

Inch Cape Offshore Wind Farm and Transmission Infrastructure

Gatecheck Report

The Electricity Act 1989 (as amended)

The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations
2017 (as amended)

Marine (Scotland) Act 2010

The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017
(as amended)

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1 Introductory Remarks

1.1 Project Background

- 1.1.1 Inch Cape Offshore Limited (“ICOL”) were granted consent under the section 36 of the Electricity Act 1989 (as amended) (“the Electricity Act”) and marine licences, under Part 4 of the Marine (Scotland) Act 2010 (“the 2010 Act”), in October 2014 for the construction and operation of the Inch Cape Offshore Wind Farm and associated Offshore Transmission Works (“OfTW”) in the Outer Firth of Tay (hereinafter “the Original Development”). The wind farm had a consented generating capacity of up to 784 megawatts (“MW”). These consents were subject to a judicial review process, which concluded in 2017.
- 1.1.2 ICOL are now proceeding with applications for new consent under the Electricity Act and marine licences under the 2010 Act for the Wind Farm and OfTW, within the same area as the Original Development. ICOL anticipate submitting these applications during July-August 2018 and these will comprise the “Revised Development”.
- 1.1.3 The Revised Development will be comprised of an offshore array of Wind Turbine Generators (“WTG”), connected by subsea inter-array cables to up to two Offshore Substation Platforms (“OSP”). Power generated by the WTGs will be transformed and carried to the onshore landfall location by up to two Offshore Export Cables (“OEC”).
- 1.1.4 The Revised Development is intended to take advantage of advancements in offshore wind technology since consent was granted, in order to support the achievement of ICOL’s twin objectives of improving project economics while reducing environmental effects when compared to the Original Development.
- 1.1.5 The Revised Development will, in summary, comprise of the following changes compared to the application for the Original Development (it should be noted that the parameters of the Original Development as consented, differ from those applied for):

Parameter	Original	Revised
Maximum number of WTGs	213	72
Minimum blade clearance above highest astronomical tide	22 metres	22 metres
Hub height	92 – 129 metres	176 metres
Blade tip height	152 – 215 metres	301 metres
Rotor diameter	120 – 172 metres	250 metres
Indicative minimum separation distance between WTGs	820 metres	1, 278 metres

- 1.1.6 The generating capacity of the proposed Revised Development will be greater than 1 MW and therefore requires the consent of the Scottish Ministers under section 36 of the Electricity Act to allow its construction and operation. Marine

licences will also be required under the terms of the 2010 Act to allow for the construction and deposit of substances and structures in the sea and/or on or under the seabed.

1.2 Scoping & Consultation Process

- 1.2.1 In May 2017, ICOL submitted their [Scoping Report](#) and request for a Scoping Opinion to MS-LOT. Following consultation, MS-LOT subsequently provided a Scoping Opinion as follows:

Date	Topic(s)
28 July 2017	All except Marine Mammals & Ornithology
3 August 2017	Marine Mammals Addendum
10 August 2017	Ornithology Addendum

- 1.2.2 The Scoping Opinion provided MS-LOT advice and responses to questions raised within the Scoping Report. Further to this, the Scoping Opinion provided advice regarding the application of the transitional arrangements for the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended) and the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended) (the 2017 EIA Regulations”) and regarding the format of the EIA report.
- 1.2.3 Since Scoping concluded, the Design Envelope has been amended to include monopiles as a foundation option. Between August 2017 and May 2018, further consultation has taken place regarding the Revised Development to assist with the preparation of the Environmental Impact Assessment (“EIA”) report and to clarify any queries arising from the Scoping Opinion. These consultations and clarifications have been captured within the relevant Chapter(s) of the EIA report and within the Gap Analysis submitted by ICOL.

1.3 The Gatecheck Process, Purpose & Format of this Report

- 1.3.1 ICOL submitted draft EIA report chapters and appendices to MS-LOT during May and June 2018. Upon submission of the final chapter, MS-LOT instructed their call-off contract providers, Jacobs to produce a written Gatecheck report and Gap Analysis. Further to this, consultation took place with the Scottish Natural Heritage (“SNH”) and our Marine Scotland Science (“MSS”) advisers, on certain receptors. Comments from Jacobs, SNH and MS-LOT have been combined into this Report and recommendations from MS-LOT are highlighted in bold.
- 1.3.2 The Gatecheck report is broken down by Chapter for ease of reference and provides a summary as to whether the draft EIA report submitted by ICOL adheres to the advice included within MS-LOT’s Scoping Opinions and subsequent clarification/consultation with stakeholders. This report identifies

‘gaps’ within the EIA report and where further clarification or work may be required to address these. In addition, this report also highlights weaknesses within the draft EIA report and recommends where the draft EIA report could be strengthened further prior to submission.

- 1.3.3 The formal Gatecheck process is carried out to ensure that the application meets the minimum requirements set out within the 2017 EIA Regulations, the 2010 Act and the Electricity Act. MS-LOT have been made aware of ICOL’s preferred timeline for determination and MS-LOT remind ICOL that the target timescale for consideration of an application is nine months from the date of acceptance of the application. The formal Gatecheck will reduce the likelihood that additional information will be required, however does not act as a guarantee and there may still be a requirement for additional information following consultation on the application.
- 1.3.4 MS-LOT recommends that the findings of this report are implemented by ICOL prior to submission of their final application. An updated Gap Analysis should be submitted by ICOL highlighting action taken by ICOL to address the recommendations within this report. Upon receipt of the updated Gap Analysis, MS-LOT will recommend whether further action is required or whether ICOL should proceed to submission of the final application.
- 1.3.5 Justification papers were provided by ICOL on 15 June and 9 July 2018 regarding the conversion factor used in the noise modelling for marine mammal assessment. Meetings were held between SNH, MS-LOT and Marine Scotland Science (“MSS”) on 20 June and 10 July 2018 to discuss the conversion factor used. Following the call on 10 July MS-LOT requested some further information on work undertaken by ICOL comparing the results of an assessment using a 0.5% conversion factor and a 1% conversion factor. MS-LOT will provide a final view on the acceptability of the 0.5% conversion factor following receipt of this information. This point will therefore be addressed separately from this Gatecheck report so that this report is not delayed.

2 General Remarks on the draft EIA report

- 2.1.1 The draft EIA report has addressed the majority of stakeholder comments and largely followed the advice contained within the Scoping Opinion and subsequent discussions. However MS-LOT recommend that a number of issues relating to marine mammals, commercial fisheries, SLVIA and ornithology require further revision prior to submission of the final application. ICOL must ensure the final application reflects the direction contained within the Scoping Opinion, unless otherwise agreed, and that any deviation from this is clearly stated and justified.
- 2.1.2 MS-LOT have also identified issues where ICOL may wish to update the documentation to facilitate public understanding of the documents. Comments on the draft EIA report are broken down by each Chapter and set out in the following sections.
- 2.1.3 Consultees responded stating that the documents were well written and generally consistent in the assessment methodology applied. The receptors identified in the Scoping Opinion have been included in the EIA report and where mitigation has been identified and applied by ICOL, it is generally appropriate and relevant to the potential impacts assessed within the EIA report.
- 2.1.4 Jacobs highlighted that ICOL’s intention to consider only ‘Major’ or ‘Moderate/Major’ impact significance as significant within the EIA report was questioned by East Lothian Council during scoping. However, in their view, Jacobs were largely content with how this classification had been applied throughout the assessment.
- 2.1.5 Jacobs advised that further consideration be given to the age of baseline data used to support the assessments contained within the technical chapters, highlighting the time delay between the issue of the Scoping Opinion and intended submission date for the final licence and consent applications. Jacobs, did however, highlight that stakeholders had agreed the use of the baseline data during scoping and subsequent consultation.
- 2.1.6 Further, since the Scoping Opinion was issued, the developments included within the cumulative impact assessments (“CIA”) have progressed further. For example, it should be noted that applications for the Seagreen Alpha and Seagreen Bravo Offshore Windfarms will be likely submitted prior to ICOL and the document should be updated to reflect these changes. The current status of projects included within CIA should be checked prior to submission.

