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Our Ref: 014/OW/SGFoF1-10
Your Ref: A4MR/SEAG-Z-DEV210-SEA-MS-105

Dear Ms Berry,

Subject: Habitats Regulations Appraisal (HRA) Screening report comments

Thank you for your email dated 21st October 2011 requesting comments on the Seagreen Habitats Regulations Appraisal (HRA) screening report for phase 1 of the proposed 3.5GW wind farm located in the Outer Forth round 3 zone. The document, '*Offshore Phase 1 HRA Screening Report*', was circulated to Marine Scotland Science, Scottish Natural Heritage (SNH) and Joint Nature Conservation Committee (JNCC) for review. Marine Scotland, SNH and JNCC offer the following comments on the survey report.

I hope the following comments prove useful to you.

Yours sincerely,

Adrian Tait

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Marine Scotland

Marine Scotland thank you for the opportunity to comment on the as received on 11th November 2011.

Overall, Marine Scotland is satisfied that all bases are covered.

With reference to Atlantic Salmon, it is noted that JNCC and SNH recommended (as below) that the following features be considered in the HRA: Isle of May River, South Esk, Berwickshire, North Northumberland Coast, River Tay, Firth of Tay & Eden Estuary, River Teith, Moray Firth, River Tweed. In the case of SAC's for salmon, Marine Scotland assume the Tweed, Tay, Teith and S. Esk were suggested for inclusion because of the tagging work reported by Potter and Swain (1982) which showed that adult salmon tagged on the east coast of England migrated as far North as the Dee. Consequently this seems like a justifiable list of sites, although it does exclude some sites which evidence suggests could be affected, to a much smaller degree, such as the river Dee.

Within the HRA screening document, Marine Scotland are satisfied that Seagreen have identified the need to consider the potential impacts of development on salmon from the rivers listed above. Seagreen state that "*The effects of construction and operational noise / vibration, on these fish as well as any other types of disturbance, will be assessed as far as is appropriate within the EIA and AA*". This is a position Marine Scotland support. Seagreen should consider the potential impacts of noise, EMF, and perceived barrier effects. The potential for noise to affect migration as well as directly cause fright or mortality should also be considered.

Seagreen also recognise the need to consider the proposal in combination with other developments. Marine Scotland certainly agrees this to be the case given the potentially widespread development of the east coast of Scotland.

Away from the specific issue of this HRA, it is worth noting that the proposed wind developments off the East coast will be large and extensive and the consequences for salmon largely unknown. As such it may be judicious to collect some monitoring data that assesses fish migration routes, behaviour and timing pre- and post- development of these large scale wind farms to assess any impacts.

Marine Scotland would like to point out that in table 2.1; the number of turbines listed in the description of Aberdeen Offshore Wind Farm is 5. This should, in fact, be 11.

SNH and JNCC

Thank you for your consultation of 11 November 2011 regarding this screening report for Habitats Regulations Appraisal (HRA) of Phase 1 of offshore windfarm development in the Outer Forth Round 3 Zone. JNCC and SNH have been liaising with Seagreen regarding HRA as part of our scoping advice (response provided 8 September 2010) and discussions with the Forth & Tay Offshore Wind Developers Group (FTOWDG), as well as in respect of Seagreen's first year bird survey report (on which we provided comments, 12 August 2011).

We therefore welcome this current report as part of the iterative process to screen for, and define, HRA requirements for Phase 1 of the Round 3 Offshore Windfarm Zone in the Outer Forth. In **Appendix A** we provide our screening advice for HRA in respect of Special Areas of Conservation (SACs) and in **Appendix B** for HRA in respect of Special Protection Areas (SPAs).

We confirm the relevant SACs and SPAs which require consideration and identify the qualifying interests where a "likely significant effect" is possible. Please note that we have completed this process for SACs (as discussed in Section 3 of the Seagreen report), however, the HRA screening for SPA bird species is much more complex (see Section 4 of Seagreen report). We can therefore only provide our confirmed advice for HRA screening in respect of breeding SPA seabird interests – please see **Appendix C** for a summary table in this regard.

We are still considering possible approaches to HRA for seabird species during post-breeding, passage and overwintering periods and to HRA for non-seabird passage species (such as waders and freshwater ducks) and are in continuing dialogue with Marine Scotland, Crown Estate, Seagreen and the other FTOWDG developers in this regard.

