



Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects

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Glossary of Acronyms

ALARP	As Low as is Reasonably Practicable
BEIS	Department for Business, Energy and Industrial Strategy
DCO	Development Consent Order
DEP	Dudgeon Offshore Wind Farm Extension Project
EEA	European Economic Area
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
EU	European Union
ETG	Expert Topic Group
FSA	Formal Safety Assessment
HRA	Habitats Regulations Assessment
ICES	International Council for the Exploration of the Sea
INNS	Invasive Non-Native Species
km	Kilometre
LSE	Likely Significant Effect
MMO	Marine Management Organisation
MU	Management Units
NPS	National Policy Statement
OWF	Offshore Wind Farm
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
RBINS	Royal Belgian Institute for Natural Sciences
RHDHV	Royal HaskoningDHV
SEANSE	Strategic Environmental Assessment North Seas Energy
SEP	Sheringham Shoal Offshore Wind Farm Extension Project
SoS	Secretary of State
SVIA	Seascape and Visual Impact Assessment
UK	United Kingdom
UN	United Nations
UNECE	United Nations Economic Commission for Europe

VMS	Vessel Monitoring System
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Glossary of Terms

Dudgeon Offshore Wind Farm Extension Project (DEP)	The Dudgeon Offshore Wind Farm Extension onshore and offshore sites including all onshore and offshore infrastructure.
DEP offshore site	The Dudgeon Offshore Wind Farm Extension consisting of the DEP wind farm site, interlink cable corridors and offshore export cable corridor (up to mean high water springs).
DEP onshore site	The Dudgeon Offshore Wind Farm Extension onshore area consisting of the DEP onshore substation site, onshore cable corridor, construction compounds, temporary working areas and onshore landfall area.
DEP North array area	The wind farm site area of the DEP offshore site located to the north of the existing Dudgeon Offshore Wind Farm
DEP South array area	The wind farm site area of the DEP offshore site located to the south of the existing Dudgeon Offshore Wind Farm
DEP wind farm site	The offshore area of DEP within which wind turbines, infield cables and offshore substation platform/s will be located and the adjacent Offshore Temporary Works Area. This is also the collective term for the DEP North and South array areas.
European site	Sites designated for nature conservation under the Habitats Directive and Birds Directive. This includes candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and Special Protection Areas, and is defined in regulation 8 of the Conservation of Habitats and Species Regulations 2017.
Evidence Plan Process (EPP)	A voluntary consultation process with specialist stakeholders to agree the approach, and information to support, the EIA and HRA for certain topics.
Expert Topic Group (ETG)	A forum for targeted engagement with regulators and interested stakeholders through the EPP.
Infield cables	Cables which link the wind turbine generators to the offshore substation platform(s).
Interlink cables	Cables linking two separate project areas. This can be cables linking: <ul style="list-style-type: none"> 1) DEP South array area and DEP North array area 2) DEP South array area and SEP 3) DEP North array area and SEP



	<p>1 is relevant if DEP is constructed in isolation or first in a phased development.</p> <p>2 and 3 are relevant where both SEP and DEP are built.</p>
Interlink cable corridor	This is the area which will contain the interlink cables between offshore substation platform/s and the adjacent Offshore Temporary Works Area.
Landfall	The point at the coastline at which the offshore export cables are brought onshore, connecting to the onshore cables at the transition joint bay above mean high water
Offshore export cable corridor	This is the area which will contain the offshore export cables between offshore substation platform/s and landfall, including the adjacent Offshore Temporary Works Area.
Offshore export cables	The cables which would bring electricity from the offshore substation platform(s) to the landfall. 220 – 230kV.
Offshore Temporary Works Area	An Offshore Temporary Works Area within the offshore Order Limits in which vessels are permitted to carry out activities during construction, operation and decommissioning encompassing a 200m buffer around the wind farm sites and a 750m buffer around the offshore cable corridors. No permanent infrastructure would be installed within the Offshore Temporary Works Area.
Onshore cable corridor	The area between the landfall and the onshore substation sites, within which the onshore cable circuits will be installed along with other temporary works for construction.
Order Limits	The area subject to the application for development consent, including all permanent and temporary works for SEP and DEP.
Sheringham Shoal Offshore Wind Farm Extension site	Sheringham Shoal Offshore Wind Farm Extension offshore lease area.
Sheringham Shoal Offshore Wind Farm Extension Project	The Sheringham Shoal Offshore Wind Farm Extension site as well as all onshore and offshore infrastructure.
The Applicant	Equinor New Energy Limited