2.2 MS-LOT Recommendation(s)

- **Typographical errors have been highlighted in the sections below, however, the Gatecheck process is not intended to be an editorial check of the submitted documentation. ICOL are reminded that it is their responsibility to ensure that all documents are subject to a thorough quality control check prior to submission.**
- **The current status of projects and developments included within the CIA for all receptors, should be checked and updated accordingly, prior to submission.**
- **ICOL should ensure that all consultation which has taken place since the issue of the Scoping Opinions is adequately captured and recorded within the EIA report.**
- **MS-LOT do not consider that ICOL need to update the baseline data relied upon within the EIA report, however reference should be made to the agreement reached that the existing baseline could be relied on. The Scoping Opinion stated that it was valid for 12 months. If submission of the application is not made by 10th August 2018 (12 months from the date of the ornithology scoping opinion), then this should be discussed with MS-LOT, however MS-LOT recognise that ICOL have had continued post-scoping engagement with ourselves and key stakeholders.**
- **ICOL should ensure that a statement outlining the relevant expertise or qualifications of the competent experts used in the preparation of the EIA report is included within the final application.**
- **ICOL must update the PAC Report as detailed in Section 7 of this report prior to submission of the final application.**
- **SLVIA Appendix 12G (Additional Wirelines) should be submitted for information as part of the final application. ICOL should carefully consider the detailed comments provided by SNH and Jacobs on SLVIA.**
- **ICOL should include further details regarding the timescales for the re-establishment of the Commercial Fisheries Working Group.**
- **ICOL should either update the impact significance used in Chapter 17 to match the methodology of Chapter 4, or provide a clear justification for their deviation from it within this Chapter. Chapter 17 should be consistent with Chapter 4 regarding the classification of mitigation measures.**
- **ICOL should set out the socio-economic analysis and underlying assumptions more clearly. ICOL should provide further justification regarding mitigation of**

impacts within the CIA section (as per Paragraph 18.1.2)

- **ICOL should provide further information regarding SeaBORD, as requested by MS-LOT on 18 June 2018.**
- **ICOL should consider the comments on each Chapter, as set out in the following sections and consider whether the final application should be updated to address these comments. Where recommendations are not taken on board, justification should be provided in an updated gap analysis.**

3 Chapter 1 – Introduction

- 3.1.1 Regulation 5(5) of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended) and Regulation 6(5) of the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended) state,

*“In order to ensure the completeness and quality of the EIA report –
(a) the developer must ensure that the EIA report is prepared by competent experts; and
(b) the EIA report must be accompanied by a statement from the developer outlining the relevant expertise or qualifications of such experts.”*

- 3.1.2 MS-LOT note that a statement outlining the relevant expertise and qualifications of the competent experts used by ICOL has not been included. ICOL have, however, advised this will be submitted as an Appendix to Chapter 1 at application stage.

4 Chapter 2 – Policy & Legislative Context

4.1.1 MS-LOT had no major comments to make on Chapter 2 of the EIA report.

4.1.2 However, MS-LOT note that no discussion regarding the 2030 targets has been included within this document. It may also be helpful to state explicitly that no Marine Planning Partnership has been formed for the relevant area at Paragraph 26.

5 Chapter 3 – Regulatory Requirements

- 5.1.1 MS-LOT had no major comments to make on Chapter 3 of the EIA Report.
- 5.1.2 For consistency it would be beneficial to cross-refer to the discussion regarding the application of the transitional arrangements included in Paragraphs 33 – 34, Chapter 1 at Paragraph 19 of this Chapter.
- 5.1.3 For clarity, please ensure that the terminology “(as amended)” is included after all references to the Electricity Act 1989, the 2017 Electricity Works EIA regulations and the 2017 Marine Works EIA regulations.
- 5.1.4 Paragraph 20 suggests that the 2007 Marine Works EIA regulations apply under the transitional arrangements. This is not the case, as these regulations have been revoked in Scottish territorial waters. The 2017 Marine Works EIA regulations apply to this application as modified by regulation 40 under the transitional arrangements.

6 Chapter 4 – Process & Methodology

- 6.1.1 MS-LOT had no major comments to make on Chapter 4 of the EIA report.
- 6.1.2 MS-LOT did however note that there is frequent repetition of key regulations and acronyms throughout the Chapter, which is inconsistent with the flow of previous Chapters. Paragraph 3 could be reworded for clarity.
- 6.1.3 Paragraph 37 should be updated to reflect the status of the Seagreen Alpha and Seagreen Bravo Offshore Windfarm Applications at the anticipated time of submission.
- 6.1.4 ICOL state in Paragraph 21 that a Gap Analysis meeting will be held with MS-LOT and SNH. This meeting was not held due to resourcing implications and reference to it should be removed.

7 Chapter 5 – Stakeholder Engagement

7.1.1 ICOL have complied with the majority of the requirements set out in the Marine Licensing (Pre-Application Consultation) (Scotland) Regulations 2013 (“the 2013 Regulations”) and accompanying Schedule, however there is some information missing from this Chapter and Appendix that should be included. Furthermore, an explicit reference to the 2013 Regulations should be included in Chapter 5 for clarity.

7.1.2 Items required by the 2013 Regulations for inclusion in the final EIA report:

- Introductory Section – Company Registration Number
- Details of amendments made, or to be made, to the application for a Marine Licence by the Prospective Applicant following their consideration of comments and/or objections received at the Pre-Application Consultation Event”.
- An explanation of the approach taken by the Prospective Applicant where, following relevant comments and/or objections being received by the Prospective Applicant at the Pre-Application Consultation Event, no relevant amendment is made to the application for a Marine Licence.

7.1.3 ICOL should also clarify whether they have the sufficient permissions to include scanned copies of the as-published public notices within their documents.

8 Chapter 6 – Site Selection

8.1.1 MS-LOT had no comments to make on Chapter 6 of the EIA report.

8.2 Appendix 6A – Design Considerations

8.2.1 Further comments on Appendix 6A are included in SNH's comments on Chapter 12. SNH recommend that Appendix 6A, Table 6A.1 is amended to make clear the link between technical/physical constraints and effects on wind farm composition.

8.2.2 MS-LOT identified the following minor typographical errors within Appendix 6A

- Paragraph 4 –, “As noted in the consent received by the Scottish Ministers...”
- Paragraph 18 – Amend “Firth of Forth Alpha and Bravo” to “Seagreen Alpha and Bravo”

9 Chapter 7 – Description of Development

- 9.1.1 MS-LOT are satisfied that sufficient information has been provided by ICOL in relation to Decommissioning and the proposed Operation and Maintenance activities.
- 9.1.2 A clearer link to the assessment of impacts of commercial fisheries (i.e. loss of fishing grounds and displacement) included in Chapter 14 should be incorporated into Section 7.13 – Safety and Exclusion Zones. This section does not currently make reference to the use of risk assessment to determine when ‘rolling’ safety zones would be considered necessary. It would be helpful to include an indication of the maximum number of rolling safety zones anticipated to be ‘live’ at any one time during the construction phase.

10 Chapter 8 – Benefits of the Development

- 10.1.1 MS-LOT had no major comments to make on Chapter 8 of the EIA report and no comments to make on Appendix 8A (Carbon Balance Assessment).
- 10.1.2 MS-LOT note that in Paragraph 3 of the Chapter, an overall generating capacity of 700 MW has been calculated from the proposal, which is a lower figure than the consented project. An explanation regarding this difference would be helpful.

