid</p> <ul style="list-style-type: none"> Lack of strategic planning from energy sector, particularly from the transmission arm of National Grid. Lack of accountability and transparency of National Grid for site selection. NG's choice of connection points should be scrutinised openly with more consideration of the environment and local population. Flawed process by which National Grid identifies points of connection to pylon lines without wider consultation. The Applicant is undertaking the exercise on behalf of NG to meet emissions targets and NG's 2017 directive. National Grid should reconsider and put a greater weight on the value of landscape. the Applicant being led by National Grid directives. 	Local Community Members; Leiston-cum-Sizewell Town Council; Therese Coffey	29	<p>The Applicant and National Grid have regular meetings and they also assess and publish long term grid development statements annually. The Applicant engaged with National Grid in early 2017 to determine connection options based on contracted background at that time and reflecting the projects' timescales and reduced capacities. This resulted in the Connection and Infrastructure Options Note (CION) review process which confirmed that connections in the Sizewell area for East Anglia TWO and East Anglia ONE North would be the most economic and efficient while considering environmental and programme implications.</p> <p>In spring 2017, National Grid advised that due to the changing contracted background, connection capacity could be available in the Sizewell/Leiston area. The CION process reviewed all realistic options and in summer 2017 concluded that the most economic and efficient connections for East Anglia TWO and East Anglia ONE North, while considering environmental and</p>

Phase 4 Consultation				
Topic	Feedback	Stakeholders	Number of times feedback received	Action
	<ul style="list-style-type: none"> National Grid should be taking accountability as a key strategic partner in this project. National Grid must reconsider the connection point and place it closer to the main users of this electricity being generated (and later transmitted). That could be at Bradwell – where there is future nuclear development – or by cabling or an offshore ring main direct into the Thames Estuary and the London area. National Grids involvement in dictating both land fall and substation locations remains unclear. the Applicant claim that National Grid told them to make landfall at Sizewell. 			programme implications, would be into the circuits in the Sizewell/Leiston area.
	<p>Project Planning</p> <ul style="list-style-type: none"> Concern that project has not been thoroughly planned and the Applicant is using technical anomalies raised by residents to inform their future thinking. Volume of documents at Phase 4 is an indication of the lack of detailed planning. Concern that lack of planning will result in the project overrunning at considerable cost. Inefficient to treat EA1N and EA2 as two separate projects. Concern that the project is being rushed as the 10-year lease from the Crown Estate is about to expire. Supports the need for wind farm projects but this particular project has not been thought through and is not being well managed. 	Local Community Member	9	The Applicant has followed all appropriate guidance and criteria for the proposed developments through according to the Planning Act 2008, DCO consent application process. This included initial Phases from Scoping in 2017, through publishing of the SoCC and any revisions, and onto Section 42 consultation on the PEIR Draft ES, with all consultation responses feeding into the revised ES accompanying the DCO application. The Applicant has strived to keep the general community and stakeholders as fully informed as possible, and as such published a number of detailed documents to achieve this, and as required in order to meet criteria of the application process to the Planning Inspectorate. This detailed information reflects the amount of planning undertaken as the project has continued to be refined from initial project red line

Phase 4 Consultation				
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	<ul style="list-style-type: none"> The handling of the project has been heavy handed and the particular geographical issues, sensitive environment and the disruption caused by the project have been underestimated. 			boundaries to the final DCO consent order limits proposed and a more detailed project design. Each project is a separate, and individual commercial undertaking. The proposed East Anglia TWO project and proposed East Anglia ONE North project are being developed in parallel but they have been submitted as two separate DCO applications, therefore there are two potential scenarios: that both projects would progress in parallel (construction scenario 1) and that both projects would progress sequentially (scenario 2). This is described further in Chapter 6 Project Description of the ES.
Construction Methodology	<p>Working hours</p> <ul style="list-style-type: none"> Objection to six days a week working hours – should be limited to 8 to 5 working day, week time only. No extensions to working hours should be authorised, especially if the project is behind schedule. Proposed construction working hours are unacceptable. The caveat that "full weekend working may be required to maintain programme progress" is unacceptable. 	Local Community Members	4	<p>Further detail on working hours and timing of works is covered in the OCoCP (Document Reference: 8.1).</p> <p>The Applicant will use best endeavours to sensitively time and minimise the duration of construction activities. East Suffolk Council will be advised of the likely timetable of works. This timetable will also be shared with affected communities through the local community liaison officer.</p>
	<p>Ecological Clerk of Works</p> <ul style="list-style-type: none"> Communication between Ecological Clerk of Works and the local Councils is expected to be better compared to previous SPR projects. 	SCC; SCDC (now East Suffolk Council)	1	Noted. The Ecological Clerk of Works would endeavour to maintain good communication with all relevant stakeholders.

