



# Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects

## Auk Construction Phase Displacement Assessment (EIA Context) Technical Note

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## Glossary of Acronyms

DEP	Dudgeon Offshore Wind Farm Extension Project
BDMPS	Biologically Defined Minimum Population Size
DAS	Discretionary Advice Service
DCO	Development Consent Order
DEL	Dudgeon Extension Limited
EIA	Environmental Impact Assessment
ES	Environmental Statement
HP4	Hornsea Project Four
RR	Relevant Representation
SEL	Scira Extension Limited
SEP	Sheringham Offshore Wind Farm Extension Project

## Glossary of Terms

<p>Dudgeon Offshore Wind Farm Extension Project (DEP)</p>	<p>The Dudgeon Offshore Wind Farm Extension onshore and offshore sites including all onshore and offshore infrastructure.</p>
<p>Sheringham Shoal Offshore Wind Farm Extension Project (SEP)</p>	<p>The Sheringham Shoal Offshore Wind Farm Extension onshore and offshore sites including all onshore and offshore infrastructure.</p>
<p>The Applicant</p>	<p>Equinor New Energy Limited. As the owners of SEP and DEP, Scira Extension Limited (SEL) and Dudgeon Extension Limited (DEL) are the named undertakers that have the benefit of the DCO. References in this document to obligations on, or commitments by, 'the Applicant' are given on behalf of SEL and DEL as the undertakers of SEP and DEP.</p>

## 1 Introduction

1. This document presents an update to the assessment of construction-phase displacement in respect of auk species (guillemot and razorbill) undertaken as part of the Environmental Impact Assessment (EIA) of the Sheringham Shoal Offshore Wind Farm Extension Project (SEP) and Dudgeon Offshore Wind Farm Extension Project (DEP) on offshore ornithology receptors. This update has been undertaken at the suggestion of Natural England, who queried the approach to the auk construction phase displacement assessment in Discretionary Advice Service (DAS) comments on a draft version of **Chapter 11 Offshore Ornithology** [APP-097] and subsequently in the Natural England Relevant Representation (RR) [RR-063] (Point 4 of Table 4 - detailed comments). During a post-application meeting (15 November 2022) to discuss the Applicant's approach to addressing Natural England's DAS comments, it was indicated that construction-phase displacement estimates should be recalculated for guillemot and razorbill to reflect the approach adopted by recent Development Consent Order (DCO) submissions, in particular Hornsea Project Four (HP4).
2. The recalculated displacement estimates for SEP, DEP, and SEP and DEP combined are considered in the context of appropriate background populations and published mortality rates (**Sections 2.2** and **2.3**).

## 2 Methods

### 2.1 Seabird Abundance

3. The abundance estimates are unchanged from those used for the original assessment and are presented in Environmental Statement (ES) **Appendix 11.1 Offshore Ornithology Technical Report** [APP-195] of **Chapter 11 Offshore Ornithology** [APP-097]. As set out in the **Apportioning and Habitats Regulations Assessment Updates Technical Note (Revision B)** [document reference 13.3], there was an error in respect of razorbill abundance used in **Chapter 11 Offshore Ornithology** [APP-097]. The updated assessment presented in the **Apportioning and Habitats Regulations Assessment Updates Technical Note (Revision B)** [document reference 13.3], incorporates the correction of this error which resulted in values for mean peak counts for the breeding season and autumn migration season being mistakenly reversed during the production of displacement matrices. However, this has no effect on the overall annual displacement mortality estimates presented in this note (because the annual totals are unchanged).

### 2.2 Background Populations for Environmental Impact Assessment (EIA)

4. In accordance with Natural England's Relevant Representations (RR) [RR-063], the assessment is presented in terms of the annual effects (rather than individual seasonal impacts) against the largest relevant background Biologically Defined Minimum Population Scale (BDMPS). These are presented in **Table 2-1**.

