East Anglia ONE North Offshore Windfarm

Non-Technical Summary

Preliminary Environmental Information
Volume 1
Document Reference: EA1N-DEVWF-ENV-REP-IBR-000269

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Description of Revisions			
Rev	**Page**	**Section**	**Description**
01	-	-	Final draft

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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 ONE North 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 offshore 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 ONE North project	The proposed project consisting of up to 67 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 ONE North 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, these cables will include fibre optic cables.
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.
Met mast	An offshore structure which contains metrological instruments used for wind data acquisition.
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 ONE North 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	The proposed area for National Grid overhead line realignment works.

area	
National Grid substation	The substation (including all of the electrical equipment within it) necessary to connect the electricity generated by the proposed East Anglia ONE North project to the national electricity grid which will be owned by National Grid but is being consented as part of the proposed East Anglia ONE North 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 cables between offshore electrical platforms and landfall jointing bay.
Offshore development area	The East Anglia ONE North 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, these cables will include fibre optic cables.
Offshore infrastructure	All of the offshore infrastructure including wind turbines, platforms, and cables.
Offshore platform	A collective term for the construction operation and maintenance platform and the offshore electrical platforms.
Onshore cable corridor	The corridor within which the onshore cable route will be located.
Onshore cable route	This is the construction swathe within the 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 ONE North project from landfall to the connection to the national electricity grid.
Onshore substation	The East Anglia ONE North substation and all of the electrical equipment, both within and connecting to the National Grid infrastructure.
Onshore substation location	The proposed location of the onshore substation for the proposed East Anglia ONE North project.
Platform link cable	Electrical cable which links one or more offshore platforms, these cables will include fibre optic cables.
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.

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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 ONE North Offshore Windfarm (also known as the proposed East Anglia ONE North project). It provides a summary of the proposed East Anglia ONE North 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 ONE North project on the environment, from construction, operation and decommissioning.

2. The proposed East Anglia ONE North project is a Nationally Significant Infrastructure Project (NSIP). Consent to construct, operate and decommission the proposed East Anglia ONE North 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 ONE North project, from construction through to decommissioning. The Environmental Statement (ES) will detail the finalised EIA for the proposed East Anglia ONE North 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.

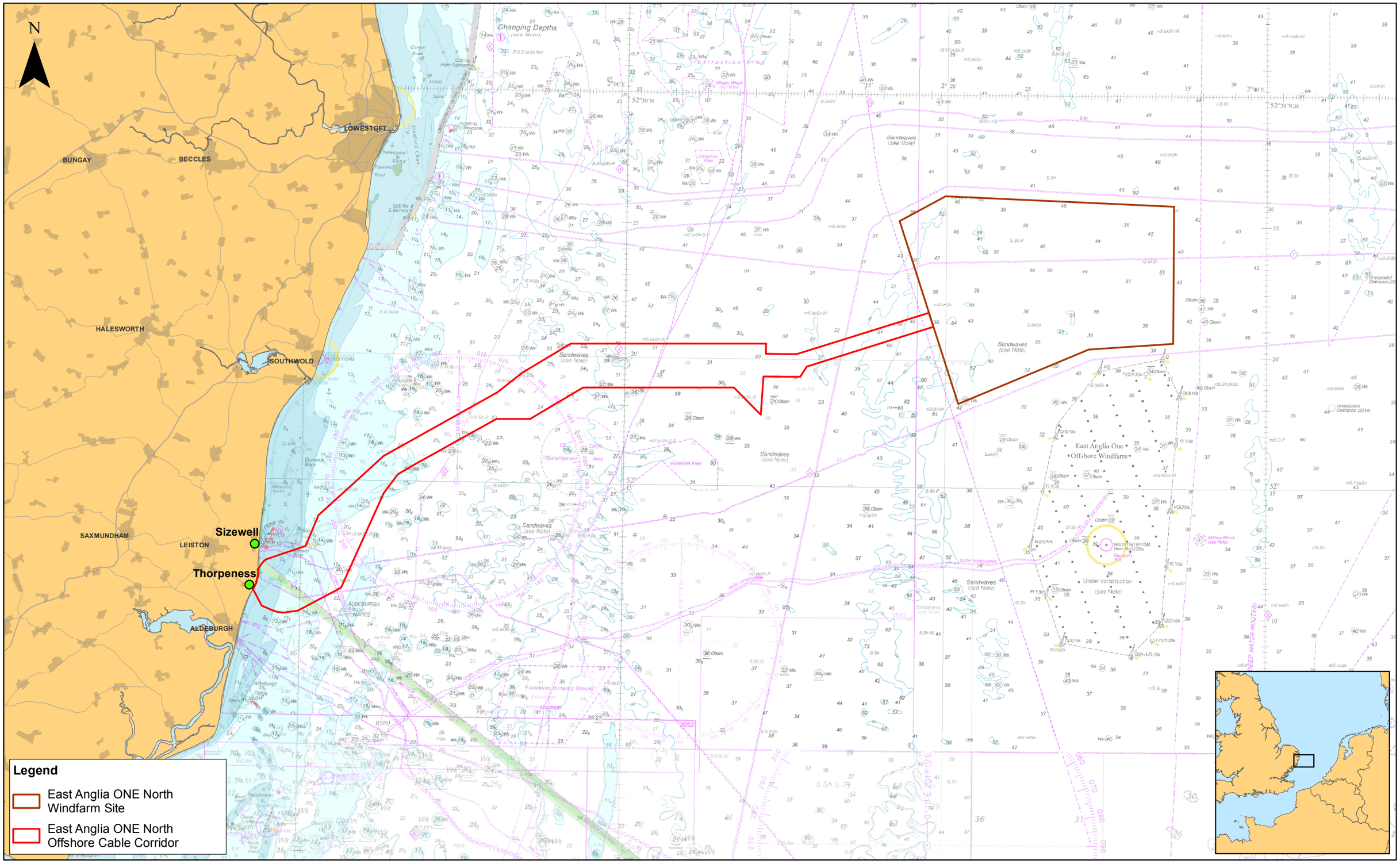
3. The East Anglia ONE North offshore windfarm site is located in the southern North Sea, approximately 36km from its nearest point to the port of Lowestoft and 42km from Southwold. The proposed East Anglia ONE North project will have an operational capacity of up to 800MW[1], which is enough to power approximately 659,000[2] UK households.