APPENDIX A

JNCC & SNH Advice on HRA Screening for Special Areas of Conservation

We have reviewed Section 3 of the Seagreen report and consider that it provides a helpful summary of the screening process to identify those SACs and their qualifying interests which need further consideration through HRA of Phase 1 development in the Outer Forth Round 3 Offshore Windfarm Zone. Table 3.3 (pages 14 -19) of the report provides supporting detail in respect of this HRA screening process, providing the background to Table 3.4 (page 20), as well as complementing the advice presented in Appendix D of the JNCC and SNH response to the Seagreen Phase 1 scoping report (response dated 8 September 2010).

Our advice on Section 3 is divided into two sections:

(i) Freshwater SACs.
(ii) SACs which include marine mammals as a qualifying interest.

(i) Freshwater SACs

Table 3.4 provides a helpful summary of the SAC qualifying interests and the SAC sites to screen in for further consideration under HRA. We confirm that the following freshwater SACs: the River South Esk, River Tay and River Teith require such consideration, with the relevant qualifying interests to consider for each as listed in Table 3.4.

We do not, however, identify connectivity or any likely significant effect between any of the qualifying interests of the River Tweed SAC and Phase 1 development in the Outer Forth Round 3 Zone. Nor do we identify connectivity or any likely significant effect between any of the qualifying interests of this SAC and either the Neart na Gaoithe or Inch Cape offshore wind proposals (please see our respective scoping responses of 31 August 2010 and 29 October 2010).

The submitted HRA screening report specifically addresses Phase 1 of development in the Outer Forth Round 3 Offshore Windfarm Zone. We advise that the River Tweed SAC may need to be considered for future phases of development in the Zone – for further advice please see our scoping response dated 5 August 2010 for Phases 2 & 3 of proposed development in the Zone.

We confirm that those qualifying interests of the River South Esk, River Tay and River Teith SACs listed in amber in Table 3.3 will need to be considered in cumulative impact assessment (CIA) of Seagreen Phase 1 development in combination with the Neart na Gaoithe and Inch Cape offshore windfarm proposals, as well as other projects and proposed development that Marine Scotland or ourselves may identify as relevant. Cumulative impacts in respect

of SAC fish species have been raised for discussion by FTOWDG through the CIA discussion documents dated 2 October 2009 and 7 December 2010.

We are keen to work with Marine Scotland and FTOWDG to consider SAC fish issues further, and have been requesting a meeting in this regard. In respect of Section 3.1 of the Seagreen report, we note that a meeting never took place between MS, JNCC and SNH on 8 August 2011 to discuss SAC fish species. A meeting was held on 2 August 2011 between MS, JNCC and SNH to discuss fish species specifically in respect of the Moray Firth offshore windfarm proposals. There was then a follow-up meeting held with those developers (MORL and BOWL) on 11 August 2011, for which we believe a draft meeting note is available.

(ii) SACs which include Marine Mammals as a Qualifying Interest

In providing the following advice to Seagreen, we have reviewed Table 3.3 against our scoping advice of 8 September 2010. We have also made an initial check of the telemetry work and other data available from the baseline reports (SMRU Ltd, 2011) commissioned by FTOWDG on seal species and bottlenose dolphin (which we received late December 2011). We will be responding fully to FTOWDG on these reports once we have properly reviewed them (see below).

We advise that such impacts are considered in the context of a population level assessment framework, taking into account the biological significance of the potential displacement. In this regard we have been referring FTOWDG to the semi-quantitative approach being developed for the proposed offshore windfarms in the Moray Firth. We consider this to be the current best example of a framework to assess the risk from construction noise on harbour seal populations and despite its limitations would strongly encourage the adoption of a similar approach. Whist we are recommending that the assessment for each seal species is carried out at the relevant population level, the results will need to be interpreted with regard to the individual SACs listed above.

We recognise that some assumptions need to be made regarding the seals behavioural response given the lack of field studies in this regard. The level of uncertainty regarding the seals behavioural responses and the likely magnitude of any biological consequences of those responses are likely to influence our final advice for the Appropriate Assessment. It is therefore essential that both these factors are considered in the assessment.

For the purpose of HRA, we also repeat our earlier advice to Seagreen regarding two other potential effects to seals which will need to be considered:

- Potential disturbance to pupping and moulting seals from cable laying activities.
- Potential risk of “corkscrew deaths” caused by extensive, spiral lacerations, which have been recorded and have potentially been linked to the use of ducted propellers.

In this regard, please refer to our Seagreen Phases 2 & 3 scoping reponse, dated 5 August 2011, and to our scoping response for the grid connection, dated 15 February 2011.

Other qualifying interests – We agree that these can be screened out for the reasons presented.