11 Chapter 9 – Natural Fish & Shellfish

11.1.1 Jacobs and MSS have provided comments on this Chapter as below. MSS provided a further response in relation to whiting and saithe in response to Jacobs' comments on 11 July 2018.

11.2 MSS Comments

11.2.1 Herring larvae – there are instances where effects on herring larvae are considered (e.g. paragraphs 63 and 88) whereby focus seems to be that “*the development of sensory hearing organs occurs in late stage larvae and so impacts on the larval population from piling noise will be limited, and comparable to the (scoped out) non-hearing specialists species*”. It should be noted here that there is potential for non-auditory tissue damage to occur in organisms subject to underwater noise exposure and this may have the potential to affect herring larvae.

11.2.2 Note that when considering herring larvae, there is an IMARES report by Bolle *et al* (2014)¹ that may be useful. This reports on lab based studies examining the lethal effects of underwater noise on larvae from different species, including herring. Whilst this report does not consider any long term effects that underwater noise may have on exposed larvae, it is one of the limited sources of information of the lethal effects of noise on herring larvae.

11.2.3 When considering spawning cod (e.g. paragraphs 37 and 69), it is reported that cod are not restricted to specific habitats during the spawning season. As per the referenced paper by González-Irusta (2016a), cod are likely to show preference for certain habitat conditions. The paper also reports on seasonal site fidelity. Whilst the applicant may not feel that this will affect the overall conclusions, it would be useful to have something a little more in depth on the topic. If appropriate at this stage, it may also be useful to consider likely habitat preference as a form of mitigation through considered turbine siting where / if possible.

Minor comments relating to diadromous fish:

11.2.4 Appendix 14B provides details of the pattern of catches of salmon and sea trout in the salmon districts close to the development and indicates in Paragraph 28 uncertainties over the numbers, age structure and migration period of salmon and sea trout potentially using the development area and export cable corridor. MSS accepts that there are still uncertainties but would note that new information continues and will continue to come in, for example from survey work for smolts carried out by MSS in May 2018, in relation to salmon migration.

11.2.5 It would be useful if there was more engagement of ICOL with MS-LOT to

¹ <https://tethys.pnnl.gov/publications/effect-pile-driving-sound-survival-fish-larvae>

discuss potential project work to meet an expected SpORRAn diadromous fish work condition.

- 11.2.6 MSS notes that a meeting of ICOL with various salmon boards took place on 7 November 2017, and read the meeting summary in Chapter 9, Table 9.2 with interest. A copy of the meeting note was subsequently requested and received from ICOL to help inform further discussion.

11.3 Jacobs Comments

- 11.3.1 It is recommended that further detail be provided on those issues which have been scoped out (see Table 9.1), specifically a reference to a meeting/email etc. which provides evidence that this has been agreed with consultees and/or MS-LOT.

- 11.3.2 As a general comment, it is felt that further clarification should be provided for the assignment of ‘moderate’ sensitivity to all hearing specialists (fish). There is discrepancy between how sensitivity is assigned in Chapter 4 and in section 9.9.1 (paragraph 44). To acknowledge the general methodology, as outlined in Chapter 4, it is recommended that ‘hearing specialists’ are instead assigned as ‘high’ sensitivity, since these are the most sensitive fish receptors to underwater piling noise. The methodology outlined in section 9.9.1 (paragraph 44) seems to slightly contradict that given in Chapter 4, as the indication is that the assignment of ‘moderate’ sensitivity for rare (or internationally designated) species is a consequence of there being no key habitats for these species in the area. Whereas the consideration of ‘other’ hearing specialists appears to derive their sensitivity from either their ecological or conservation importance, rather than their sensitivity to the impact in question.

- 11.3.3 It is also recommended that a description of the distinction between the ‘hearing specialists’ is provided. In section 9.4 (paragraph 8) there is detail relating to conservation designations of fish, such as Scottish Priority Marine Features (PMFs), but it would be useful if relevant designations to each species discussed in the assessment are provided.

- 11.3.4 Justification should be provided as to why whiting and saithe have not been considered within this assessment. Whiting have spawning grounds adjacent to the development and high intensity nursery grounds that overlap with the development, whereas saithe have nursery grounds that overlap with the development. Whiting and saithe are both PMFs and, as gadoids, would also be considered ‘hearing specialists’.

- 11.3.5 It is recommended that the references provided on gadoid spawning/nursery grounds are checked. For example, paragraph 37 of the EIAR refers to work by Gonza’lez-Irusta and Wright (2016b) in relation to cod; however, this paper is specific to haddock (see list of references in Chapter 9).

- 11.3.6 The assessments against each fish species use the predicted fraction of the

total area of nursery and/or spawning habitat likely to be affected as the key foundation for the magnitude of impact. It is recommended that more justification be provided in relation to the potential effects on those species which will be affected during passage. The assessment suggests that larvae/juveniles could simply utilise another area of the wider nursery and/or spawning habitat. That there is only 'partial interaction' with spawning and nursery habitat should not be the key justification for the low magnitude assigned (e.g. paragraph 75). Suggest that additional justification is provided such as recoverability, frequency and duration of the impact, as is suggested in section 9.9.2.

- 11.3.7 As done with herring, it would be useful to present the figures of cumulative noise contours with overlay of spawning/nursery area for cod and sprat. Should other gadoids be assessed, namely whiting and saithe, then similar figures for these species should also be presented.
- 11.3.8 Paragraph 71 suggests that cod spawning grounds will be affected by the piling noise yet paragraph 91 suggests that spawning areas are beyond the influence of the cumulative noise contours. This is contradictory and should be clarified.
- 11.3.9 The assessment made for cod (paragraphs 69 to 71) does not align with the justifications used for the cumulative impacts (paragraphs 91 and 92). Aside from the discrepancy noted above, a low magnitude is assigned to cumulative impacts on the basis of overlap with high intensity cod nursery area. However, the magnitude is assigned as negligible within paragraph 71 with no acknowledgment given to the overlap with high intensity nursery area. Some acknowledgment is recommended with suitable justification to support the final assessment.
- 11.3.10 In summary, greater justification and consistency is recommended with assigning sensitivity/value to the fish receptors.
- 11.3.11 It is suggested that as 'hearing specialists' the receptors saithe, but particularly, whiting should be assessed. As these are important prey species for a number of marine mammals that are assessed in Chapter 10, it is recommended that consideration is given to how any significant effects on these fish species (if they are found to occur) could have an additional displacement effect on marine mammals.
- 11.3.12 It is recommended that some of the assessment justifications are strengthened and consistent.

11.4 MSS Response to Jacobs Comments (11 July 2018)

- 11.4.1 MSS provided the following advice on the assessment of whiting and saithe in response to Jacobs comments (as above at 11.3).

- 11.4.2 The term ‘hearing specialist’ is used to describe those fish that have specialized anatomical structures that enhance hearing sensitivity and bandwidth. Herring, for example, have elongated gas ducts ending in bullae that essentially connect the swim bladder with the inner ear, thus they are termed hearing specialists. By this rule, cod would be classed as hearing generalists however were treated as hearing specialists given their use of sound during mating rituals. It should be noted however that it has recently been suggested (Popper et al, 2014) that whilst literature often refers to “hearing specialists” and “hearing generalists”, this differentiation has been shown to be inappropriate. Popper et al instead present categories in terms of auditory acuity and detection mechanisms and these have been included within the draft ICOL EIA report, as requested. The suggestion that a distinction between hearing specialists and generalists could be helpful. A change in the wording of the EIA report could also be useful, whereby it is herring, a hearing specialist, that is used – with the emphasis that it is herring that is being considered.
- 11.4.3 Both herring and cod are aggregate spawners for which there has been recent concern regarding stock levels. ICES advice for herring² suggests that spawning stock should not be disturbed, whilst for cod³ there are indications of subpopulations inhabiting different regions of the North Sea (such as to the North of the proposed development site) meaning that recolonisation of depleted (this is not suggesting that the mentioned area is depleted) subpopulation areas may be slow. Given their hearing capabilities it is therefore essential that these species are assessed.
- 11.4.4 The same level of concern does not surround whiting⁴ or saithe⁵ stock levels. In accordance with Coull et al, 1998, indicative whiting spawning grounds are fairly extensive along the east coast of Scotland whilst there are no saithe spawning grounds within the local area. Nursery grounds for these species are also relatively extensive as opposed to the very restricted ones for cod or herring. For these reasons, the same concern does not surround these species, and it was therefore not suggested during scoping that further assessment (further to the original application) takes place.