4. The proposed East Anglia ONE North 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 (800) 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 659,922 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 ONE North 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_one_north.aspx



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1	10/01/2019	FC	First Issue.		Checked:	KC	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.	
Rev	Date	By	Comment		Approved:	PP		

East Anglia ONE North

Proposed East Anglia ONE North Project Offshore Development Area

Drg No	EA1N-DEV-DRG-IBR-000477
Rev	1
Date	10/01/19
Figure	1

Datum: WGS 1984 Projection: Zone 31N

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Legend

- Proposed Onshore Development Area
- National Grid Overhead Line Realignment Works Area

East Anglia ONE North Proposed Onshore Development Area

- Landfall Study Area
- Onshore Cable Corridor Study Area
- Onshore Substation and National Grid Infrastructure Refined Area of Search

Offsite Highway Works

- Indicative Offsite Highway Works (AIL Structures)
- Indicative Offsite Highway Works (junction improvement)

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Rev	Date	By	Comment
1	10/01/2019	FC	First Issue.

Prepared: FC
Checked: PW
Approved: AH

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East Anglia ONE North

East Anglia ONE North and East Anglia TWO Proposed Onshore Development Area

Drg No	EA1N-DEV-DRG-IBR-000478
Rev	1
Date	10/01/19
Figure	2

Coordinate System: BNG Datum: OSGB36

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1.2 Who is Developing the Project

6. The proposed East Anglia ONE North project is being developed by East Anglia ONE North 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 ONE North 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 homes[3] 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 TWO project is also in the pre-application stage and its application programme runs in parallel with the proposed East Anglia ONE North 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 ONE North and East Anglia TWO projects. At this stage it is not known whether both projects would be constructed simultaneously or

[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.

sequentially. Therefore the onshore topic assessments will include two cumulative assessment scenarios 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 ONE North 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 ONE North 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 ONE North 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 2030[4]. The proposed East Anglia ONE North project will also contribute to the economy by providing jobs during all phases of the proposed East Anglia ONE North project. A detailed analysis of the socio-economic benefits of the proposed East Anglia ONE North 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 ONE North 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.

[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.

14. ***Chapter 4 Site Selection and Assessment of Alternatives*** of the PEIR details the relevant stages of this process.

15. The location of the East Anglia ONE North 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 ONE North and East Anglia TWO 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 ONE North 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 ONE North 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 coastline north of Thorpeness.

17. Potential offshore cable routeing options between the East Anglia ONE North windfarm site and landfall location were identified and an assessment was undertaken to better understand the risks associated with each of these routeing 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 the identification of a potential offshore cable route option for the proposed East Anglia ONE North project which allowed for connection via the northern tip of the East Anglia TWO windfarm site, i.e. enabling a potential shared cable corridor for the two projects, with the route making landfall at Thorpeness.

18. The location of the proposed East Anglia ONE North 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 substation. 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 ONE North 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 ONE North 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 ONE North 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 ONE North 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 ONE North 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 ONE North 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 ONE North 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 ONE North, 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 ONE North 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 ONE North 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 ONE North 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 ONE North Project

39. The offshore development area of the proposed East Anglia ONE North 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 ONE North 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 ONE North project are given in ***Plate 2.1***.