29 TRANSBOUNDARY IMPACTS

29.1 Introduction

1. This chapter of the Environmental Statement (ES) provides a summary of the potential transboundary impacts of the proposed Sheringham Shoal Offshore Wind Farm Extension Project (SEP) and Dudgeon Offshore Wind Farm Extension Project (DEP). It demonstrates how consideration has been made of transboundary impacts as required by The United Nations Economic Commission for Europe (UNECE) Convention (the Espoo Convention), as implemented by the European Union (EU) Directive 2011/92/EU (as amended by Directive 2014/52/EU) (the EIA Directive) and transposed into UK law by way of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations).
2. This chapter draws information from, and should be read in conjunction with, the following:
 - **Chapter 9 Fish and Shellfish Ecology;**
 - **Chapter 10 Marine Mammal Ecology;**
 - **Chapter 11 Offshore Ornithology;**
 - **Chapter 12 Commercial Fisheries;**
 - **Chapter 13 Shipping and Navigation;**
 - **Chapter 14 Offshore Archaeology and Cultural Heritage;**
 - **Chapter 20 Onshore Ecology and Ornithology;**
 - **Chapter 21 Onshore Archaeology and Cultural Heritage;** and
 - **Chapter 25 Seascape and Visual Impact Assessment.**

29.2 Policy, Legislation and Guidance

3. There are numerous items of legislation, guidance and policy applicable to transboundary impacts. The following sections provide detail on key pieces of international and UK legislation, policy and guidance which are relevant to this chapter.

29.2.1 Legislation

4. Schedule 4 paragraph 5 of the EIA Regulations states:

“The description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development.”
5. In line with this requirement, a description of likely significant transboundary effects is provided in each technical chapter of the ES and summarised in this chapter.
6. The UNECE Convention on EIA in a Transboundary Context (the Espoo Convention) requires that assessments are extended across borders between Parties of the Convention when a planned activity may cause significant adverse transboundary impacts.



7. Regulation 32 of the EIA Regulations sets out procedures to address issues associated with a development that might have a significant impact on the environment of a European Member State. The procedures involve providing information to the Member State and for the Planning Inspectorate to enter into consultation with that State regarding the potential significant impacts of the development and the associated mitigation measures. Further advice on transboundary issues, in particular with regard to timing, process and consultation is given in version 6 of Planning Inspectorate Advice Note Twelve: Transboundary Impacts and Processes (PINS, 2020).

29.2.2 Guidance

8. Guidance that is applicable to a specific assessment is identified in the relevant chapters of this ES, as listed in [Section 29.1](#).

29.2.3 Policy

9. The specific requirements of the National Policy Statements (NPS) in relation to the transboundary impact assessment, relevant to SEP and DEP, are summarised in [Table 29-1](#).

10. It is noted that NPS EN-1, EN-3 and EN-5 are in the process of being revised. A draft version of each NPS was published for consultation in September 2021. Consultation closed November 2021 (Department for Business, Energy and Industrial Strategy (BEIS), 2021). Although the new NPSs are in draft form they are considered to be important and relevant for the purpose of decision-making and as such a review of the draft versions has been undertaken in the context of the ES.

Table 29-1: NPS Assessment Requirements

NPS Requirement	NPS Reference	Section Reference
EN-1 – Draft Overarching NPS for Energy		
The Regulations require an assessment of the likely significant effects (LSE) of the proposed project on the environment, covering the direct effects and any indirect, secondary, cumulative, transboundary, short, medium, and long-term, permanent and temporary, positive and negative effects at all stages of the project, and also of the measures envisaged for avoiding or mitigating significant adverse effects.	Draft EN-1, paragraph 4.2.1	Section 29.6 , Section 29.7 and Chapter 9 Fish and Shellfish Ecology , Chapter 10 Marine Mammal Ecology , Chapter 11 Offshore Ornithology , Chapter 12 Commercial Fisheries , Chapter 13 Shipping and Navigation , Chapter 14 Offshore Archaeology and Cultural Heritage , Chapter 20 Onshore Ecology and Ornithology , Chapter 21 Onshore Archaeology and Cultural Heritage , Chapter 25 Seascape and Visual Impact Assessment
EN-3 – NPS for Renewable Energy Infrastructure		
In some circumstances, transboundary issues may be a	EN-3, paragraph 2.6.124 / Draft EN-3 paragraph 2.31.3	Section 29.6.5 and Chapter 12 Commercial Fisheries