² <http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/her.27.3a47d.pdf>

³ <http://ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/cod.27.47d20.pdf>

⁴ <http://ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/whg.27.47d.pdf>

⁵ <http://ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/pok.27.3a46.pdf>

12 Chapter 10 – Marine Mammals

12.1 SNH Comments (also covers underwater noise)

- 12.1.1 In the scoping opinion, Ministers advise ICOL not to assess ADDs as embedded mitigation, rather to carry out the initial assessment without the ADDs and then to consider them as mitigation. The information provided at Gatecheck does not appear to have followed this advice. We would require certainty that ADDs would be used for this to be the case as our advice would change if there is a possibility ADDs would not be used. The information provided states it is “likely” they will be used which is not the level of certainty we would suggest for embedded mitigation. (p19, Chapter 10)
- 12.1.2 It would be very useful to see the source levels estimated for all hammer energies used in the noise model. We have concerns regarding the conversion factor used in the source model calculation. Our view is that the use of 0.5% conversion factor returns estimated source levels that are lower than expected. We therefore advise that a conversion factor of 1% is used in the noise model instead of the 0.5% which has been used in the information provided at Gatecheck. If the conversion factor of 0.5% is preferred, we would need to see full justification as to the reasons why the 0.5% conversion factor is appropriate for ICOL. Our recommendation of 1% follows our advice for the BOWL Piling Strategy and will improve our ability to compare the differences in estimated impacts between developments. (MS-LOT recognise that there are ongoing discussions regarding this issue, please see paragraph 1.3.5 for more detail).
- 12.1.3 The predicted cumulative PTS zones form unusual shapes. We appreciate that bathymetry and underwater features will affect the shape of the zones, but it would be good to get some clarification of why the modelling shows such strange patterns. Are these realistic? Or are they just an artefact of the model? (App 9B, p19-26)
- 12.1.4 The quantitative cumulative assessment does not include Seagreen, as no PTS was predicted and a very low disturbance of BND in the 2014 consent. We seek clarification on whether the potential impacts from the new 2017 Seagreen application, which may be higher due to the use of monopiles, have been considered. It would be useful to clarify whether this assessment was considered and, if scoped out, the rationale for that decision. We agree that the quantitative cumulative assessment does not include Moray West.
- 12.1.5 The cumulative assessment only includes 6 days of blasting at Aberdeen Harbour – this is less than we anticipated. It would be useful to understand why this blasting schedule has been used and how realistic it might be.

12.2 MSS Comments - EIA (also covers underwater noise)

- 12.2.1 MSS have also raised concerns in their advice to MS-LOT regarding embedded mitigation. One aspect of that concern is, if there is any variation in ADD use as a mitigation tool, there is the potential that the outputs from the noise modelling presented in the draft EIA would no longer provide an assessment of the proposed activity.
- 12.2.2 MSS agree with SNH's concern regarding the conversion factor used and also advise that a higher % conversion factor is used in the modelling unless a robust justification for the use of 0.5% is provided.
- 12.2.3 MSS also note the unusual PTS contours from the noise modelling. This was highlighted by the developer at the Marine Mammals: Second ICOL Workshop on 13th December 2017 and was attributed to the fleeing assumptions used in the model (see Post-Workshop Discussion Document, p. 13). MSS also agree that clarification and further explanation would be useful and would aid interpretation of the Figures.
- 12.2.4 MSS acknowledge that the Seagreen 2017 application will use monopoles and that the potential impacts may be higher, however, the details of the revised mono-piling is not in the public domain and as such MSS are content that the cumulative assessment has used the current best information available, as per the advice provided by MSS to MS-LOT on 1st March, 2018.
- 12.2.5 MSS acknowledge that the intention of Aberdeen Harbour is to minimise the number of days of blasting and, that at present, it is unknown as to how many days of blasting will be required. However, MSS do share SNH's concern that 6 days of blasting is unlikely to be a conservative estimate, and that further justification as to why this blasting schedule was used would be welcomed.

12.3 MSS Comments – HRA Chapter

- 12.3.1 MSS have reviewed the draft marine mammal chapter, the associated appendices and the marine mammal HRA for Inch Cape. MSS have done this with reference to recommendations made within the scoping opinion and to other agreements and/or recommendations post-publication of the scoping opinion as a result of additional consultation.
- 12.3.2 With respect to iPCoD, MSS were aware of a bug in the software that could give erroneous conclusions for bottlenose dolphins. MSS acknowledge that the developer contacted SMRU Consulting and obtained an updated version of iPCoD, which has rectified this issue. MSS note that the developer has presented the three outputs that were requested in the scoping opinion as part of the population viability analysis. As noted in the scoping opinion, a copy of the code used to run the iPCoD model was requested by Scottish Ministers, in order to allow MSS to replicate the analysis provided. As far as MSS are aware, this information has not been provided in the draft version of

the EIA.

12.3.3 MSS note that it would be useful if the source levels estimated for the hammer energies used in the noise modelling are provided. MSS note that a 0.5% acoustic energy conversion factor has been used in the noise modelling. Advice provided by SNH to BOWL for their piling strategy was to use 1%. MSS suggest that robust justification, based on scientific evidence, should be provided to support the use of a 0.5% conversion factor. Failing that, MSS recommend that the 1% conversion factor is used. MSS note that, if the 1% conversion factor is used, this would have implications on the proposed embedded mitigation.

12.3.4 MSS acknowledge that, for the noise modelling, use of ADDs has been incorporated, but there is no assessment without use of ADDs. Our advice provided in the scoping opinion was; “ADDs are a mitigation tool, it may be more appropriate to undertake the assessment process without them and then include them as a mitigation at a later stage. This would be the standard approach for EIA and would have the advantage of providing good evidence regarding the efficiency of the proposed mitigation.”

12.3.5 The rationale to the advice provided by MSS is that, mitigation practices should be implemented based on both the worst case scenario and the current best practices for mitigation. As new evidence is obtained, best practices, with respect to ADD use as a mitigation tool, may be revised and, if this were the case, the outputs from the noise modelling presented may no longer provide an assessment of the proposed activity. MSS also note that, any changes to the embedded mitigation would affect both the input parameters and the results obtained from iPCoD.

12.4 Noise Modelling – Conversion Factor

12.4.1 As detailed in paragraph 1.3.5 a response on the acceptability of the 0.5% conversion factor will be provided separately to this report.

13 Chapter 11 – Ornithology

13.1 SNH Comments

13.1.1 SNH have reviewed the following:

- Chapter 11 (Ornithology) and the appendices A-E covering details of the baseline survey, apportioning, collision risk, displacement impacts and the PVA.
- HRA document received on 4th June.

13.1.2 SNH's comments relate solely to the suitability of the documents for the intended assessment of the project.

ES and HRA

13.1.3 The documents have followed the scoping opinion issued by Marine Scotland and any subsequent follow up directions.