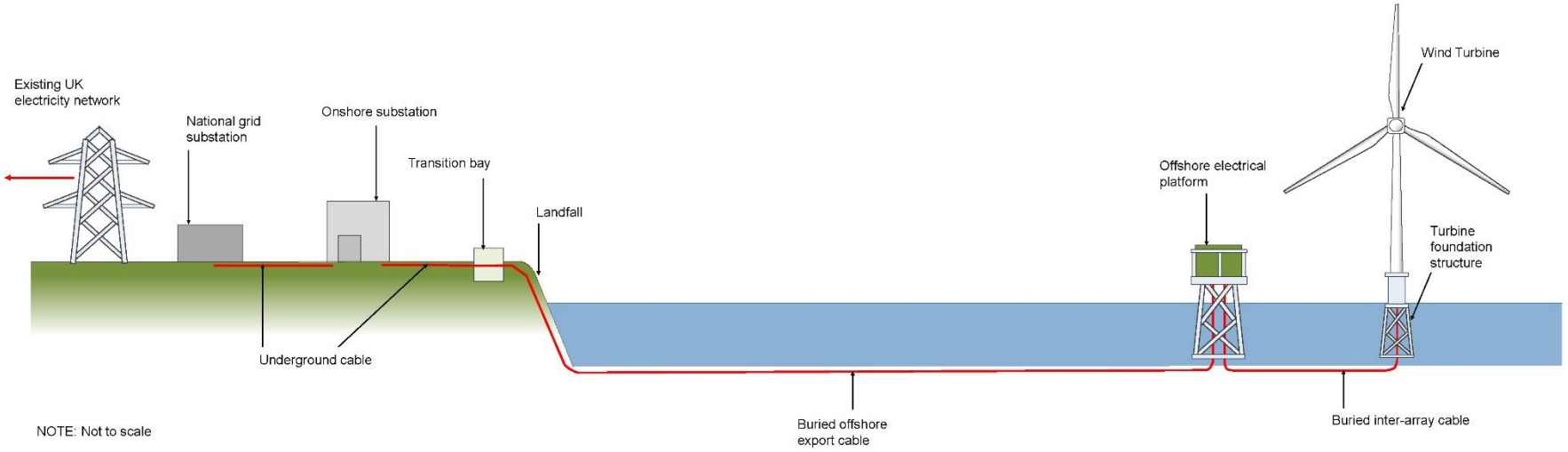

Plate 2.1 Key components of the proposed East Anglia ONE North project

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 (including bank holidays) will. However, evening or full weekend working may 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 ONE North 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 ONE North windfarm site is located in the southern North Sea, approximately 36 kilometres (km) from its nearest point to the port of Lowestoft and 42km from Southwold. The proposed East Anglia ONE North project would consist of up to 67 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 ***Plate 2.3*** 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***.

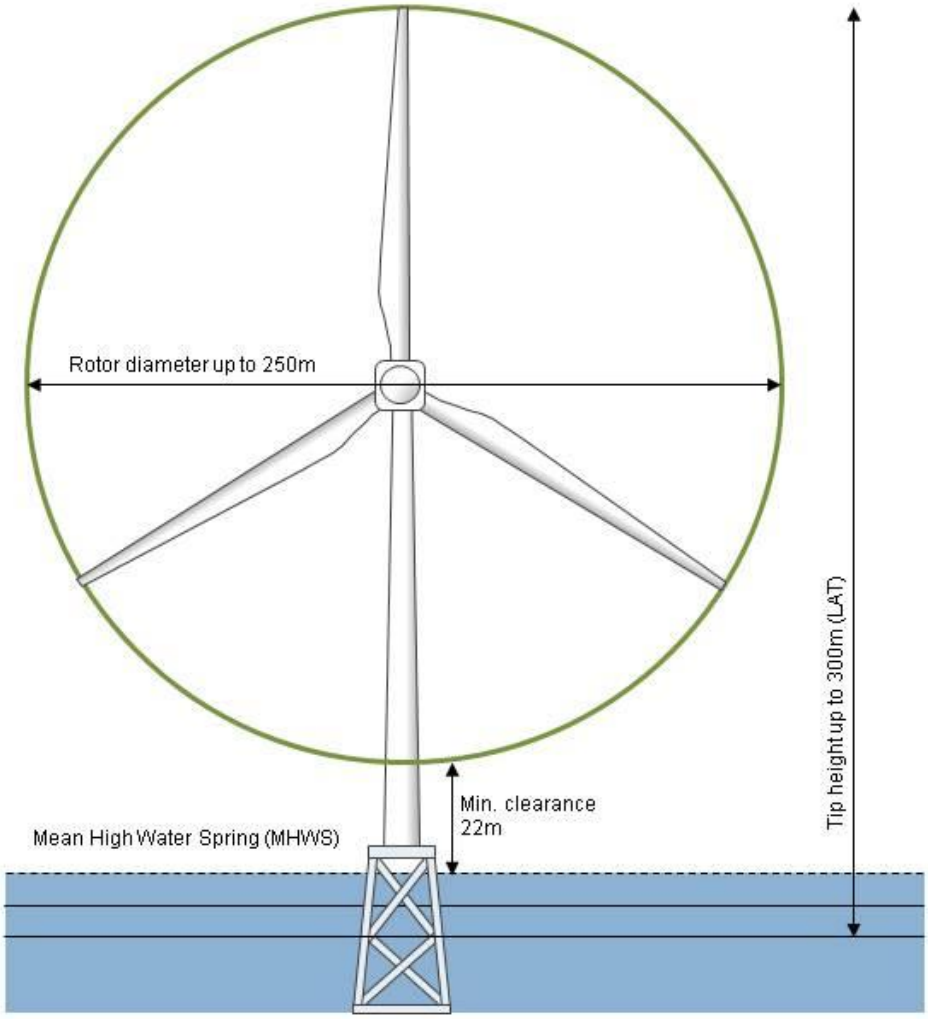

Plate 2.2 Example of a wind turbine to be used in the East Anglia ONE North windfarm site