Phase 4 Consultation				
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	<p>General Construction Methodology</p> <ul style="list-style-type: none"> The Councils wish to urge the Applicant to look again at the method of working being proposed and commit to a more integrated and efficient approach to developing the two projects in order to lessen the detrimental effects which will be experienced during construction in particular but also decommissioning. National Grid's Overhead Line/s is protected by a Deed of Easement/Wayleave Agreement which provides full right of access to retain, maintain, repair and inspect our asset Safe clearances for existing overhead lines must be maintained in all circumstances. The relevant guidance in relation to working safely near to existing overhead lines is contained within the Health and Safety Executive's (www.hse.gov.uk) Guidance Note GS 6 "Avoidance of Danger from Overhead Electric Lines" and all relevant site staff should make sure that they are both aware of and understand this guidance. Plant, machinery, equipment, buildings or scaffolding should not encroach within 5.3 metres of any of our high voltage conductors when those conductors are under their worse conditions of maximum "sag" and "swing" and overhead line profile (maximum "sag" and "swing") drawings should be obtained using the contact details above. 	<p>SCC/SCDC (now East Suffolk Council) National Grid</p>	5	<p>Details on construction methodology will be provided in the OCoCP (Document Reference: 8.1).</p> <p>As it was not known whether both projects would be constructed simultaneously or sequentially. The onshore topic assessments (Chapters 18 – 27) include two cumulative assessment scenarios which are considered to represent the two worst case scenarios for construction of the onshore infrastructure.</p> <p>National Grid's comments have been noted. The Applicant has consulted and worked with National Grid throughout the pre-application design process to establish a Rochdale Envelope.</p>

Phase 4 Consultation				
Topic	Feedback	Stakeholders	Number of times feedback received	Action
Suggested Mitigation Measures	<p>General Mitigation</p> <ul style="list-style-type: none"> There should be mitigation measures in place. The Councils are concerned that the various competing interests for the mitigation of the wider range of adverse effects (noise, landscape harm, visual impact, drainage, heritage) could potentially be in conflict with each other and therefore at risk of being compromised in their effectiveness. SCC and SCDC require the Applicant to work closely with other developers including EDF Energy and National Grid Ventures to consider how mitigation across the schemes can be combined to minimise the impact of the totality of developments in the local area 	Local Community Member; SCC; SCDC (now East Suffolk Council)	3	<p>An OLMP (presented in the OLEMS (Document Reference: 8.7) submitted with this DCO application) has been produced in consultation with SCC/SCDC (now East Suffolk Council) and further to feedback at Public Information Days. Proposed woodland planting areas have been updated to respond to local character and tree species have been updated to include only native species. SUDs basins have been located to the west and south-west of the substations. The OLMP is considered to afford the potential for an effective scheme of mitigation of the landscape and visual impacts of the onshore substations.</p> <p>The Applicant have been in consultation with EDF Energy and National Grid Ventures. Cumulative Impact Assessments for onshore chapters have included impacts with Sizewell B and Sizewell C.</p>
	<p>General Reinstatement</p> <ul style="list-style-type: none"> Before any development consent is granted, there should be a clearly-defined commitment to replace, as a matter of urgency, habitat, trees and footpaths. Ground restoration work should be contemporaneous with construction. 	Aldeburgh Town Council	1	<p>The Applicant has committed to returning the land, where practicable, to the condition it is prior to construction. This will require reinstating topsoil and subsoil and final restoration where possible, including re-seeding pasture and arable land, reinstating fences and re-planting suitable hedgerow species. Once the cable is installed underground, there should be no visible evidence of its presence.</p> <p>At least an equivalent area of lost woodland will be replanted following completion of the works (trees cannot be replanted directly above the buried cables).</p>