Moray Firth SAC

Bottlenose dolphins – We agree that this qualifying interest needs to be screened in for the reasons provided in the Seagreen HRA report, we advise that site condition monitoring records bottlenose dolphin as "unfavourable, recovering" at the SAC. The baseline report commissioned by FTOWDG references available photo-ID work confirming current knowledge that there is a wide-ranging bottlenose dolphin population along the east coast, including the Moray Firth, the Forth and Tay area and extending as far as the northeast of England. We advise that the bottlenose dolphin status as a European Protected Species will need to be considered, and the objective of maintaining / restoring the Favourable Conservation Status of populations under the Habitats Directive (Whereby "Population" is defined in the EC guidance on the strict protection of animal species (section I.2.2) as a group of individuals of the same species living in a geographic area at the same time that are (potentially) interbreeding (i.e. sharing a common gene pool).

Again, we identify potential noise impacts as a key concern in respect of bottlenose dolphin. We advise characterising the spatio-temporal patterns in abundance and distribution of dolphins in the area likely to be impacted by construction noise, in particular sound above levels likely to cause disturbance. Given this species' fidelity to the Tay area, it will be important to try and predict the biological consequences (at the individual and population level) of any potential effects caused by construction noise such as displacement from a proportion of their habitat for prolonged periods, barrier effects or chronic exposure to noise. Again, we recognise that some assumptions will need to be made regarding dolphins' behavioural response given the lack of field studies in this regard.

The level of uncertainty regarding the dolphins' behavioural responses and the likely magnitude of any biological consequences of those responses both at the East coast population level and also in terms of any potential impacts to the SAC are likely to determine our final advice for the Appropriate Assessment. It is therefore essential that these factors are considered in the assessment.

We confirm that bottlenose dolphin will need to be considered in cumulative impact assessment (CIA) of the Seagreen Phase 1 windfarm development in combination with the Neart na Gaoithe and Inch Cape proposals, as well as other projects and proposed development that Marine Scotland or ourselves may identify as relevant.

Cumulative impacts in respect of bottlenose dolphin have been raised for discussion by FTOWDG through the CIA discussion documents dated 2 October 2009 and 7 December 2010.

Subtidal sandbanks – We agree that this qualifying interest can be screened out for the reasons presented in the Seagreen HRA report.

References

SMRU Ltd. (2011). Pre-publication. Cetacean Baseline Characterisation for the Firth of Tay based on existing data: Bottlenose dolphins.

SMRU Ltd. (2011). Pre-publication. Seal Telemetry in the Forth and Tay: Interim Report.

SMRU Ltd (2011). Utilisation of space by grey and harbour seals in the Pentland Firth and Orkney waters. Scottish Natural Heritage Commissioned Report No. 441.

APPENDIX B

JNCC & SNH Advice on HRA Screening for Special Protection Areas

We have reviewed Section 4 of the Seagreen screening report in respect of SPAs to consider through HRA for Phase 1 of development in the Round 3 Offshore Windfarm Zone. As noted in our covering letter, this is a complex process which we are continuing to discuss with Marine Scotland, Crown Estate and FTOWDG at our regular liaison meetings over birds.

Therefore, please find below our advice which we divide into two sections:

(i) Breeding SPA seabird interests – where we can provide confirmed advice to Seagreen for HRA screening.

(ii) Other SPA interests – subject to ongoing discussion with Seagreen and with FTOWDG.

(i) Breeding SPA seabird interests

At the last meeting of 10 October 2011, we provided FTOWDG with a table of collated information on relevant breeding SPA populations to consider. While **Appendix C** provides our updated advice on HRA screening specifically for Seagreen Phase 1, we note that our previous table is still a useful summary of SPA population counts at time of designation, and more recently.

For clarity, we highlight (in pink) where our advice in **Appendix C** varies from Table 4.3 in the Seagreen report. In particular, we advise including fulmar and gannet as qualifying interests of SPAs that are further afield but which still require consideration (with reference to mean max foraging range and available studies on foraging biology). **Appendix C** solely provides our advice for Phase 1 – any HRA screening for future phases of development in the Zone could raise a slightly different range of SPA breeding seabird interests, dependent on location, distance from SPAs and what seabird activity has been recorded during survey work.