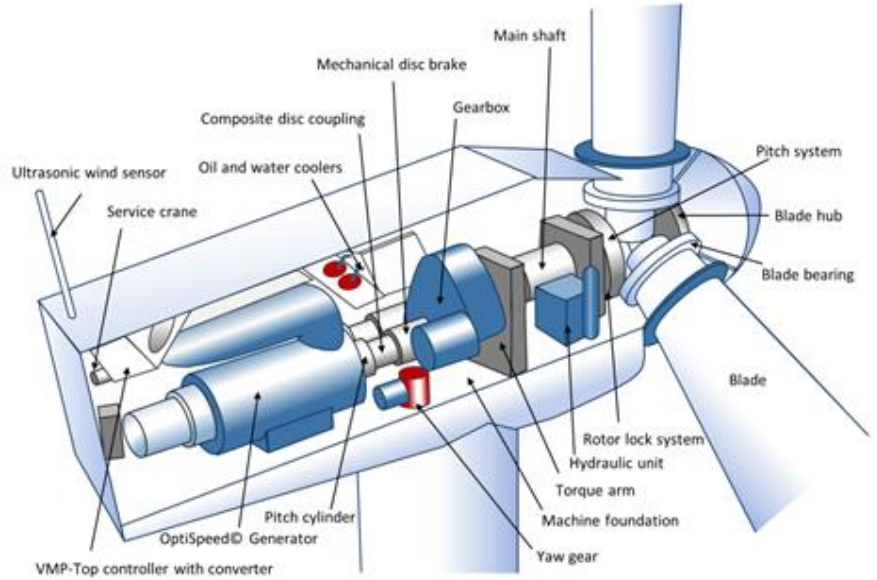

Plate 2.3 General Internal Structure of a Wind Turbine Hub

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 ONE North project.

Table 2.1 East Anglia ONE North Key Offshore Parameters

Parameter	Specification
Maximum number of wind turbines	67
East Anglia ONE North windfarm site area	208km^2
East Anglia ONE North windfarm site water depth range	33 - 67m
Distance from East Anglia ONE North windfarm site to shore (closest point of site to Lowestoft)	36km
Maximum offshore cable corridor area	133km^2
Maximum number of export cables	Two

Parameter	Specification
Maximum cable lengths	• Inter-array 200km • Platform link 75km • Export 152km
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***.

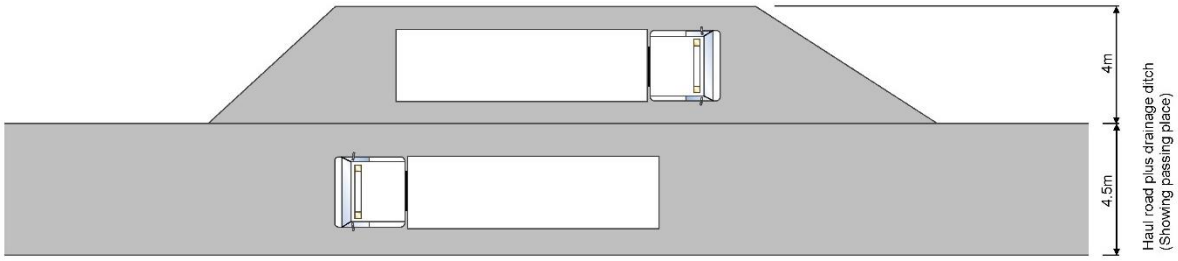

Plate 2.7 Cable route haul road schematic

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 TWO 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***).