Phase 4 Consultation				
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	<p>Compensation</p> <ul style="list-style-type: none"> Residents should be provided with compensation for loss of value on their properties. Compensation for tourism, fishing and cultural aspects of life. Residents should be compensated for the health impacts. Ensure compensation for fisherman is paid to the full amount of lost earnings. Any compensation fund for the local community be made available from the commencement of the project, rather than at completion. As many of the more elderly residents in the parish of Aldringham cum Thorpe will be dead by the time the project is completed, though they will have experienced disruption during the construction phase. The Applicant should put in place amenity or uplifting, well-designed and attractive new areas for people to enjoy rather than just screening being seen as hiding an eyesore. the Applicant could make it a series of opportunities for good news and pay for some improvements that will help to mitigate against the years of disruption the proposed plans will bring. It could give people something else to focus on. The Applicant could provide free power for people affected by the proposed substation similar to EDF offering power to locals near their power station. 	Local Community Members; SCC; SCDC (now East Suffolk Council)	34	<p>At this stage the Applicant is assessing the potential impacts of the proposed projects and considering mitigation that might reduce or remove any potential impacts identified. The projects will seek to avoid or mitigate against adverse impacts with the aim of removing or reducing the potential for impacts. In the event that a stakeholder believes that they have been adversely affected by either project during construction or operation of one or both of the projects, (e.g. property value) the general law of compensation in England will apply to any statutory claims for compensation made, and these are set out in legislation which the Applicant will comply with. This is not intended to be legal advice. Should a party believe that they require further advice on these matters, they should consider seeking their own legal advice.</p> <p>All feedback received during the consultation phases relating to community benefit has been logged and collated by the Applicant. This information has been considered during the creation of the Applicant's principles for community benefit funding. A commitment was made to a community fund in July 2019 to Suffolk County Council and East Suffolk Council, to be further decided post-consent.</p>

Phase 4 Consultation				
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	<ul style="list-style-type: none"> Seek a wider compensation package from developers and the Government that deals with the broader impacts on community, environment and businesses of this and other energy projects in the area. 			
	<p>Supply and Waste</p> <ul style="list-style-type: none"> Biodegradable products should be used and waste (such as plastics) recycled to minimise impact. Use UK made products and services. 	Local Community Members	2	<p>The OCoCP (Document Reference: 8.1) includes Waste Management. The Applicant aims to manage waste in accordance with:</p> <ul style="list-style-type: none"> Legislative requirements; The EMS; and The waste hierarchy by avoiding waste generation and promoting waste minimisation in the first instance. Where waste is produced, reuse or recycle or recovery should be considered where practical and economically feasible prior to considering disposal.
	<p>Coastal Defence</p> <ul style="list-style-type: none"> Need options for improving the strength of the coastal defences. Compensation to prevent coastal erosion. Improve coastal defences. 	Local Community Members; Aldringham-cum-Thorpe Parish Council	5	<p>Relevant coastal mitigation measures are discussed and are provided in Chapter 7 Marine Geology Oceanography and Physical Processes of the ES.</p> <p>The Applicant has committed to undertaking HDD at the landfall to ensure that there is no interaction with, or impact upon, the cliffs, beach or intertidal area.</p>
	<p>Safety</p> <ul style="list-style-type: none"> In order to provide safety for children and dogs along the haul road / trenching / construction sites, it would be better to construct tall banks of soil to be kept in place from the beginning to absolute completion of the projects, than erect 	Local Community Member	1	<p>The OCoCP (Document Reference: 8.1) includes Health and Safety Principles to minimise the risks to the health and safety of all those engaged in construction, maintenance (and demolition) of the proposed East Anglia TWO project or to others who may be affected.</p>

Phase 4 Consultation				
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	fences. This would provide noise and visual screening and could be planted with native flower seeds (cheaply) which would be more attractive, used by local wildlife and the roots will help stabilise the soil.			
	<p>Cable route construction</p> <ul style="list-style-type: none"> Cable trenches should be filled in as soon as possible as the cable route moves west (rather than the whole route laying open for years to come). Should be done a section at a time and re-instated. Working hours in the compounds and on the haul roads should be 7:30am – 6pm to give residents and walkers some dust and noise free recreation time. 	Leiston-cum-Sizewell Town Council	2	<p>The construction programme proposed that the onshore cable route would be subdivided into sections of 500m to 2km lengths, separated by the presence of CCSs. The extent of the four sections has been defined by the constraints afforded by existing natural or man-made obstructions and is shown in Figure 26.7 of Chapter 26 Traffic and Transport of the ES.</p> <p>Construction activities would normally be conducted during Monday to Friday working hours of 7am to 7pm and Saturday working hours of 7am to 1pm. Working hours are not proposed for Sundays or Bank Holidays. Exceptions to these working hours can be found in Section 6.9 of Chapter 6 Project Description of the ES.</p>
	<p>Cable depth</p> <ul style="list-style-type: none"> Cable depth should be a minimum of 1.2 metres to enable normal agricultural operations. 	Local Community Member	1	<p>Trenching would be the default installation method for onshore cables and the cables will typically be installed in trenches approximately 1.2m below ground level. It is expected that normal agricultural activities would be able to continue over the onshore cable route following installation. Further information about the installation of onshore cables and the onshore cable route operation and maintenance can be found in Sections 6.7.3 and 6.7.4 respectively of Chapter 6 Project Description of the ES.</p>