**Table 2-1: Background populations and mortality rates used for year round EIA assessment**

Species	Largest BDMPS and season <sup>1</sup>	Published all age mortality rate <sup>2</sup>
Guillemot	2,045,078 (UK North Sea and Channel, breeding)	0.140
Razorbill	591,874 (UK North Sea and Channel, non-breeding (spring and autumn migration))	0.174
<b>Notes</b>		
<sup>1</sup> From Table 1 in Appendix B of the Natural England RR [RR-063]		
<sup>2</sup> From Horswill and Robinson (2015)		

## 2.3 Construction displacement mortality estimates

5. The approach to the updated displacement mortality estimation for guillemot and razorbill follows that presented for the HP4 EIA (APEM, 2021). The construction phase displacement has been calculated as half of the operation and maintenance displacement (30-70%), i.e. 15-35%. Also, in accordance with the HP4 EIA, a mortality rate of 1% for displaced birds has been applied. In accordance with ES **Chapter 11 Offshore Ornithology** [APP-097], puffin has been screened out from the construction-phase displacement assessment, due to the low numbers of this species recorded during surveys of SEP and DEP.

## 3 Results

6. Recalculated construction-phase displacement mortality estimates are presented in the sections below. For both guillemot and razorbill, predicted mortality has reduced compared with those presented within ES **Chapter 11 Offshore Ornithology** [APP-097]. In both cases, therefore, **the assessment conclusions as stated in the ES are not changed by these updated estimates.**

### 3.1 Guillemot

7. The annual construction phase mortality for guillemot as a result of SEP, DEP and SEP and DEP combined is presented in **Table 3-1**. For SEP and DEP combined, the total mortality range is 31-73 birds per annum, which is equivalent to an increase on background mortality of 0.01-0.03%. These values are lower than those presented within ES **Chapter 11 Offshore Ornithology** [APP-097], which predicted a year-round increase in background mortality of 0.01-0.13%. The conclusion to the assessment is therefore unchanged; the magnitude of effect of construction-related disturbance and displacement at SEP and DEP combined is assessed as negligible. As this species is considered to possess a medium sensitivity to disturbance, the impact significance is **minor adverse**.

**Table 3-1: Estimated annual construction-phase displacement mortality for guillemot at SEP, DEP, and SEP and DEP combined**

OWF	Mean abundance (Site +2km)	Predicted mortality (15-35% displacement, 1% mortality)	% increase to annual mortality of largest BDMPS population <sup>1</sup>
SEP	2,179	3-8	0.00-0.00

OWF	Mean abundance (Site +2km)	Predicted mortality (15-35% displacement, 1% mortality)	% increase to annual mortality of largest BDMPS population <sup>1</sup>
DEP	18,726	28-66	0.01-0.02
SEP and DEP	20,905	31-73	0.01-0.03
<sup>1</sup> 2,045,078 (UK North Sea and Channel breeding season BDMPS, as advised by Natural England in RR-063)			

### 3.2 Razorbill

8. The annual construction phase mortality for razorbill as a result of SEP, DEP and SEP and DEP combined is presented in **Table 3-2**. For SEP and DEP combined, the total mortality range is 12-27 birds per annum, which is equivalent to an increase in background mortality of 0.01-0.03%. These values are lower than those presented within ES **Chapter 11 Offshore Ornithology** [APP-097], which predicted a year-round increase in background mortality of 0.01-0.11%. The conclusion to the assessment is therefore unchanged; the magnitude of effect of construction-related disturbance and displacement at SEP and DEP combined is assessed as negligible. As this species is considered to possess a medium sensitivity to disturbance, the impact significance is **minor adverse**.

Table 3-2: Estimated annual construction-phase displacement mortality for razorbill at SEP, DEP, and SEP and DEP combined

OWF	Mean abundance (Site +2km)	Predicted mortality (15-35% displacement, 1% mortality)	% increase to annual mortality of largest BDMPS population <sup>1</sup>
SEP	1,904	3-7	0.00-0.01
DEP	5,246	9-20	0.01-0.02
SEP and DEP	7,733	12-27	0.01-0.03
<sup>1</sup> 591,874 (UK North Sea and Channel non-breeding season BDMPS, as advised by Natural England in [RR-063])			



## References

APEM, 2021. Hornsea Four Environmental Statement. Volume A2 Chapter 5: Offshore and Intertidal Ornithology. Report on behalf of Ørsted.

Horswill, C., Robinson, R.A., 2015. Review of seabird demographic rates and density dependence (JNCC Report No. 552). JNCC, Peterborough.