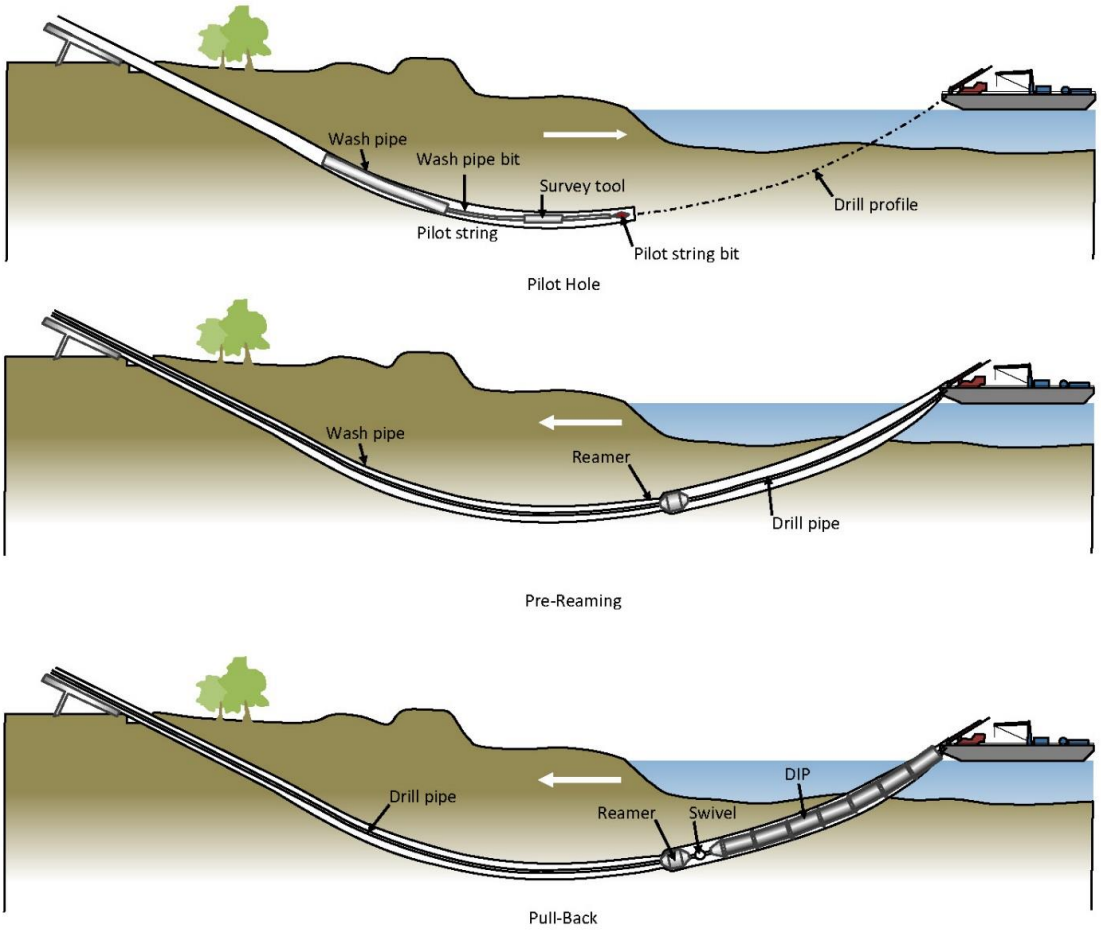

Plate 2.8 HDD working method at landfall

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) to mitigate the impact on the designated site.

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

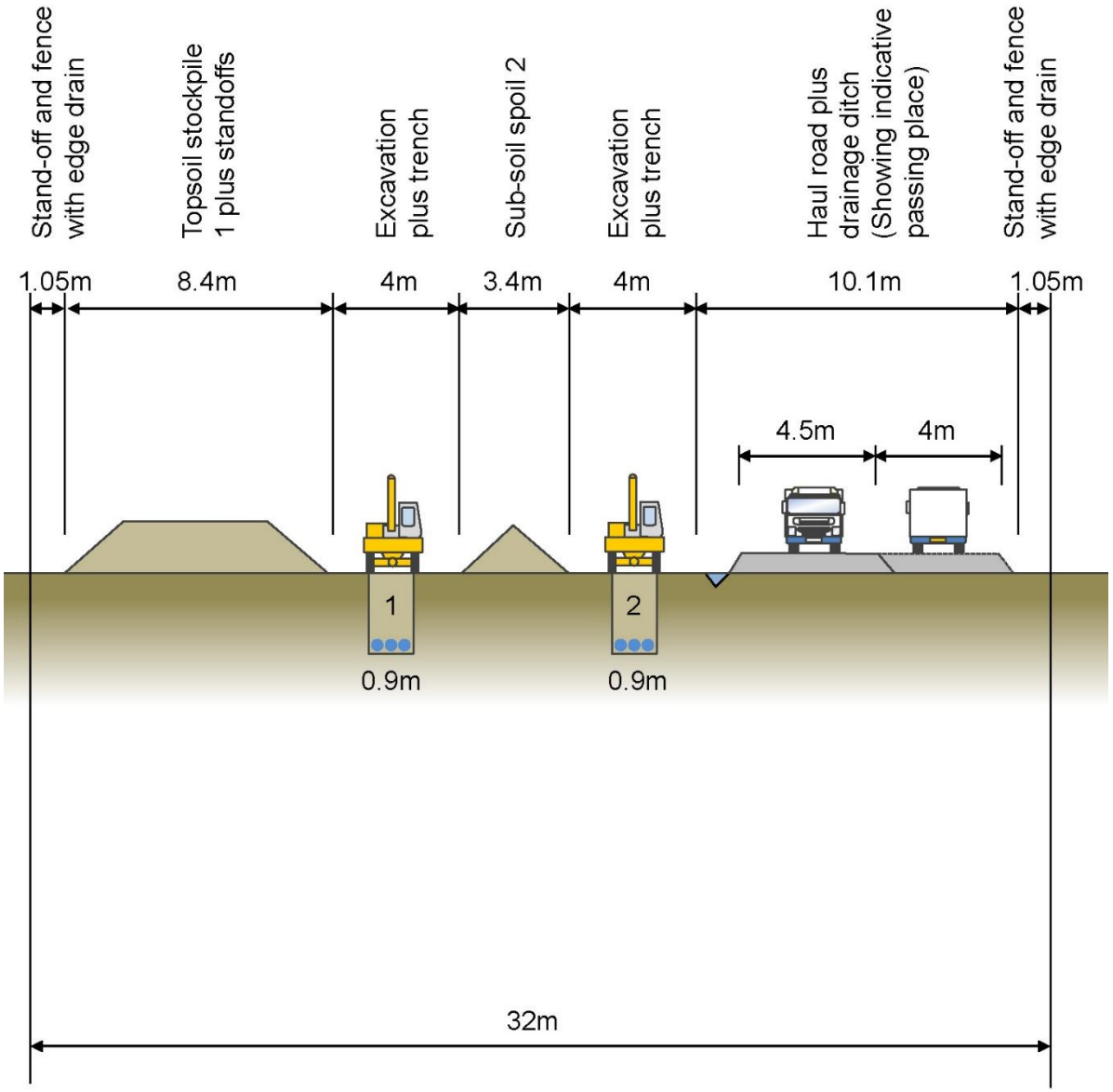

Plate 2.9 Indicative cable trenching arrangement and working area

64. A number of CCS 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 ONE North 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 36,100m^2 (190m x 190m). A schematic of the onshore substation is illustrated in ***Plate 2.10***.