- The ES chapter deals largely with regional populations. As such it does not allocate impacts to specific colonies. The scope of the regional populations appears to be sensibly defined.
- Scenarios assessed include the options requested in the scoping opinion.
- ICOL have estimated a 2km buffer around the combined Seagreen site using extrapolated densities, this approach has been discussed with Marine Scotland previously.
- The assessment includes the consideration of the likelihood that the conditions of the consent from the previous application are all accepted including production of a PEMP and an environmental monitoring plan.
- The ES chapter scores impacts through a 4 level sensitivity matrix, although within the document this is often criticised as over representing the level of impact. It is a useful guide to the general level of the impact on the regional breeding populations of seabirds. Expert judgement is used to assess these matrix levels.
- The regional population model for gannet is based on the MacArthur Green gannet PVA that has been used previously. For other species the models are developed from the Bayesian state space models produced by Freeman et al 2014. In both cases these are density independent, stochastic models as requested. The method of indicating predicted mortality in the models for gannet and other species is different, but both are valid. Details of the models are presented in the appendix 11E.

Treatment of cumulative impacts in the ES

13.1.4 The selection of sites for the cumulative impacts in the ES is as expected and covers all the sources of impact that have been previously discussed.

13.1.5 To develop regional populations the recent SPA counts have been used and the other colonies have been corrected by trend. It is not an approach that has been used previously, although it is difficult to see how a regional population could be constructed otherwise. For gannet and puffin, where there is basically only one colony this is not an issue.

- Aspects of collision and displacement / barrier impacts have been applied to the sites and species previously identified in the correct manner.

Appendix 11C – Collision Risk

13.1.6 The standard ‘Band’ model of conducting CRM has been followed. This uses the most recent recommendations on avoidance rates and also the values of collisions along with deviation created by the application of SD to the avoidance rate is given.

13.1.7 Screenshots of the spreadsheets set up and the parameters input into them are provided, which would enable recreation of the analysis if required.

Appendix 11D Displacement

13.1.8 A helpful comparison of the outputs of the draft displacement tool ‘seabORD’ and the matrix approach is provided for context.

13.1.9 ICOL have taken the step of having the model run for comparative purposes with that of the SNCB matrix approach.

13.1.10 Displacement and mortality rates as previously agreed have been used and the full tables of displacement values are produced in the appendix. Should it be required alternative values in the tables can be accessed.

13.1.11 The section 11D.3 onward compares the outputs of the matrices with that of the modelling approach used in seabORD.

13.1.12 The models are based on sound science, and produce consistently higher estimates of displacement impact. There is an interesting explanation of the differences which is worth bearing in mind when considering the outputs from the displacement matrices.

13.1.13 The full density maps and displacement matrices are provided at the end of the appendix.

Appendix 11B – Apportioning techniques.

13.1.14 The approach used for apportioning impacts is that recommended at scoping and follows the joint SNCB advice. Unfortunately it appears that the

apportioning algorithm that has been used is the old one which was corrected in December 2016. In that algorithm as the proportion of sea area available decreased then the proportion of birds found also decreased, which shifts the apportioned value in the wrong direction. As mostly areas of sea occupy a relatively narrow range of values this is unlikely to be vitally important and alter the results drastically. However, the updated guidance should have been followed.

- 13.1.15 The relevant guidance document is found on our website at:
<https://www.nature.scot/sites/default/files/2017-07/A2176850%20-%20Interim%20Guidance%20on%20Apportioning%20Impacts%20from%20Marine%20Renewable%20Developments%20to%20breeding%20seabird%20populations%20in%20special%20Protection%20Areas%20-%2021%20Dec%202016.pdf>
- 13.1.16 Otherwise the apportioning has been carried out as requested and the tables of breeding season apportioning are presented in the appendix which is welcome.
- 13.1.17 The allocation of impacts during the non-breeding season follows the method requested at scoping. For both kittiwake and gannet a BDMPS based approach is used. For other species a regional area based on the mean max foraging range is applied. Broadly, apportioning details in the 11B appendix enable thorough investigation of work that has been undertaken, including full apportioning to colonies.
- 11E – Population Models**
- 13.1.18 The general description of the population models matches that requested at scoping. These are density independent stochastic models.
- 13.1.19 Most of the models are based on Bayesian models produced for the Forth and Tay wind farms in the first round. These have then been updated to incorporate new count data that has become available since the last assessment.
- 13.1.20 The gannet model differs as ‘t’ has been derived from the Leslie matrix model used previously.
- 13.1.21 For the EIA report and for the HRA there were both specific SPA population models and regional population models produced.
- 13.1.22 The regional models for kittiwake, guillemot and razorbill were produced from summing the outputs of each SPA model. The Bayesian derived models used matched runs for comparing the impacts, but the gannet PVA applied pre-selected mortality rates without matched runs. Again both techniques produce valid results with slight differences. The annual mortality calculated from the displacement and collision was applied to the populations post breeding.

- 13.1.23 Sabbatical rates were used to discount the size of the adult populations and not integrated into the models. This is not as sophisticated as integrating sabbaticals as a class in the model but acceptable.
- 13.1.24 Outputs from the models (in graphic form for all except gannet) and in tabular form are presented at the end of the appendix.

Notes on the HRA

- 13.1.25 The appendices addressed previously also have a bearing on everything presented in the HRA.
- 13.1.26 Overall, the HRA is adequate and the layout is straightforward. It is relatively easy to follow and the methods used (as in the ES) are as requested in scoping.
- 13.1.27 The approach of taking each SPA and each species in turn means that the focus is clear. The non-breeding season approach is as requested for each group and is applied correctly. Apportioning for the breeding season has been undertaken in a two stage approach as required, although the apportioning error mentioned above is also apparent in the HRA.
- 13.1.28 Impacts to the populations have been applied for gannet immediately, but for other species after 3 years. This is presumably due to difficulty in adjusting the gannet model, we would have preferred this to be consistent across all.
- 13.1.29 The gannet centile metric appears at odds with the ratio metric. Some attempt at explaining this is made, but it is not clear that the underlying reason is resolved. As there will be comparable ratio metrics from all developments then this is not of major significance, but it would be useful to know the cause of this issue.
- 13.1.30 The in combination and cumulative treatments in the HRA are good and clearly set out what has been tested in each case.

The issue encountered with the NnG application and EIA report with auk population figures, is not an issue with this assessment as ICOL have used the latest raw count figures.

Useful graphs of population counts are provided for most species.

13.2 MSS Comments (on draft Chapter and SNH Comments)

- 13.2.1 MSS comments on the ICOL draft EIA ornithology chapter and associated appendices, and also the advice on these that SNH provided subsequently on June 11 are:
- 1 Appendix 11D Displacement and Barrier Effects does not provide the minimum or maximum prey levels, whether bird tracks around any windfarms

were calculated using the “perimeter” or the “A*” method, nor the seed number assumed in the SeabORD model for each species and SPA scenarios of interest. This information should be provided as without it the results cannot be replicated or fully interpreted.

- 2 The advice from SNH indicates than a previous version of the SNH apportioning calculation that contained an error may have been used by ICOL, and that “this will have had a probably small, but unknown impact on the proportions of mortality assigned to each of the SPAs”. MSS advise that ICOL check what difference this error in the apportioning calculation makes to the apportioned effects and indicate what if any implications this would have on any conclusions reached. Alternatively the PVAs could be re-run with the updated apportioned effects.

- 13.2.2 Further information regarding SeaBORD was requested from ICOL by MS-LOT on 18 June 2018. This information has not yet been received.

14 Chapter 12 – SLVIA

14.1.1 MS-LOT received advice from Jacobs and SNH in relation to Chapter 12. This advice is narrated below.

14.2 Jacobs Comments

14.2.1 Jacobs advised that they considered that all relevant receptors have been addressed within the study area up to 50 km and that the viewpoint assessment is representative of a range of receptors at different distances from the development. Jacobs stated that the approach taken to SLVIA is reasonably robust, however, there are areas where the assessment could be strengthened.