NPS Requirement	NPS Reference	Section Reference
consideration as fishermen from other countries may fish in waters within which offshore wind farms are sited.		
In some circumstances, vessels from other countries may sail in waters within which offshore wind farms are sited.	EN-3, paragraph 2.6.152 / Draft EN-3 paragraph 2.33.5	Section 29.6.6 & Chapter 13 Shipping and Navigation

29.3 Consultation

11. An EIA Scoping Report for SEP and DEP was submitted to the Planning Inspectorate on 8th October 2019 (Royal HaskoningDHV (RHDHV), 2019) and the preliminary findings from the EIA process were reported within a Preliminary Environmental Information Report (PEIR), published in April 2021 (RHDHV, 2021). In addition, consultation regarding the approach to transboundary impacts has been conducted through a number of Expert Topic Groups (ETG) as part of the Evidence Plan Process (EPP), and through targeted consultation with particular stakeholders not engaged through the EPP. The SEP and DEP consultation process is described further in **Chapter 5 EIA Methodology** and the **Consultation Report** (document reference 5.1).
12. Under the Espoo Convention (1991), where a development is likely to cause ‘significant adverse transboundary impact’, relevant European Economic Area (EEA) Member States should be notified as early as possible, giving them the opportunity to participate in relevant EIA procedures. Following the request for a Scoping Opinion for SEP and DEP, the Planning Inspectorate issued a Transboundary Impacts Screening in January 2020 (First Transboundary Screening; PINS, 2020), in accordance with Regulation 32 of the EIA Regulations (further details in **Section 29.5** below).
13. Further to this, in August 2020, the Applicant invited stakeholders from Belgium, France and the Netherlands to comment on the Habitats Regulations Assessment Screening Report (RHDHV, 2020). Only the Netherlands responded, stating that they had no comments on the document.
14. In addition to the pre-application consultation, it is expected that further statutory transboundary consultation will be undertaken by the Planning Inspectorate in accordance with Regulation 32 of the EIA Regulations, if and when it accepts the Development Consent Order (DCO) application for examination.

29.4 Assessment Methodology

29.5 Transboundary Impact Assessment Scoping Outcomes

18. Transboundary impacts were scoped out in the Scoping Opinion (PINS, 2019) for a number of topics as detailed in **Table 29-2**. Only those topics that remained scoped in have been taken forward in the EIA process, with the assessment outcomes summarised in **Section 29.6** (offshore topics), **Section 29.7** (onshore topics) and **Section 29.8** (wider scheme aspects).



19. In addition, the ‘First Transboundary Screening’ undertaken by PINS on receipt of the Scoping Report (PINS, 2020) identified the Netherlands and Belgium for transboundary issues notification under Regulation 32, due to impacts on commercial fisheries. It is understood that only Belgium (Directorate-General Environment) responded to this and confirmed their intention to participate in the consultation process with regard to transboundary impacts (email response to PINS dated 24th January 2020).

Table 29-2: Transboundary Impact Assessment Scoping Opinion Outcomes

Topic	Scoping outcome (PINS, 2019)
Chapter 6 Marine Geology, Oceanography and Physical Processes	Scoped out
Chapter 7 Marine Water and Sediment Quality	Scoped out
Chapter 8 Benthic Ecology	Scoped out*
Chapter 9 Fish and Shellfish Ecology	Scoped in
Chapter 10 Marine Mammal Ecology	Scoped in
Chapter 11 Offshore Ornithology	Scoped in
Chapter 12 Commercial Fisheries	Scoped in
Chapter 13 Shipping and Navigation	Scoped in
Chapter 14 Offshore Archaeology and Cultural Heritage	Scoped in
Chapter 15 Aviation and Radar	Scoped out
Chapter 16 Petroleum Industry and Other Marine Users	Scoped out
Chapter 17 Onshore Ground Conditions and Contamination	Scoped out
Chapter 18 Water Resources and Flood Risk	Scoped out
Chapter 19 Land Use, Agriculture and Recreation	Scoped out
Chapter 20 Onshore Ecology and Ornithology	Scoped in
Chapter 21 Onshore Archaeology and Cultural Heritage	Scoped in
Chapter 22 Air Quality	Scoped out
Chapter 23 Noise and Vibration	Scoped out
Chapter 24 Traffic and Transport	Scoped out
Chapter 25 Seascape and Visual Impact Assessment	Scoped in
Chapter 26 Landscape and Visual Impact Assessment	Scoped out
Chapter 27 Socio-Economics and Tourism	Scoped out
Chapter 28 Health	Scoped out