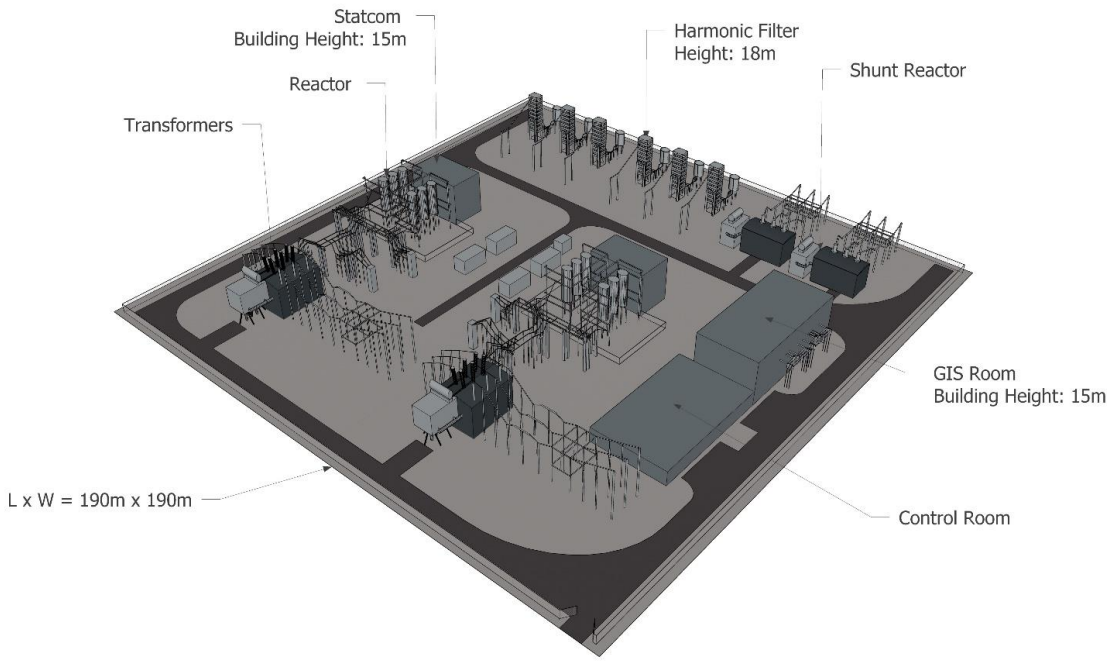

Plate 2.10 East Anglia ONE North Indicative Onshore Substation Model

66. In order to accommodate the electricity produced by the proposed East Anglia ONE North 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 ONE North and East Anglia TWO projects. Other overhead line pylons 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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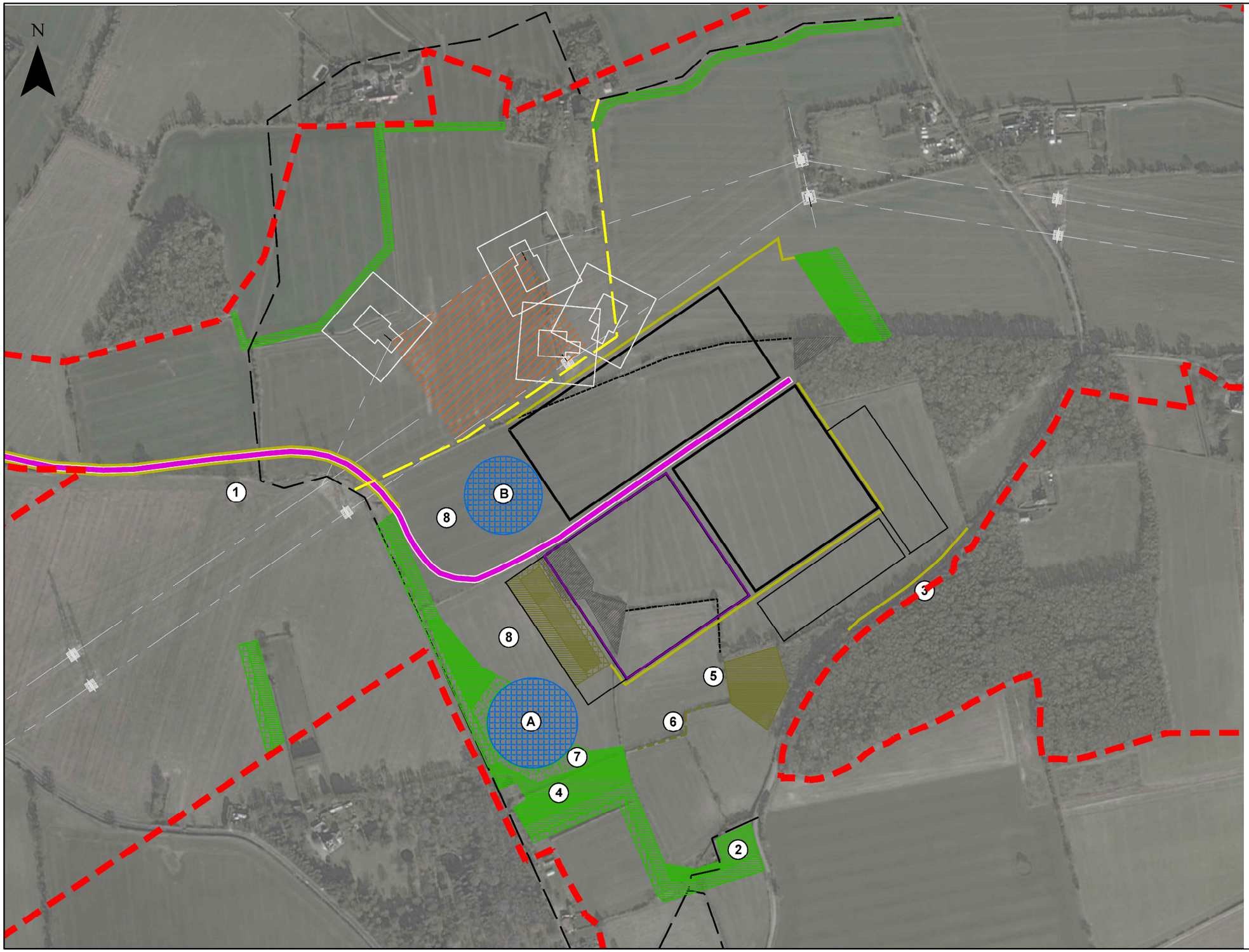

