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29 September 2017

Dear Sarah,

Thank you for your letter dated 19 September 2017 requesting further clarifications (following Marine Scotland's response on 8 September 2017) on The Addendum (Ornithology) to the Scoping Opinion for the Proposed Section 36 Consent and Associated Marine Licence Application(s) for Inch Cape Wind Farm and Associated Offshore Transmission Works.

I have already provided responses to Q.4 and Q5. via separate email correspondence, these responses are repeated below, and Q4 is expanded on to provide the updated position of the SeabORD model.

Please find our responses to your questions below.

4. Approaches to estimating impacts from displacement and barrier effects.

SNH have advised that the displacement and barrier effects should be estimated using the SeabORD model (if available in time) and also using the SNCB matrix approach. The latter will give an indication of range (which may be helpful given the uncertainty around levels of actual displacement) and shouldn't be onerous to apply (it's needed for the non-breeding assessment anyway).

SNH confirmed with CEH that the buffer for the SeabORD model can be user-defined and SNH and MSS advise that it should be a 2km buffer in line with the advice in SNCB guidance.

SNH advise that the previous model outputs from Searle et al. (2014) should also be presented and discussed in the EIA report for context. SNH have no strong concerns that the buffers are different between this previous work (1km, agreed at the time) and the current modelling (2km, based on more recently available information).

Since receiving this advice from SNH, MSS have advised that the SeabORD model is unlikely to be available until December. This is due to changes being made to the model

since the draft version which require further consideration by the steering group. Therefore Scottish Ministers do not expect that the SeabORD model will be used in the Inch Cape displacement assessment.

5. Estimation of bird densities within the buffer.

SNH provided the following advice on this point:

The method Inch Cape is proposing was discussed during their previous application – see table extract below.

One issue in using the approach IC are currently proposing is if there is a greater density of birds in the inner 2km buffer compared to the outer 2km buffer (of the total 4km buffer used by IC). If this were the case, an underestimation of birds in the inner 2km buffer used for assessment would be the result – which could underestimate displacement impacts. IC needs to assure us that the distribution and density of birds throughout the buffer is relatively homogenous (uniform) rather than showing any clustering in the inner 2km buffer area.

Some maps of bird distribution are shown in the original ES Appendix 15A Ornithology Technical Report that can help assess whether this is an issue. SNH have given them a quick look to see how uniform the distribution is – there are a few examples where there are more observations in the inner 2km than the outer 2km (i.e. where we might expect to see an underestimate of density). These were in GU in the post fledging and post breeding 2011 maps; and the same maps for RZ. See page 114, 117 and 120 for GU, RA and PU distribution maps. SNH suggest that Inch Cape look at either one of these (or both) as an example to see how different the densities would be either recalculating them for the inner 2km or using the approach they've suggested. This way SNH can be reassured that the densities won't be underestimated.

SNH have asked for clarification that IC are not proposing to just halve their density numbers but are dividing by the appropriate area, as the outer 2km buffer area is greater than the inner 2km buffer area that will be used for assessment.

- Extract from '2013 10 22 - Inch Cape - Offshore Wind - application - ES - ornithology - Repsol response to MSS on points of clarification'

Marine Scotland Science	**Abundance estimates** Were density estimates for the Development area and the 2 km buffer derived from a single design-based global density estimate that was then multiplied by the relevant km2? If yes, are there any issues with this approach considering the survey was designed for the area as a whole?	There is some uncertainty over exactly what is being asked here. Is the question actually meant to refer to a single design-based global detection function, as opposed to global density estimate? To clarify, where distance sampling was used (i.e. for species with ≥50 observations of birds on the water, as summed across all surveys), then a global detection function was produced using Distance 6.0 and this was applied to the survey data to produce density estimates (for birds on the water). The detection function was applied separately to the data from within the Development Area and from within the buffer area (4 km). A total abundance measure was obtained by combining the 'on the water' estimate of abundance with the

		estimate of 'in flight' abundance (see Annex 15A.3). Marine Scotland, SNH and JNCC advised the use of a 2 km buffer around a wind farm footprint in relation to displacement (Niras 2012, Appendix 1).For the purposes of the displacement calculations (which were based upon a 2 km, as opposed to 4 km, buffer), it was assumed that density was uniform throughout the buffer area and therefore the density estimate for the 4 km buffer was applied to the 2 km buffer within which displacement was assumed to operate, to provide an estimate of bird abundance within the 2 km buffer. In terms of applying a global detection function to such data, this approach is frequently recommended when using distance sampling (as it maximises the sample size on which the function is derived), particularly where sample size is on the low side (e.g. Peery et al. 2006) and is often the approach applied to such data in offshore assessments. Furthermore, given the uniformity of the environment within which these surveys were conducted it seems difficult to support an argument for not using a global detection function. In terms of assuming density to be constant throughout the buffer area (i.e. for calculating abundance within the 2 km buffer), this seems unlikely to be important, particularly when considered within the context of the precautionary assumption that displacement effects extend up to 2 km from the Development Area. Certainly, there is no reason to believe that such an assumption will have caused any systematic bias.

Please provide the clarification requested by SNH.

13. MS Apportioning Tool.

Scottish Ministers note Inch Cape's comments in this regard and are satisfied that Thaxter et. al (2012) be used to determine foraging range, and therefore connectivity, for kittiwake, guillemot and razorbill. The apportioning tool is likely to be published next week.

14. SPA colony counts.

SNH have provided the following *draft* 2017 counts for Buchan Ness-Collieston Coast SPA. SNH are content for these can be shared with developers for use in apportioning calculations. This is with the proviso that there's a slight risk of minor change to these figures dependent on publication of the final report.

Draft Count	2017 Counts	Unit
Kittiwake	11482	P
Herring Gull	3115	P
Guillemot	33632	I
Razorbill	5554	I
Puffin	240	I

Non-breeding season collisions - kittiwake and gannet

SNH have advised that The Crown Estate CRM spreadsheet (Feb 2017) (which has already been shared with ICOL) provides estimates for up-to-date wind farm parameters and is therefore more recent than the PINS submission for East Anglia 3 (Nov 2015). SNH advise that CRM estimates should be based on the "new" wind farm parameters as given by TCE spreadsheet. Note that the "old" wind farm parameters on this spreadsheet appear to equate to East Anglia 3 information.

The CE spreadsheet only seems to give an overview in relation to annual CRM estimate. Marine Scotland have had discussions with SNH regarding this and we hope to be able to advise on a process for dealing with this later next week following further consideration by SNH.

The RSPB have provided some comments on TCE report which I will send on to you separately so that you are aware of their concerns, however based on SNH advice, Scottish Ministers consider that the report will be helpful in the CIA for kittiwake and gannet during the non-breeding season.

RSPB seabird tracking data

Scottish Ministers advise that The MS Apportioning Tool takes into account the distribution models produced by Wakefield et al 2017. The issues identified by ICOL would therefore be addressed by using the tool, and all of the available tracking data utilised. If ICOL are unable to use the tool due to it not being available in time (as suggested is the case by ICOL) the approach suggested by ICOL to use the Thaxter et al. (2012) foraging range data as the basis for determining colony connectivity would be appropriate.

Kind Regards

Gayle Holland