14.2.2 The SLVIA does not express the turbine dimensions which have been assessed, which may open up the SLVIA to challenge at a future date. The establishment of the study area and the significance of effects within the SLVIA appears to be founded on the principles of visual acuity and that beyond a distance of 50 km an object 5 m wide is not visible (and at 30 km an object of 3 m is not visible). Paragraph 450 of the Scoping Report stated that:

“Despite the increase in turbine height, the 50 km Study Area used for the Original Development is still considered valid for SLVIA of the Revised Development. This is due to visual acuity and the curvature of the earth restricting visibility beyond this distance. WTGs at this distance are unlikely to give rise to significant effects, which is the focus of the EIA.”

14.2.3 The basis for 50 km study area could be challenged in respect to the applicant’s statements regarding visual acuity and subsequently the potential for significant effects. Paragraph 87 of the SLVIA states *“Consequently, when visible in favourable conditions, a slim object, approximately three metres in width will be at the limit of perception by the human eye at a distance of 30 km. An object would need to be greater than five metres wide to be visible at or beyond 50 km”*. Further to this, paragraph 88 states that *“A combination of curvature of the earth and acuity of the eye would limit the potential for seascape, landscape and visual effects especially beyond 50 km distance. The assessment has been carried out on the basis of clear visibility and maximum anticipated brightness”*. While this principle might be generally accepted in the landscape profession the issue is that turbines of a height of 291 m are likely to require towers in excess of 5 m, possibly more than 10 m in diameter. Furthermore, the turbine blades could potentially be in excess of 5 m across at their widest point. On the basis of visual acuity set out by the applicant, if the towers were 10 m in diameter they would theoretically be visible up to a distance of 100 km.

14.2.4 While atmospheric conditions would play a considerable part in the nature of the actual visibility experienced, it is considered that Angus Council’s request for a study area extending to 60 km may be valid (notwithstanding that SNH

agreed a study area of 50 km). A turbine of 100 m height is typically assessed out to 30 km, a turbine at 150 m to 40 km. SNH's Visual Representation of Wind Farms (2017) suggests that a turbine of over 150 m is assessed to 45 km and that a larger study area for offshore turbines may be required. Although it is acknowledged that SNH agreed the scope of the study area, limiting the study area to 50 km could be challenged. These are some of the largest turbines proposed in Scottish waters, at 291 m.

- 14.2.5 Furthermore, in addressing East Lothian Council's ("ELC") request for a viewpoint from Berwick Law the applicant has acknowledged that the turbines would be visible at a distance in excess of 50 km, which could be construed as contradicting their argument for limiting the study area to 50 km.

Cumulative (baseline)

- 14.2.6 With cumulative assessment the approach has been to assess the introduction of Inch Cape into the existing baseline environment/situation which includes built and consented turbines (including Seagreen and Neart na Gaoithe (NNG) wind farms). The cumulative aspect of the SLVIA has focussed on developments at planning and scoping stage. This may confuse some parties expecting cumulative effects arising from Inch Cape, Seagreen and NNG to be covered in the cumulative section of the chapter.

- 14.2.7 The photomontage views only illustrate Inch Cape and do not depict the 'baseline situation' i.e. the built/consented wind farms including Seagreen and NNG, unbuilt wind farms being illustrated in the cumulative wireline views only. This could be viewed as a shortcoming to the submission and could be challenged in that the visualisations do not properly depict the view which will arise if all developments are constructed. This also relates to the assessment and illustration of cumulative night-time effects as a result of the lighting.

Seascape/landscape Assessment

- 14.2.8 The Seascape/Landscape assessment appears biased towards the visual aspect of Inch Cape, not necessarily how the seascape changes and whether or not a new seascape character unit is created. Furthermore, it is not clear how the seascape character has been changed as a result of Seagreen and NNG, the assessment gives the impression it has been undertaken on the premise the baseline comprises an 'undeveloped or open sea' situation.

Lighting

- 14.2.9 Correspondence suggests that a night-time lighting assessment would be undertaken but this does not appear to be the case. In respect of lighting, the applicant has provided night-time views to a selection of viewpoints and a technical appendix on the visibility of lighting, and a statement within the SLVIA that effects of the lighting would be the same or less than the effects identified for the 'daytime' scenario. While technically accurate, this approach

could be challenged particularly in respect of locations within East Fife where theoretically the lights to Inch Cape and NNG would be visible. While depiction of the lighting in printed media for all developments would be challenging a more comprehensive discussion on the effects of lighting on the seascape and for visual receptors (as the applicant appears to have volunteered) would be recommended, particularly as there are very few static light sources at present. It is recommended that illustration via computer software is considered.

Visualisations

- 14.2.10 The wirelines which have been presented do not reflect SNH's guidance, presenting the landform as a mesh and not as a 'ridgeline' view. SNH 's guidance states that ... 'The DTM is most commonly drawn as a mesh seen in perspective. While this is a faithful depiction of the landform as represented by the DTM, it can often result in the more distant parts of the scene becoming unreadable as the grid lines get closer together, eventually merging into solid colour. This is not helpful and in these circumstances grid lines should, if possible, be removed to maintain a simple image. Only the outline of the topographic features in the scene, approximating to the lines one might draw as a sketch of the scene, should be shown.'

Photomontages

- 14.2.11 The photography is of good quality and should address previous concerns set out by consultees. As previously described above (section 4.1.5.1), the photomontages only depict the introduction of Inch Cape into the view and not unbuilt baseline/consented turbines (including Seagreen and NNG). In some instances, what would effectively be the baseline view without Inch Cape will change substantially due to the construction of these turbines, with subsequent change as a result of Inch Cape. In this regard the applicant could be accused of misrepresenting the change in the views particularly in respect to Seagreen and NNG (this would include the views from Berwick Law and potentially the perceived effect on the Bass Rock and the Isle of May).

In summary

- 14.2.12 The SLVIA has largely addressed the requirements of the Scoping Opinion. The methodology follows the standard principles of the appropriate SLVIA guidance. There is a risk however that the 50 km study area is not adequate as previously raised by some consultees with particular reference to the extent of the study area in relation to visual acuity.
- 14.2.13 Mitigation is achieved through 'embedded' measures such as the colour and the similarity of the turbines within the development. Mitigation of effects is also achieved through layout design. As the layout cannot be 'fixed' at this time, there is the potential that design considerations/aims cannot be fully realised.

- 14.2.14 The applicant has assessed all built/consented wind farms that have been provided as part of the ‘baseline assessment’. This is an acceptable approach; however, the baseline images provided do not illustrate the unbuilt but consented sites (they are shown in wirelines only). Arguably, the baseline images underplay the likely impacts on seascape, landscape and visual receptors.
- 14.2.15 SNH may still have concerns regarding the effects of Inch Cape in combination with Seagreen and NNG due to the potential changes to the layout (from what is notionally consented and what would be built).
- 14.2.16 The applicant has included assessment of additional viewpoints, but not to all of the visualisations provided; including the wirelines provided by ELC (see GA table, Appendix A).

14.3 SNH Comments

- 14.3.1 SNH’s advice was provided with reference to the responses provided by SNH to the Scoping Report and subsequent Marine Scotland Scoping Opinion. Pre-application consultation meetings took place on 17 August 2017, 29 September 2017 and 07 March 2018. SNH advised that an incorrect meeting date of 29 September 2018 had been provided in Table 12.2.
- 14.3.2 SNH advised that all scoping advice was given in the context of the inclusion of a maximum tip height of 301 m within the Design Envelope. These parameters are considerably larger than any turbines considered by SNH to date. SNH highlighted that flexibility is required in the evolution and agreement of assessment methodologies given the evolution of wind farm technologies and the understanding of their impacts.
- 14.3.3 SNH advised that they were unable to review Appendix 12G (Additional Wirelines) for information as it was not provided.
- 14.3.4 SNH presented their advice in two parts. The table below presents their advice as provided at Scoping, along with comments on information or changes that SNH feel need to be made. SNH have then provided further information regarding a number of issues identified by them that should be actioned with respect to the draft SLVIA provided by ICOL, prior to the submission of an application.

