



PSE Kinsale Energy Limited

Kinsale Area Decommissioning Project

Kinsale Area Installations: End of Operations Seabed Survey

Response to Request for Further Information: Screening for AA

December 2022
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1 INTRODUCTION

On 15th December 2022 the Department of Environment, Climate and Communications (DECC) wrote to PSE Kinsale Energy Limited (KEL) requesting further information on its application to undertake a programme of seabed sediment sampling in 2023 in the Kinsale Head (including South West Kinsale and Ballycotton) and Seven Heads Gasfields. The request related to a Notice directing additional information for the purposes of carrying out Screening for Appropriate Assessment (emailed letter).

KEL has considered the points raised in the DECC communication and encloses herein a detailed response to these requests for further information.

2 APPROPRIATE ASSESSMENT SCREENING

2.1 DECC Query 1

The criterion used (Section 3.4.2 p. 15) to screen in any SAC and SPA with qualifying interests which are noise sensitive (marine mammals, migratory birds, diving birds) is where the site boundary is within a 15 km distance of the survey area or where foraging ranges may bring such qualifying features to within this distance. No evidence / justification is provided as to why a 15 km boundary range is applied. Clarification is required as to why 15 km was chosen as the criteria with regard to underwater noise

2.1.1 Response

A range of evidence was used to support the use of the 15km criterion for underwater noise, mainly from a review of the literature in relation to the distance from noise generating activities within which effects were observed in marine mammals, with evidence for birds being highly limited. As noted in the AA screening document, research on the effects of anthropogenic noise sources on marine mammals has concentrated on seismic survey with more limited research on other geophysical survey methods, and we are not aware of specific studies on the potential effects of USBL sound on noise sensitive species. The evidence base, therefore, is largely derived from observed responses to higher magnitude seismic survey sources or other large impulsive noise sources such as wind farm pile driving, and also reflects the Effective Deterrence Ranges (EDR) suggested by UK Statutory Nature Conservation Bodies (SNCBs) for both geophysical and piling activity.

For example, evidence of the effects of seismic surveys on odontocetes and pinnipeds is limited, but studies of 2D and 3D seismic surveys in the Moray Firth (Thompson *et al.* 2013) are notable. The survey exposed a 200km² area to noise throughout that period; peak-to-peak source levels generated by the 470 cubic inch airgun array were estimated to be 242-253 dB re 1 µPa at 1m. A relative decrease in the density of harbour porpoises within 10km of the survey vessel and a relative increase in numbers at distances greater than 10km was reported; however, these effects were short-lived, with porpoise returning to affected areas within 19 hours after cessation of activities. The source size studied by Thompson *et al.* (2013) was significantly larger than that proposed for the survey, which only includes that from USBL (refer to Table 2.1 of the AA Screening, and Section 4.2.2), which has a source level in the order of ~196dB re 1µPa @1m, with a frequency range of 20-40kHz. UK SNCB guidance relating to harbour porpoise SACs (JNCC 2020) has been developed through several years of inter-agency work and stakeholder discussion, including a period of consultation. A key element of the guidance is a set of recommended EDRs to estimate temporary habitat loss from different noise-generating activities. The EDR suggested for seismic surveys is 12km from the source, and a 5km EDR has been

suggested for other geophysical survey (e.g. multibeam echosounder, sidescan sonar) disturbance. For large offshore wind farm piling with noise abatement (and smaller piles with or without abatement), an EDR of 15km has been assumed by the UK SNCBs. These EDRs are evidence-based, and are considered to be conservative.

Data relating to the potential behavioural disturbance of diving birds due to underwater noise are very limited, including the ranges at which effects may occur, but available evidence is presented in Sections 3.4.2 and 4.2.2 of the AA Screening report, which noted that while there is some evidence of noise-induced changes in the distribution and behaviour of diving birds in response to impulsive underwater noise, these have been temporary and may be a direct disturbance or reflect a change in prey distribution during that period. Of the available studies which has considered the distance at which effect could occur, Pichegru *et al.* (2017), cited in Section 3.4.2, used telemetry data from breeding African penguins (considered as a possible proxy for auk species) to document a shift in foraging distribution concurrent with a 2D seismic survey off South Africa. During airgun shooting, their distribution shifted away from the survey area, with areas of higher use at least 15km distant to the closest survey line. However, insufficient information was provided on the spatio-temporal distribution of seismic shooting or penguin distribution to determine an accurate displacement distance. It was reported that penguins quickly reverted to normal foraging behaviour after cessation of seismic activities, suggesting a relatively short-term influence of seismic survey on these birds' behaviour and/or that of their prey.