Proposed Onshore Development Area

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):

1. Permanent access road to be hedge lined, making use of existing hedge where possible.
2. Proposed new screening woodland links or extends areas of existing woodland to create continuous habitat corridors.
3. Additional hedge and hedgerow tree planting is proposed along the western edge of Grove Road.
4. Additional screening woodland is proposed to the north of Friston which, in combination with the existing hedgerows, provides a layered screening approach.
5. Where possible existing hedgerows are to be protected, retained and incorporated as part of a layered mitigation screening approach.
6. Any hedgerows which are removed from within the cable route corridor are to be replanted post construction.
7. 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.
8. Non wooded areas surrounding SUDS to be converted to species rich grassland.

SCOTTISHPOWER RENEWABLES

Rev	Date	By	Comment
2	10/12/2018	LA	Second Issue (OPEN)
1	23/11/2018	LA	First Issue (OPEN)

Prepared: LA
Checked: SM
Approved: LT

1:5,000
Scale @ A3

0 50 100 200 m

East Anglia ONE North

Onshore Substation – Indicative Landscape Mitigation Plan

Drg No	EA1N-DEV-DRG-IBR-000481
Rev	2
Date	10/12/18
Figure	3

Datum: OSGB 1936
Projection: BNG

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70. ***Table 2.2*** shows the key onshore parameters of the proposed East Anglia ONE North project.

Table 2.2 East Anglia ONE North 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 temperate 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 ONE North 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 ONE North 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 ONE North 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 ONE North 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 ONE North 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 59m below LAT within the East Anglia ONE North 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 ONE North 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 TWO 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 ONE North 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 ONE North 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 offshore windfarms (including East Anglia TWO) 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 ONE North windfarm site is located) and offshore cable corridor area were conducted between 2010 and 2018.

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 ONE North 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 at the landfall. 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 TWO 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 ONE North offshore development area.

88. The data show that over 100 species of fish and shellfish may be present within the East Anglia ONE North 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 ONE North project.

89. The assessment concluded that the proposed East Anglia ONE North 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 ONE North 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 ONE North 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.

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 ONE North 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 ONE North 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 ONE North project.

97. The conclusion of the assessment was that the proposed East Anglia ONE North project is predicted to have minor impacts on birds. There is the potential for effects of the proposed East Anglia ONE North 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 ONE North 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 ONE North 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 ONE North 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 ONE North 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 ONE North 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 ONE North 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 ONE North 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.