In checking Table 4.3 of the Seagreen report, we believe it should be possible to more clearly set out the process for identifying the SPA qualifying interests it is relevant to consider during the breeding season – for which there is "connectivity" between the SPA interest and the proposed development. We recommend first identifying which species are present on-site during the breeding season (species specific), and in what numbers (monthly population estimates), and then undertaking an initial filter based on mean max foraging range to establish where birds may be originating from. See: http://seabird.wikispaces.com/

While this does form the basis of what Seagreen have done for the HRA screening report, we make the following recommendations to present the process more clearly:

State the distance between Phase 1 and each SPA: we note that while Appendix 2 of the Seagreen report has descriptions of relevant SPAs, it does not say how far each one is from the proposed development.

It could be helpful to illustrate key seabird foraging ranges from each SPA on a map.

While we consider mean max foraging range to be a reasonable metric for indicating potential connectivity, we note that, as with all means, there will be variation associated with this figure. Consequently, foraging ranges should be used with an agreed error margin (for example, plus 1 standard deviation – as presented in Thaxter el al 2011): Present a summary table of foraging ranges from all data sources referenced in the report, including the results from the FTOWDG tracking work (see below).

We welcome the tracking studies that have been commissioned by FTOWDG for breeding seabird species at the Isle of May (part of the Forth Islands SPA), Fowlsheugh SPA and St Abb's Head to Fast Castle SPA. We think that these studies should be helpful in understanding species foraging behaviour and any potential connectivity between Seagreen Phase 1 and these SPAs, although the results of this work have not been presented clearly in the screening report. The report also confuses some of the other references on foraging range – for example, the figures marked in column 4 of Table 4.3 (see explanatory text in Section 4.3) are stated as being taken from Langston 2010 whereas they are in fact from Thaxter et al 2011.

We confirm that those breeding SPA seabird interests screened into HRA for Seagreen Phase 1, as listed in **Appendix C**, will need to be considered in cumulative impact assessment (CIA) as indicated. This is to consider the impacts of Seagreen Phase 1 on these interests, in combination with the Neart na Gaoithe and Inch Cape proposals, as well as other projects and proposed development that Marine Scotland or ourselves may identify as relevant. We are continuing to discuss cumulative impacts on birds at our FTOWDG liaison meetings.

(ii) Other SPA interests

As we have advised at a number of our meetings with FTOWDG, we consider that the process of HRA screening for SPA bird interests would be better approached by explicit consideration of species presence according to season. For impact assessment under HRA the relevant reference populations and geographic scale to use will vary according to season – the assessment will need to account for species ecology and any inter-relationships between SPAs.

Thus, defining the relevant SPAs to consider for seabird species during the post-breeding, passage and overwintering periods is a much more complicated process than that described in section (i) above for the breeding season. We are currently considering this issue and intend to provide further advice to Seagreen along with the other FTOWDG developers. We note that

in the Phase 1 screening report, Seagreen have limited their consideration to a geographic area from Peterhead to the Farnes (and therefore to specific SPA populations) and it may not make sense to deal with post-breeding, passage and overwintering seabirds in this way. Please also see our advice on Seagreen's first year survey report regarding the limitations of boat-based survey methods for passage seabird species (advice note dated 10 August 2011).

Applying a geographic scope to HRA screening for non-seabird passage species (such as waders and freshwater ducks) does not make sense either, and we have recommended against this in our advice on the first FTOWDG ornithology report (letters dated 11 December 2009) and at our various liaison meetings with FTOWDG over birds. We do not expect the impacts on these non-seabird passage species to be of particular concern in respect of any of the FTOWDG proposals and we would not wish to see the focus removed from the key seabird species listed in our table in Appendix C. It is important, however, to ensure that non-seabird passage species are appropriately considered in the HRA process – we are currently reviewing the report from NiRAS on bar-tailed godwit (commissioned by Crown Estate on behalf of FTOWDG) and we anticipate discussing this matter with FTOWDG at our next meeting.

References

Birdlife International. (Undated). Seabird Wikispace http://seabird.wikispaces.com/

Langston, R. (2010). Offshore Windfarms and Birds: Round 3 Zones, extensions to Rpund 1 and round 2 sites and Scottish Territorial Waters. RSPB Research Report No 39, Sandy, Beds.

Thaxter, CB, Lascelles, B, Sugar, K, Cook, ASCP, Roos, S, Bolton, M, Langston, RHW, Burton NHK. (Unpublished data). Seabird Foraging Ranges as a Tool for Identifying Candidate Marine Protected Areas.