Based on the above evidence, a 15km screening criterion was considered to be precautionary, particular given the nature of the noise source being considered. It should be further noted that this criterion was effectively applied as a buffer to the works and is used in combination with other criteria that reflect the Source-Pathway-Receptor (S-P-R) model referred to in guidance from the Office of the Planning Regulator (OPR 2021). That is, the criteria rely mainly on the mean maximum foraging ranges (Table 3.3 of the AA Screening) of potentially noise sensitive bird species (Table 3.1 of the AA Screening), and those indicative ranges for grey (100km) and harbour (50km) seals (see Section 3.5.1 of the AA Screening). Cetaceans are not central-place foragers, and attributing any animals to a specific SAC is challenging. A highly precautionary approach to identifying relevant SACs for cetaceans was used by identifying any SAC within the relevant marine mammal management units (after IAMMWG 2021) as being of relevance. For example, the management unit for harbour porpoise is the Celtic and Irish Seas, which covers a considerable area, including, the North Channel, eastern and western Irish Sea, St. George's Channel, and the UK and Irish sectors of the Celtic Sea.

All relevant SACs and SPAs within the relevant foraging ranges or management units were subject to screening, in addition to the application of the 15km criterion.

2.2 DECC Query 2

Appendix 1 Some errors have been observed in the tables of qualifying features, e.g. otter is listed as a qualifying feature of Blasket Islands SAC, but it is not listed on the site synopsis online. Appendix 1 should be checked again for accuracy to ensure qualifying features identified for each of the sites are accurate and an update Appendix 1 provided.

2.2.1 Response

All the site qualifying interests have been reviewed. For those SACs and SPAs sites listed in Appendix 1 of the AA Screening, the following errors were noted:

- Blasket Islands SAC – remove otter (*Lutra lutra*)
- Blackwater River (Cork/Waterford) SAC – add otter (*Lutra lutra*)
- River Barrow and River Nore SAC – add otter (*Lutra lutra*) and reefs

These sites are located 188km, 56km and 113km from the proposed survey area respectively, are not sensitive to at least one of the sources of effect, and are too distant to be relevant to the assessment. While we accept the features should have been correctly listed in Appendix 1, their removal or addition to the screening consideration does not change the assessment outcome.

2.3 DECC Query 3

Appendix 1: It is unclear why some of the qualifying features have not been taken through as a feature requiring further consideration, e.g. for Saltee Islands SPA, excludes further consideration for razorbill and guillemot; Or Puffin Island SPA, excludes further consideration for razorbill. Is it because foraging ranges from the SPA site do not overlap with the survey area? Confirmation of the criteria applied and/or to check again the qualifying features identified as requiring further consideration for each of the sites considered in Appendix 1.

2.3.1 Response

As referred to in Section 3.5.2 of the AA Screening, the mean maximum foraging range value for individual species has been used to show possible connectivity of breeding colony SPAs to the survey. This relates the foraging range to sites with relevant qualifying interests as a measure of the distance in kilometres (km) across the sea area (i.e. unrealistic movements across land are accounted for). This is used in the screening to identify relevant sites for consideration.

Table 3.3 of the AA Screening report lists the mean maximum foraging ranges for relevant species after the review in Woodward *et al.* (2019). For the specific species referred to in the query, guillemot and razorbill, the mean maximum foraging ranges are 73.2km and 88.7km respectively. Additionally, the ranges given for these species may be affected by unusually high foraging ranges from Fair Isle, such that excluding those data reduce the mean maximum ranges to 55.5km and 73.8km respectively; there is a similar issue with puffin, whereby the mean maximum foraging range may be closer to 119.6km, rather than 137.1km. Note that we have not applied the 1 standard deviation to the mean maximum value, as these ranges are already considered to be highly precautionary for the reasons set out in Section 3.5.2; the assumption that seabirds are uniformly distributed out to some threshold distance from their colonies, such as their putative maximum foraging range, is unrealistic. Seabird density declines with distance from the colony with density-dependent competition, coastal morphology and habitat preferences (Wakefield *et al.* 2017), for example oceanographic features at which seabirds preferentially forage including shelf-edge fronts, upwelling and tidal-mixing fronts, offshore banks and internal waves, regions of stratification, and topographically complex coastal areas subject to strong tidal flow (Cox *et al.* 2018), resulting in highly non-uniform distributions.