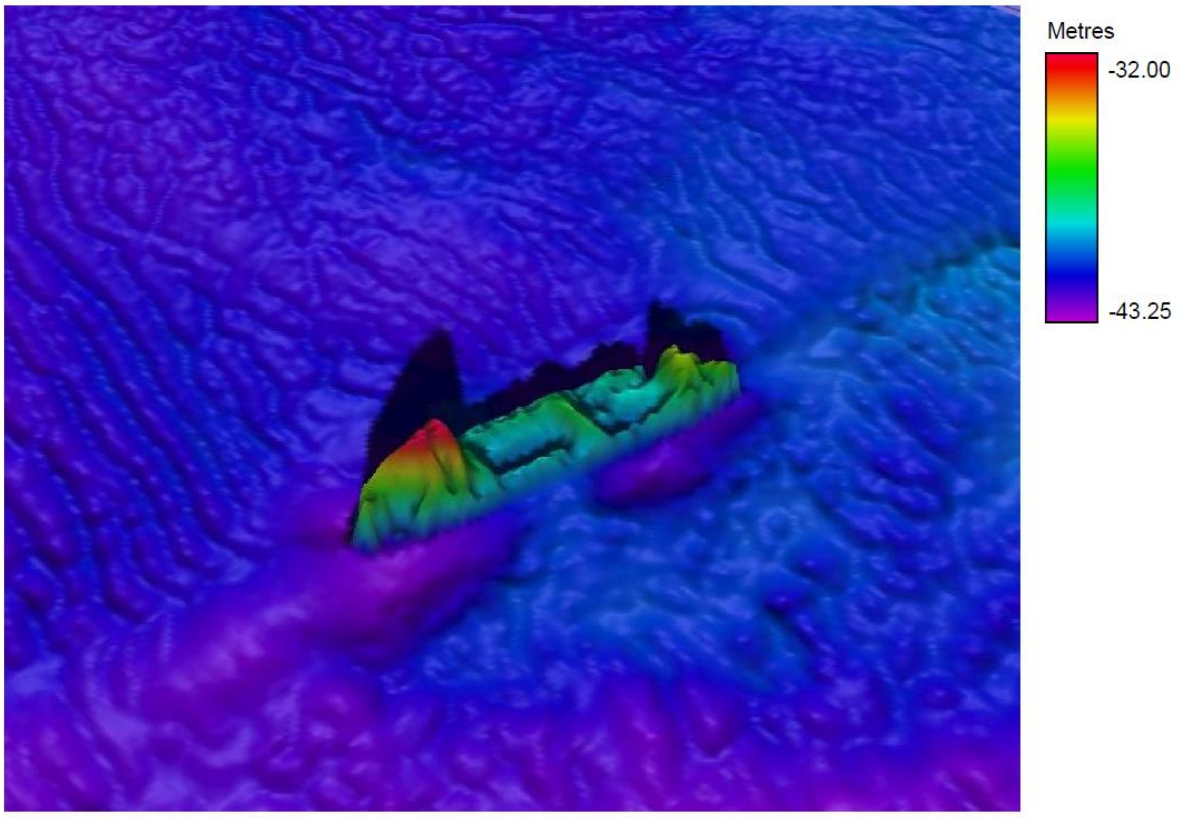

Plate 3.1 Example of ship wreck located during offshore surveys

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 ONE North 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 ONE North 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 and pipeline 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 ONE North 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 TWO 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 TWO 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 ONE North 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 greater than minor, 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 TWO project and Sizewell C New Nuclear Power Station) were assessed as no greater than minor.

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 ONE North project on drainage, agricultural land, soil quality, Environmental

Stewardship Schemes and utilities. Provided mitigation measures are put in place, the proposed East Anglia ONE North 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 TWO 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.

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 ONE North 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 TWO 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 work is undertaken within 200m of the SPA and SSSI during the breeding season. With mitigation, the proposed East Anglia ONE North 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 TWO 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 Raidsend (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 ONE North 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 TWO 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 ONE North 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 ONE North 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 ONE North project would be those from the onshore substation and National Grid substation. The Applicant will provide a final design of the proposed East Anglia ONE North 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 TWO 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 ONE North 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 no greater than minor.

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 ONE North 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 TWO project and Sizewell C New Nuclear Power Station) were assessed as being no greater than with the proposed East Anglia ONE North 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 ONE North project was undertaken. Impacts associated with offshore elements of the proposed East Anglia ONE North 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 ONE North 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 TWO 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 ONE North 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 (approximately 39km from the East Anglia ONE North 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 between 15% and 26% of the time under conditions of excellent visibility. Moving further from the East Anglia ONE North windfarm site, the percentage likelihood of wind turbine visibility decreases. For example, at the furthest viewpoint surveyed (approximately 49km from the East Anglia ONE North windfarm site), likelihood of visibility of the wind turbines is between 10% and 20% of the time under conditions of excellent visibility.

162. The East Anglia ONE North 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 ONE North project are expected to be no greater than those construction impacts but lower in magnitude.

163. Cumulative seascape impacts were assessed together with the proposed East Anglia TWO project and other existing windfarms. In comparison to the project alone assessment, the cumulative impact assessment found that there were additional seascape, landscape and visual effects arising from the combined assessment.

164. Offshore photomontage visualisations are available to view online at the following link:

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

3.3.2 Landscape and Visual Amenity (LVIA)

165. The potential effects of the onshore infrastructure of the proposed East Anglia ONE North project were assessed for landscape and visual receptors during the construction, operation and decommissioning phases of the proposed East Anglia ONE North 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. 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 (Aldringham 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.

168. 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_one_north.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

Viewpoint		Grid Reference	Distance from the onshore substation	Distance from the National Grid substation
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 N259905	1.1km	1.3km
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

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 ONE North 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 (PRoWs). 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 ONE North project. Tourism and recreation receptors would experience minimal visual impacts and only temporary physical obstruction, noise and traffic impacts.

175. The proposed East Anglia ONE North project would provide significant beneficial employment impacts during both construction and operation phases of the proposed East Anglia ONE North 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 similar in nature and no greater than those construction impacts identified.

176. Cumulative impacts with the proposed East Anglia TWO 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 ONE North 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 ONE North project together with the full PEIR are available online at the following link:

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