*with the exception of the transmission potential for Invasive Non-Native Species (INNS) during the operational phase following the advice from the Marine Management Organisation (MMO) on the PEIR.



29.6 Offshore Transboundary Impact Assessment Summary

20. This section presents a summary of the potential impacts on offshore transboundary receptors, where they are scoped in.

29.6.1 Benthic Ecology

21. Transboundary impacts for benthic ecology have been scoped out of the assessment in line with the recommendation of the Planning Inspectorate in the Scoping Opinion (PINS, 2019), with the exception of the transmission potential for INNS during the operational phase following advice from the MMO on the PEIR.

22. SEP and DEP are a minimum of 187km from any international territory boundary. The risk of spreading INNS e.g. in vessel ballast water or as biofouling on the hulls of vessels will be mitigated by employing biosecurity measures in accordance with the following relevant regulations and guidance:

- International Convention for the Prevention of Pollution from Ships (MARPOL). The MARPOL sets out appropriate vessel maintenance;
- The Environmental Damage (Prevention and Remediation) (England) Regulations 2015, which set out a polluter pays principle where the operators who cause a risk of significant damage or cause significant damage to land, water or biodiversity will have the responsibility to prevent damage occurring, or if the damage does occur will have the duty to reinstate the environment to the original condition; and
- The International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention), which provide global regulations to control the transfer of potentially invasive species.

23. These commitments would be secured in the Project Environmental Management Plan (PEMP) (in accordance with the **Outline PEMP** (document reference 9.10) submitted with the DCO application) which will be agreed prior to the start of construction. Therefore, no detectable transboundary impacts from the spread of INNS from vessels operating at SEP and DEP are expected.

24. With regards to the potential for SEP and DEP introduced artificial hard substrates acting as 'stepping stones' enabling the spread of INNS, given SEP and DEP are a minimum of 187km away from any international territory boundary it is not expected any INNS from SEP and DEP specifically would pass over a territorial boundary and any potential impact occurring from this would be so small as to be undetectable when considered against natural variation.

25. There is consideration of stepping stone potential from SEP and DEP to other artificial structures which could then lead to a transboundary impact; however, given SEP and DEP are surrounded by nearby artificial hard substrates such as from Sheringham Shoal, Dudgeon, Triton Knoll, Race Bank, Norfolk Vanguard and Scroby Sands OWFs, the potential for transboundary impacts from the spread of INNS between artificial hard substrates is already present and the addition of more artificial hard substrate will not materially increase that spreading potential.

Therefore, no detectable transboundary impacts from the spread of INNS from SEP and DEP introduced artificial hard substrates are expected.

29.6.2 Fish and Shellfish Ecology

26. The distribution of the populations of fish and shellfish species assessed are independent of national geographical boundaries. The assessment for SEP and DEP has been undertaken taking into account the distribution of fish stocks and populations irrespective of national jurisdictions. As such, potential transboundary effects are considered as an inherent aspect of the main assessment. Regardless, the assessments have demonstrated that the spatial extent of impacts from the construction, operation and decommissioning of SEP and DEP do not stretch beyond UK waters and have been assessed as not significant in all cases. It should also be noted that the anticipated impacts on fish and shellfish ecology are generally localised in nature, being restricted to the project boundaries and surrounding area.
27. In addition, based on the Annex II species that are known to either migrate through, or spend part of their lifecycle in, the North Sea, the Habitats Regulations Assessment (HRA) screening considered all designated sites within the Southern North Sea (and within 250km of the Projects) which have migratory fish species listed in Annex II of the Habitats Directive as an interest feature. Four sites were identified in this zone; however, the outcome of the screening exercise (and subsequent consultation) concluded no LSE for any of the sites identified, screening out all of the sites from the need for Appropriate Assessment. As such, no transboundary impacts are anticipated with respect to fish and shellfish ecology.