The tables for each SPA in Appendix 1 list the distance between the survey and the sites, which has been measured on the same basis as the foraging ranges. For Saltee Islands and Puffin Island, the distance is 119km and 168km respectively. Therefore, the potential for interaction is discounted for those species because the putative mean maximum foraging range of the qualifying interests is less than the distance between the survey and the site, and since they are considered to be potentially noise sensitive, this includes the addition of

the 15km criterion. Other species which do have a foraging range greater than the distance between a site and the survey area (e.g. fulmar, storm petrel and Manx shearwater), are subject to screening. Where species are not considered to be noise sensitive, the potential for disturbance is considered, however, for these species the additional 15km is not applied.

All the relevant qualifying seabird species for the sites listed in Appendix 1 have been checked against their mean maximum foraging ranges and the distance between the survey area (including an additional 15km for potentially noise sensitive species) and the site boundaries. Our review has identified three additional features to include in the assessment: common gull in relation to the Ballymacoda Bay SPA (physical presence of the survey vessel), and Atlantic puffin in relation to the Skomer, Skokholm and the Seas off Pembrokeshire SPA and The Bull and The Cow Rocks SPA (physical presence of survey vessel and underwater noise). The updated tables from Appendix 1 are provided below along with a consideration of the qualifying interests in relation to the sources of effect from the survey.

Site Name: Ballymacoda Bay SPA

Site Code: 0004023

Site information

Relevant qualifying interests: Wigeon (*Anas penelope*), teal (*Anas crecca*), ringed plover (*Charadrius hiaticula*), golden plover (*Pluvialis apricaria*), grey plover (*Pluvialis squatarola*), lapwing (*Vanellus vanellus*), sanderling (*Calidris alba*), dunlin (*Calidris alpina*), black-tailed godwit (*Limosa limosa*), bar-tailed godwit (*Limosa lapponica*), curlew (*Numenius arquata*), redshank (*Tringa totanus*), turnstone (*Arenaria interpres*), black-headed gull (*Chroicocephalus ridibundus*), common gull (*Larus canus*), lesser black-backed gull (*Larus fuscus*), Wetland & Waterbirds

Qualifying interests identified for further consideration on the basis of a foreseeable interaction with the survey area: lesser black-backed gull (*Larus fuscus*), common gull (*Larus canus*)

Summary Conservation objectives:

- To maintain the favourable conservation condition of those qualifying interests listed above in Ballymacoda Bay SPA, including the wetland habitat as a resource for the regularly occurring migratory birds that utilise it.

Feature attributes and targets defining favourable conservation status:

https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004023.pdf

Closest distance to the survey: 49km

Consideration of site interest features against potential sources of likely significant effect

The physical presence of survey vessel

As noted in Section 3.4, physical disturbance of seabird and other waterbird flocks by vessel traffic is unlikely, but the distance from a vessel at which flushing of birds could take place is significantly less than the minimum distance of the proposed survey (49km) such that there is no foreseeable interaction. Black-headed gull and common gull are both listed as wintering features in the site documentation and therefore the Woodward *et al.* (2019) foraging ranges are not applicable. Should gulls from the Ballymacoda Bay SPA forage into range of the survey, the findings of Garthe & Hüppop (2004) and Fliessbach *et al.* (2019) that gull species are regarded to have a low sensitivity to shipping traffic are relevant. There is either no potential for interaction in the case of waterbirds, or the qualifying interest which could interact is not sensitive to the proposed activities. However, in view of the potential for interaction, the latter is considered in Section 4.2.1.

Underwater noise from vessel and survey activities

None of the qualifying interests are diving seabirds which are likely to be most at risk of any underwater noise effects, and therefore no interactions with the survey are considered to be possible.