Table 01 – SNH Content Review

No.	SNH Scoping Advice	MS Scoping Opinion	Comments	Recommendation
1	Request better explanation of the approach taken to wind farm design and the design evolution addressing issues of horizontal and vertical spread, spacing and visual complexity and cumulative issues of design in particular with Neart na Gaoithe		EIAR Appendix 6A: Design considerations part of 2018 application. Agreed that WCS for baseline would be Inch Cape with 2014 layouts for NnG and Seagreen.	SNH detailed review not undertaken at Gatecheck stage.
2	<p>Explanation required of gaps in layout and subsequent uneven spacing and incoherent design.</p> <p>Clear explanation of technical constraints that have influenced turbine layout.</p>	SMs advise ICOL provide a clear explanation of the approach being taken to the wind farm design and the choice of layout taking into account advice from SNH and advice received previously from Angus Council.	<p>Explanation provided during pre-app consultation that benthic issues in particular irregular sea bed floor explain gaps in layout which cannot be mitigated.</p> <p>EIAR Appendix 6A: Design considerations part of 2018 application information set out other technical/physical issues which can affect spacing and turbine layout – but doesn't address issues of impact on visual composition of wind farm, e.g. illogical changes in density, spacing etc.</p>	Suggest Appendix 6A amended to make link between technical/physical constraints in particular in Table 6A.1 and effects on wind farm composition.
3	Agreement on how to approach the cumulative impact assessment in particular of Inch Cape in combination with Neart na Gaoithe.		Chapter 12 page 8 states it was agreed that the [cumulative assessment] should be carried out based on the consented 2014 NnG and Seagreen schemes.	Cumulative assessment and visualisations assess the proposed 2018 Inch Cape layout in addition to the consented layouts for Neart na Gaoithe and Seagreen. In SLVIA Table 12.20 the 2018 scoping layouts for NnG and Seagreen are not included and therefore we assumed have not been assessed as part of the cumulative assessment.

4	Exploration of changes in visibility due to increase in turbine heights, modelling incremental increases.	Agree with the suggestion by SNH that a comparison of the model outputs of the increase in turbine size in appropriate increments (either as individual or composite ZTVs) with the ZTV for the 2014 consented scheme is provided to give more detailed information on the amount and range of visibility of the larger turbines.	Discussed provision of ZTVs which modelled increased vertical field of view. ICOL agreed ZTV could be provided on this basis. See Appendix 12E – Seascape, Landscape and Visual Figures (Figures 12.1 -12.34) for horizontal subtended ZTVs.	The ZTV figures presented do not illustrate or model geographically the increase in turbine size from 215 m to 291 m Request further ZTV in line with previous consultation discussion. Further detail provided below.
5	Agreed use of same viewpoint selection as for previous scheme, taking cognisance of sensitive receptor beyond 50 km (see above).	The additional potentially sensitive visual receptors should be as agreed with the relevant local authorities. The SMs agree with the inclusion of wirelines from Berwick Law, Tantallon Castle, Ravenshaugh Sands and Yellow Craig and recommend that the additional viewpoint towards Bass Rock as suggested by ELC is included. That ICOL discuss with Angus Council the inclusion of viewpoints for Cat Law, Dreish and Airlie Monument.	<i>An additional viewpoint at North Berwick Law was agreed following discussions with ELC. Further illustrative wirelines from Airlie Monument in Angus, Tantallon Castle, Ravenshaugh Sands, Yellow Craig and a coastal route view towards Bass Rock in East Lothian have been provided in Appendix 12G. Note that: The additional wirelines are provided for information only and have not formed part of the SLVIA.</i> <i>It was agreed that illustrative wirelines from Cat Law and the Airlie Monument would be provided for information only and are included within Appendix 12G.</i>	As Appendix 12G was not submitted as part of the Gatecheck materials, we have not been able to review this aspect.
6	Exploration of increase in vertical height in wirelines modelling increased vertical point of view.	See 4 above	Discussed during pre-application and consultants to explore. No further information presented during pre-application.	

Further issues identified by SNH

Method for assigning significance of effect

14.3.5 We consider that moderate effects could also be significant (EIAR draft SLVIA 12.7.7). As such in relation to lower magnitude changes on highly sensitive receptors, or greater changes on medium sensitive receptors, in our appraisal we may consider these also to be significant effects. Moderate effects should therefore contain reasoning and justification as to their significance or otherwise.

Assessment for magnitude of change – night-time effects

14.3.6 For both the assessment of impact on seascape and visual receptors, the night-time impacts have not been described which we consider is a **significant omission**. This includes both VPs where photomontages have been provided and for those that do not.

14.3.7 We agreed that only a small number of viewpoints would have photomontages to illustrate likely night-time effects. However we expect the results of this work to be used to inform the assessment of impact on all the viewpoints in the SLVIA. This is particularly an issue where the magnitude of change could increase the level of impact and significance of effect.

Level of effect identified

14.3.8 From a brief review the levels of impact and effect on landscape, seascape and visual receptors seem reasonable. However the main issue will be where ICOL have assessed impacts as 'moderate' and take them to be not significant, whereas we may appraise these as significant (especially in some of the views from Fife, excluding St Andrews). In addition some of the cumulative impacts (in relation to multiple complex ZTVs) in particular sequential cumulative where you have to consider several 'groupings' of onshore development, may have been underestimated. We will consider this further once the full application is lodged and we have considered in more detail.

Cumulative wind farm developments and presentation of sequential assessment

14.3.9 The onshore grouping of wind energy developments is sensible. However the multiple ZTVs that are presented modelling these groups with Inch Cape is complex and also it is difficult to follow where significant sequential impacts are likely to arise. It would be useful to illustrate the visibility to onshore/offshore development by colour coding the roads being assessed (especially the main coastal routes) to clearly display this information. For static views if required, the 'wind rose' type of annotation could be incorporated again to help to explain the multiple complex cumulative impacts that could potentially arise.

Night-time visualisations

14.3.10 Visualisations were provided in low light conditions for four VPs:

- VP 6 Braehead of Lunan
- VP 10 Clifftop path (Victoria Park Arbroath)
- VP12 A92 East of Muirdrum
- VP14 Carnoustie

14.3.11 The baseline photography for VP 10 should be re-taken as the vibrant sunrise colours do not allow for the worst case scenario of lighting to be portrayed.

Visualisations

14.3.12 Photomontages are the key figure in understanding how a development will appear from a given viewpoint, they are widely used by all stakeholders and it is important they are correct. It was agreed during the consultation process that the SNH *Visual Representation of Wind farms (2017)* guidance would be followed when producing the standard 53.5 degree photomontages and wirelines.

14.3.13 The 53.5 degree photomontages and wireline provided at Gatecheck do not follow the guidance as they are printed at an incorrect size, have an incorrect principal distance, and have an incorrect equivalent focal length. This is important as it results in images that will make the development appear further away and smaller than it would in reality. We therefore request these images are corrected to follow the guidance.

ZTVs

14.3.14 We request that ZTVs are included at a sufficient scale and on a 1:50k OS basemap to allow the detail of roads, settlements and routes to be understood. The ones provided at Gatecheck are small scale and do not show this kind of detail. Large scale ZTVs are typically A0 or sectioned A3. Our wind farm visualisation guidance below provides the detail on the correct scale for ZTVs.