Appendix C

SPA	Species	LSE* - during breeding season?	CIA~ - during breeding season?	Justification (if different outcome compared to the Seagreen report)
Buchan Ness to Collieston Coast	Shag	N	N	Agree with report.
Buchan Ness to Collieston Coast	Fulmar	Y	Y	Within foraging range. At present there is considerable uncertainity regarding displacement / indirect effects for this species, at this stage cannot conclude no LSE.
Buchan Ness to Collieston Coast	Herring Gull	Y (but low likihood)	Y	Outside mean max breeding foraging range, but within error margins (Standard deviation).
Buchan Ness to Collieston Coast	Kittiwake	Y (but low likihood)	Y	Outside mean max breeding foraging range, but within error margins (Standard deviation).
Buchan Ness to Collieston Coast	Guillemot	Y (but low likihood)	Y	Outside mean max breeding foraging range, but within error margins (Standard deviation).
Coquet Island	Puffin	N	N	Agree with report.
Coquet Island	Black Headed Gull	N	N	Agree with report.
Coquet Island	Sandwich Tern	N	N	Agree with report.
Coquet Island	Roseate Tern	N	N	Agree with report.
Coquet Island	Common Tern	N	N	Agree with report.
Coquet Island	Arctic Tern	N	N	Agree with report.
Farne Islands	Puffin	N	N	Agree with report.
Farne Islands	Guillemot	N	N	Agree with report.
Farne Islands	Kittiwake	N	N	Agree with report.

Farne Islands	Cormorant	N	N	Agree with report.
Farne Islands	Shag	N	N	Agree with report.
Farne Islands	Sandwich Tern	N	N	Agree with report.
Farne Islands	Roseate Tern	N	N	Agree with report.
Farne Islands	Common Tern	N	N	Agree with report.
Farne Islands	Arctic Tern	N	N	Agree with report.
Firth of Tay & Eden	Marsh Harrier	N	N	Agree with report.
Firth of Tay & Eden	Little Tern	N	N	Agree with report.
Forth Islands	Fulmar	Y	Y	Within foraging range. At present there is considerable uncertainity regarding displacement / indirect effects for this species, at this stage cannot conclude no LSE.
Forth Islands	Gannet	Y	Y	Agree with report.
Forth Islands	Cormorant	N	N	Agree with report.
Forth Islands	Shag	N	N	Agree with report.
Forth Islands	Lesser Black Backed Gull	Y	Y	Within foraging range, pathway for impact, presence of birds on site in breeding season, population in decline.
Forth Islands	Herring Gull	Y	Y	within foraging range, pathway for impact.
Forth Islands	Kittiwake	Y	Y	Agree with report.
Forth Islands	Sandwich tern	N	N	Agree with report.
Forth Islands	Roseate tern	N	N	Agree with report.
Forth Islands	Common tern	N	N	The foraging ranges are not correctly reported - Thaxter = 15.2, Birdlife = 33.8, however, it seems unlikely that Phase 1 would be within range for breeding birds, hence no LSE can be concluded. (Note, however, that distances from SPAs have not been provided in the report.)
Forth Islands	Arctic tern	N	N	Outside foraging range in breeding season.
Forth Islands	Guillemot	Y	Y	Agree with report.
Forth Islands	Razorbill	Y	Y	Agree with report.

Forth Islands	Puffin	Y	Y	Agree with report.
Fowlsheugh	Fulmar	Y	Y	Within foraging range. At present there is considerable uncertainity regarding displacement / indirect effects for this species, at this stage cannot conclude no LSE.
Fowlsheugh	Herring Gull	Y	Y	Within foraging range, pathway for impact, population in decline.
Fowlsheugh	Kittiwake	Y	Y	Agree with report.
Fowlsheugh	Guillemot	Y	Y	Agree with report.
Fowlsheugh	Razorbill	Y	Y	Agree with report.
Imperial Dock Lock	Common tern	N	N	Outside foraging range in breeding season.
Lindisfarne	Shelduck	N	N	Agree with report.
Lindisfarne	Little Tern	N	N	Agree with report.
St. Abb's Head to Fast Castle	Shag	N	N	Agree with report.
St. Abb's Head to Fast Castle	Herring Gull	Y	Y	Within foraging range, pathway for impact, population in decline.
St. Abb's Head to Fast Castle	Kittiwake	Y	Y	Agree with report.
St. Abb's Head to Fast Castle	Guillemot	Y	Y	Agree with report.
St. Abb's Head to Fast Castle	Razorbill	Y	Y	Agree with report.
Ythan Estuary	Sandwich Tern	N	N	Agree with report.
Ythan Estuary	Common Tern	N	N	Agree with report.
Ythan Estuary	Little Tern	N	N	Agree with report.

*** LSE = Likely Significant Effect**
~ CIA = Cumulative Impact Assessment