Site Name: The Bull and The Cow Rocks SPA
Site Code: 004066

Site information

Relevant qualifying interests: Atlantic puffin (*Fratercula arctica*), European storm-petrel (*Hydrobates pelagicus*), northern gannet (*Morus bassanus*)

Qualifying interests identified for further consideration on the basis of a foreseeable interaction with the survey area: northern gannet (*Morus bassanus*), European storm-petrel (*Hydrobates pelagicus*), Atlantic puffin (*Fratercula arctica*),

Summary Conservation objectives:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA (above)

Feature attributes and targets defining favourable conservation status:

Not listed - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004066.pdf

Closest distance to the survey: 136km

Consideration of site interest features against potential sources of likely significant effect

The physical presence of survey vessel

Northern gannet and European storm petrel have the potential to forage within range of the survey area (see Woodward *et al.* 2019). Sensitivity to vessel movements is considered to be low for those species (see Garthe & Hüppop 2004, MMO 2018, Fliessbach *et al.* 2019), but in view of the potential for interaction, this is considered further in Section 4.2.1.

Underwater noise from vessel and survey activities

There is the potential for interactions between diving seabird species (northern gannet, Atlantic puffin) which are potentially sensitive to underwater noise, and the survey activities. This is considered further in Section 4.2.2.

Site Name: Skomer, Skokholm and the Seas off Pembrokeshire / Sgomer, Sgogwm a Moroedd Penfro SPA
Site Code: UK9014051

Site information

Relevant qualifying interests: Atlantic puffin (*Fratercula arctica*), Manx shearwater (*Puffinus puffinus*), European storm-petrel (*Hydrobates pelagicus*), lesser black-backed gull (*Larus fuscus*), red-billed chough (*Pyrrhocorax pyrrhocorax*), short-eared owl (*Asio flammeus*)

Qualifying interests identified for further consideration on the basis of a foreseeable interaction with the survey area: Manx shearwater (*Puffinus puffinus*) European storm-petrel (*Hydrobates pelagicus*), Atlantic puffin (*Fratercula arctica*)

Summary Conservation objectives:

Only draft conservation objectives are presently available for the site:

<https://cdn.naturalresources.wales/media/675733/skomer-skokholm-and-seas-off-pembs-pspa-draft-conservation-objectives-final.pdf?mode=pad&rnd=131625760740000000>

Closest distance to the survey: 130km

Consideration of site interest features against potential sources of likely significant effect

The physical presence of survey vessel

Manx shearwater and European storm-petrel have the potential to forage within range of the survey area (see Woodward *et al.* 2019). Sensitivity to vessel movements is considered to be low for those species (see Garthe & Hüppop 2004, MMO 2018, Fliessbach *et al.* 2019), but in view of the potential for interaction, this is considered further in Section 4.2.1.

Underwater noise from vessel and survey activities

Site Name: Skomer, Skokholm and the Seas off Pembrokeshire / Sgomer, Sgogwm a Moroedd Penfro SPA Site Code: UK9014051
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There is the potential for interactions between diving seabird species (Manx shearwater, Atlantic puffin) which are potentially sensitive to underwater noise, and the survey activities. This is considered further in Section 4.2.2.
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As noted in the table for Ballymacoda Bay SPA in Appendix 1, gull species are regarded to have a low sensitivity to shipping traffic (Garthe & Hüppop 2004, Fliessbach *et al.* 2019), and therefore a low sensitivity to the proposed activities. This is further covered in Section 4.2.1, which indicates that effects would be of low magnitude, short duration and transient, and will represent negligible additional disturbance over other vessel traffic including that of fishing, cargo and tanker traffic. It can be concluded that significant effects are not likely for the common gull feature of Ballymacoda Bay SPA.

Section 4.2.2 notes that deeper-diving species which spend longer periods of time underwater (e.g. auks) may be most at risk of exposure, and therefore, Atlantic puffin is considered to be potentially sensitive to underwater noise. The section further notes that while seabird responses to approaching vessels are highly variable (e.g. Fliessbach *et al.* 2019), flushing disturbance would be expected to displace most diving seabirds from close proximity to the survey vessel, thereby limiting their exposure to vessel or USBL noise. With reference to Section 3.4.2 of the AA screening, the comparatively lower amplitude and higher frequency source characteristics of the vessel and USBL noise sources compared to seismic survey, for which there has been a lack of reported effects, in addition to the small spatial footprint and short duration of the proposed survey, is such that it can be concluded that significant effects are not likely for the Atlantic puffin feature of Skomer, Skokholm and the Seas off Pembrokeshire SPA and The Bull and The Cow Rocks SPA.

3 REFERENCES

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