29.6.3 Marine Mammal Ecology

28. The highly mobile nature of the marine mammal species considered in the assessment means that there is the potential for transboundary impacts. This has been taken into account throughout the assessment, as the study area for each species is based on their relevant Management Units (MU) (or area within which the same individuals are considered to be part of one larger overall population). The MUs (and therefore reference populations) for each species cover an area that is wider than the UK (**Table 29-3**). This approach has been taken through all of the marine mammal assessments.

Table 29-3: Other Countries Considered in the Marine Mammal Assessments Through the Relevant MU Reference Populations

Country	Marine mammal species	Inclusion within assessments
France Belgium Sweden Norway	Harbour porpoise	Part of the North Sea MU for harbour porpoise.
	White-beaked dolphin and minke whale	Part of the Celtic and Greater North Seas MU for both white-beaked dolphin and minke whale.
	Bottlenose dolphin	Part of the Greater North Sea MU for bottlenose dolphin.



Country	Marine mammal species	Inclusion within assessments
	Grey seal and harbour seal	Not part of the grey seal and harbour seal reference population area, and therefore no potential for transboundary impacts.
Netherlands Germany Denmark	Harbour porpoise	Part of the North Sea MU for harbour porpoise.
	White-beaked dolphin and minke whale	Part of the Celtic and Greater North Seas MU for both white-beaked dolphin and minke whale.
	Bottlenose dolphin	Part of the Greater North Sea MU for bottlenose dolphin.
	Grey seal and harbour seal	Part of the reference population area (Wadden Sea region) for both grey seal and harbour seal.

29. There is a significant level of marine development being undertaken, and being planned, by other countries (including Belgium, the Netherlands, Germany and Denmark) in the southern North Sea. Each of these countries have their own independent environmental assessment requirements and controls. As noted above, marine mammals are highly mobile and there is therefore the potential for transboundary impacts, especially with regard to underwater noise; however, these transboundary impacts are considered as an integral part of the marine mammals assessment, as the impacts for all species are based on the relevant MUs and reference populations.
30. Where there is potential for SEP and DEP to impact marine mammals from designated sites in other countries, this is assessed in the **Report to Inform Appropriate Assessment** (document reference 5.4) submitted as part of the DCO application.

29.6.4 Offshore Ornithology

31. The highly mobile nature of many of the bird species considered in the assessment means that there is the potential for transboundary impacts, either in a cumulative sense (i.e. cumulative impacts on the same receptors between SEP and DEP and other projects in other countries) or through impacts on species which are features of designated sites in other countries.
32. With respect to cumulative transboundary impacts, collisions and displacement at offshore wind farms (OWFs) located outside UK territorial waters will occur, potentially increasing the total level of cumulative impact. A limited attempt at quantifying this has recently been made as part of the Strategic Environmental Assessment North Seas Energy (SEANSE) project. Whilst a useful indicator of the level of potential impacts on offshore ornithology receptors beyond UK waters, there are a range of limitations that make the approach unsuitable for impact assessment purposes in its current form.
33. In all cases, the spatial scale and size of seabird reference populations for a transboundary assessment is much larger, although the information is not presently available to enable a detailed quantitative assessment; however, due to the increased size of the relevant reference populations, it is anticipated that the inclusion of non-UK OWFs is highly likely to reduce the overall cumulative impact assessed for each species.

34. Where there is potential for SEP and DEP to impact birds that are features of designated sites in other countries, this is assessed in the **Report to Inform Appropriate Assessment** (document reference 5.4) submitted as part of the DCO application.

29.6.5 Commercial Fisheries

35. **Chapter 12 Commercial Fisheries** has assessed the potential impacts on non-UK registered vessels operating within UK waters. This includes the potential effects on Belgian, Danish, Dutch and French commercial fishing fleets across all impact categories assessed, including exclusion from SEP and DEP and displacement effects. Transboundary impacts within UK waters have therefore been considered as an intrinsic part of the commercial fisheries EIA process, as presented in **Chapter 12 Commercial Fisheries**.
36. Transboundary impacts outside UK waters are limited to potential displacement of fishing effort from SEP and DEP into non-UK Exclusive Economic Zones, namely the Dutch Exclusive Economic Zone (EEZ); however, based on the established fishing grounds targeted by the fleets under assessment, it is not anticipated that displacement effects into the Dutch EEZ would be significant.
37. The 'First Transboundary Screening' undertaken by PINS on receipt of the Scoping Report (PINS, 2020) also identified Belgium in relation to potential commercial fisheries impacts. Landings by Belgian registered vessels for International Council for the Exploration of the Sea (ICES) rectangles 34F1 and 35F1 which contain SEP and DEP are primarily plaice and sole and these were the only species landed in quantities over 2 tonnes between 2012 and 2016. Since a peak in 2013, landings for both plaice and sole have fallen. The landings for each species from these areas at the end of 2016 represented only 0.014% of the total Belgian quota for plaice and 0.015% of the total quota for sole. Beam trawling activity by EU registered vessels is concentrated to the east of the SEP and DEP offshore sites, with the value of landings much higher from ICES rectangles 35F2 and 34F2, and to a lesser extent to the southwest in the area around The Wash. Based on Vessel Monitoring System (VMS) data in 2017 no landings were made by EU beam trawlers within the SEP and DEP areas. Therefore, the SEP and DEP offshore sites are not considered to be an important fishing area for Belgian registered vessels. Most of the impacts of SEP and DEP on Belgian fishing vessels are assessed as negligible during construction, operation and decommissioning. There may be minor adverse impacts on mobile fishing fleets as a whole (including Belgian vessels) due to displacement from the wind farm site leading to gear conflict and increased pressure on adjacent grounds, and due to the potential for gear snagging on cable surface protection; however, given how little fishing effort there is in SEP and DEP by Belgian vessels it is likely that any impacts will be negligible.

29.6.6 Shipping and Navigation

38. Given the international nature of shipping and navigation, as identified in **Chapter 13 Shipping and Navigation**, transboundary impacts are possible. These are assessed in terms of impacts to international shipping routes. This includes effects on main routes with destinations at European ports such as Rotterdam

(Netherlands) and Zeebrugge (Belgium), with a maximum route deviation as a result of SEP and DEP of 4%.

39. It is noted that the route deviations (as identified in **Chapter 13 Shipping and Navigation**) have been raised by one operator, P&O, who highlight the increased distance and fuel costs associated with the deviations. Further consultation with EU member states will be undertaken by the Planning Inspectorate in accordance with Regulation 32 of the EIA Regulations, if and when it accepts the DCO application for examination.
40. As per the operational impacts on main routes, transboundary impacts are expected at a frequent frequency and with a negligible consequence given the minimal deviations that would be required and the embedded mitigation which will be in place to manage operational activities (as detailed in **Chapter 13 Shipping and Navigation**). The transboundary impact has therefore been assessed as moderate adverse significance; however, with mitigation the risk is as low as reasonable practicable (ALARP) within the Formal Safety Assessment (FSA) and therefore not significant in EIA terms.

29.6.7 Offshore Archaeology and Cultural Heritage

41. The North Sea is not the property of any nation, although distinctions are made between territorial waters (the administrative and political division which form part of a particular nation's territory up to 12 nautical miles) and EEZs, the latter representing sea zones prescribed by the United Nations (UN) Convention on the Law of the Sea over which a state has special rights regarding the exploration and use of marine sources. Although SEP and DEP are within the UK's EEZ, any data acquired and archaeologically assessed as part of the project also has the potential to feed into wider research objectives initiated by neighbouring EEZs in the North Sea (most notably, the Dutch and Belgian EEZs).
42. In terms of palaeolandscapes, Doggerland was a landscape of central importance in northern Europe, larger than many current European countries, and boasting a wealth of unexplored archaeology and environmental data vital to our understanding of how past populations met challenges of climate change and sea-level rise. With regard to maritime and aviation archaeology, the North Sea has played host to numerous conflicts, and migration and trade routes, and wrecks and aircraft from multiple nations are known to be present on the seafloor. Therefore, impacts are not restricted to the UK's EEZ, and transboundary effects must be considered.
43. As in the UK, there are a number of research agendas and initiatives focusing on the archaeology of the North Sea from various European states and partnerships. For example, palaeolandscape research in the southern North Sea and the English Channel has been undertaken by the Flanders Marine Institute (platform for marine research), in partnership with the Ghent University, the Royal Belgian Institute for Natural Sciences (RBINS), the Natural History Museum of Rotterdam (the Netherlands) and the University of Bradford (UK) (████████████████████). In the Netherlands, the Cultural Heritage Agency, in conjunction with Rijkswaterstaat (the Dutch maritime and marine management organisation), has commissioned the production of a policy advice map for the North Sea's submerged archaeological landscapes. Much of this



European-wide research and policy has been brought together in in the Coastal Research Library publication Under the Sea: Archaeology and Palaeolandscapes of the Continental Shelf.

44. The potential for integrated research and management represents a positive cumulative, transboundary impact of development-led initiatives across all sectors of the North Sea. Alongside data produced through UK offshore wind farm development, and that of other European nations bordering the North Sea, data sharing across national boundaries has the potential to result in a significant beneficial impact. Should the proposed projects be granted consent, the approach to delivering these transboundary objectives will be established in consultation with key stakeholders, post-consent, so that the potential beneficial effects can be realised by those engaged in marine archaeological research (and the offshore wind farm industry) for both commercial and non-commercial purposes.

29.7 Onshore Transboundary Impact Assessment Summary

45. This section presents a summary of the potential impacts on onshore transboundary receptors, where they are scoped in.

29.7.1 Onshore Ecology and Ornithology

46. The potential for transboundary impacts in relation to onshore ecology and ornithology was initially identified in the Scoping Report (RHDHV, 2019); however, upon further review as part of the preparation of the PEIR (RHDHV, 2021), since there is no international border near SEP and DEP and no pathway for impacts to occur, transboundary impacts have since been scoped out of the assessment and have not been considered further.

29.7.2 Onshore Archaeology and Cultural Heritage

47. The potential for transboundary impacts in relation to onshore archaeology and cultural heritage was initially identified in the Scoping Report (RHDHV, 2019); however, upon further review as part of the preparation of the PEIR (RHDHV, 2021), since there is no international border near SEP and DEP and no pathway for impacts to occur, transboundary impacts have since been scoped out of the assessment and have not been considered further.

29.8 Wider Scheme Aspects Transboundary Impact Assessment Summary

48. This section presents a summary of the potential impacts on transboundary receptors for wider scheme aspects, where they are scoped in.

29.8.1 Seascape and Visual Impact Assessment

49. Transboundary impacts were initially scoped into the Seascape and Visual Impact Assessment (SVIA), as identified in the Scoping Report (RHDHV, 2019); however, upon further review as part of the preparation of the PEIR (RHDHV, 2021), transboundary effects have since been scoped out of the SVIA since the coastlines of other EU member states fall outside of the 50km study areas and they would have no visibility of the construction, operation or decommissioning phases of the wind

farm sites. As such, no transboundary effects will arise as a consequence of SEP and DEP.

29.9 Summary

50. This chapter of the ES provides a summary of the transboundary impact assessment for SEP and DEP. The EIA scoping process confirmed which topics had the potential for transboundary impacts to arise, with only those topics being taken forward for further consideration. The assessment outcomes are provided in the relevant topic chapters of the ES.
51. In all cases transboundary impacts have been considered as an intrinsic part of the wider EIA and HRA processes, with due consideration being given to the potential for SEP and DEP to have a significant effect on the environment in EEA States.
52. No significant transboundary impacts have been identified at this stage. Further statutory transboundary consultation will be undertaken by the Planning Inspectorate in accordance with Regulation 32 of the EIA Regulations, if and when it accepts the DCO application for examination.

29.10 References

<p>Planning Inspectorate (2020). Advice Note 12 Transboundary Impacts and Process. Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/</p>
<p>Planning Inspectorate (2019). Scoping Opinion for Dudgeon and Sheringham Shoal Offshore Wind Farm Extensions. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010109/EN010109-000006-EQNR_Scoping%20Opinion%202017%20EIA%20Regs.pdf</p>
<p>Planning Inspectorate (2020). Transboundary screening undertaken by the Planning Inspectorate (the Inspectorate) on behalf of the Secretary of State (SoS) for the purposes of Regulation 32 of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the 2017 EIA Regulations) [‘First Transboundary Screening’]. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010123/EN010123-000033-Heckington%20Fen%20Solar%20Park%20Transboundary%20Screening.pdf</p>
<p>RHDHV (2019). Dudgeon and Sheringham Shoal Offshore Wind Farm Extensions Scoping Report. Available at: [REDACTED]</p>
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