Comparative ZTVs and Figures

14.3.15 It would be useful to have additional comparative ZTVs to help us understand the changes between this and the previous application. Figure 12.4, for example, is useful in that it displays the extent to which the main component parts of the turbines (blade tip/hub height/WTG base) for the proposed development are visible. However what we really want to understand is how the vertical extent of this visibility of the turbines has changed from the consented development to the proposed development. As such we request a comparative ZTV illustrating blade tip vs hub height vs WTG base of the consented layout with the proposed layout. We are happy for this to be

provided in a comparative appendix rather than within the main body of the assessment.

Use of terminology

- 14.3.16 We advise that use of the term ‘blade tip’ could misrepresent the nature and extent of turbine blade visibility. In many instances in the draft SLVIA the term ‘blade tip’ has been used, when more accurately multiple ‘partial’ or ‘full’ blades (comprising a WCS rotor diameter of up to 125m) are illustrated on the wirelines.
- 14.3.17 In the assessment of impact we expect an objective and realistic description of the extent of structures visible, in line with GLVIA 3rd edition.

15 Chapter 13 – Archaeology

15.1.1 The embedded mitigation measures include the commitment to develop a Written Scheme of Investigation, Archaeology Exclusion Zones and Protocol for Archaeological Discoveries. However, no reference is made to Condition 30 of their existing section 36 consent, which requires the development and implementation of a Marine Archaeological Reporting Protocol (“MARP”) in consultation with Historic Environment Scotland (“HES”). Specific reference to this condition may be helpful. MS-LOT had no comments to make on Appendix 13A (Geoarchaeological Cable Corridor).

15.1.2 Jacobs provided the following comments on the Cultural Heritage and Marine Archaeology Chapter.

15.2 Jacobs Comments

15.2.1 Jacobs stated that ICOL have not assessed setting impacts on East Lothian Council assets or any Historic Environment receptors in East Lothian. They recommended that these are revisited and assessed as these are a gap in the work which have not, to Jacobs’ knowledge, been agreed with MS-LOT and/or consultees. Jacobs recommend that further evidence (e.g. emails) is provided within the EIAR with regard to the conclusions of additional consultation.

15.2.2 There is no figure 13.2 within the EIA report, although this is referred to. This is required to allow review of the setting impacts on cultural heritage receptors arising from the Revised Development in combination with other developments.

15.2.3 Cross-reference is provided to an unknown figure which is a key source to inform the assessment (see paragraph 39). This is required to allow review of the setting impacts.

15.2.4 Consideration should be given to the assessment of ‘Major’ in paragraph 89. Accordingly, this will lead to a significant effect on Bell Rock Lighthouse.

15.2.5 It is recommended that the assessment made for the potential cumulative effect on the setting for Tenstmuir Coastal Defences is revisited. The conclusion of ‘moderate’ and therefore no significant cumulative effect requires stronger justification.

15.2.6 Jacobs also advised that the cross-reference provided in paragraph 107 requires clarification and that whilst paragraph 109 states a ‘Major’ effect no mitigation is provided.

15.2.7 Jacobs advised that there are several gaps and inconsistencies within this chapter which require attention. The omission of several figures did not allow a full review to be carried out.

- 15.2.8 Further justification and/or consultation is required to scope out the assessment of setting impacts on Historic Environment receptors in East Lothian. In recognition of the comments made for SLVIA, should the assessments change within Chapter 12, then further consideration may be required to how the setting may affect cultural heritage receptors.

16 Chapter 14 – Commercial Fisheries

16.1.1 MS-LOT recommend that Chapter 14 is updated throughout to include recent developments regarding the re-establishment of the Commercial Fisheries Working Group and clear timescales for its re-establishment should also be set out. The following comments were provided by MSS.

16.2 MSS Comments

16.2.1 ICOL were advised by the Scottish Ministers in the Scoping Opinion to work with the Scottish Fishermen’s Federation agree the wording of consent conditions and the Fisheries Management and Mitigation Plan prior to application submission. No comments regarding this are made at Page 7 of the document and some reference to this advice is made in Page 23. These two sections should be cross-referenced for clarity.

16.2.2 At Page 11, ICOL express their commitment to the removal of ‘dropped objects’ from the seabed floor, where possible, however, there is no stated protocol for cases where retrieval of dropped objects is not possible. This section should include further consideration of these circumstances. MS-LOT advise that it may be beneficial to consider the updated Dropped Objects Policy and Guidance being prepared by Marine Planning and Policy.

16.2.3 On Page 11 it is stated that discussions on modifications to bottom towed fishing gears are on-going. However, no mechanism for rolling out these modifications or timeframes has been included and should be provided.

16.2.4 At Page 71, Paragraph 203, ICOL states that there will be a habituation period by scallop dredgers to feel confident enough to fish within the development area. However, no mitigation is proposed for accelerating habituation, and therefore minimising impacts during operation. ICOL should consider possible mitigation measures (e.g. gear trials) further. Some reference to mitigation options exists in paragraph 206, but no prior reference to these was made earlier in the document. An explicit commitment to mitigation measures should be included.

16.2.5 On Page 69, Paragraph 193 ICOL state that the data provided by Marine Scotland spans from 2006 – 2016. This figure this is incorrect and should be amended to 2007 – 2016.

16.2.6 On pages 28 and 29, the legends for Figures 14.2 and 14.3 should explain that these are the figures for annual landings, as averaged for 2011 – 2016. Legends for all figures should be checked for accuracy.

16.2.7 Please note, that on Page 2 there is a duplicated reference to the “Scallop Committee of Scottish White Fish Producers Association”. Several typographical errors were spotted in Pages 62 to 73 and these should be corrected prior to submission.

17 Chapter 15 – Shipping and Navigation

- 17.1.1 Paragraphs 37 and 52 onwards should be amended for consistency, as per the comments related to Chapter 14 (Commercial Fisheries). Further clarification is also required on the proposed additional mitigation to reduce the significant cumulative effects on commercial vessels and commercial fishing vessels during the operation and maintenance phase. The mitigation listed in Table 15.12 should be linked to the impacts the mitigation is intended to address (Table 15.15).
- 17.1.2 Further detail should also be provided on the proposed mitigation measure, “additional temporary buoyage” included in Table 15.15. If buoyage is utilised on a temporary basis only, it would not lessen long-term impacts during the operation and maintenance phase). The current presentation of this mitigation infers that it would be applied during the construction phase.
- 17.1.3 Information regarding Safety and Exclusion Zones should be updated as per MS-LOT comments in relation to Chapter 7.
- 17.1.4 Further detail should be added to Table 15.5 regarding consultation with the Maritime and Coastguard Agency regarding the scope of the assessment.
- 17.1.5 MS-LOT do not have any comments to make on Appendix 15A.

18 Chapter 16 – Socio Economics

- 18.1.1 MS-LOT advise that confirmation that the developments considered within the CIA for this receptor reflect the most recent designs at the time of submission.
- 18.1.2 Furthermore, Jacobs advised that further justification should be included to support the proposed mitigation measure relied upon in the CIA (“addressed through skills and training initiative and the importance of such labour into the catchment area attracted by the available jobs.” For example, the adoption of this mitigation measure has been used to justify the assessment of a ‘major (negative)’ impact to a ‘major (positive)’ impact under the Cromarty Firth ‘High Scenario’.
- 18.1.3 The Marine Analytical Unit (“MAU”) within Scottish Government provided extensive comments on the application to MS-LOT, advising that the assessment should be re-done prior to final submission. Their advice is outlined below.

18.2 MAU Advice

- 18.2.1 Further consideration of displacement is required within this EIA report. A key element of the renewable energy is to substitute conventional electricity generation with renewable sources, including offshore wind. Unless an overall electricity energy deficit can be demonstrated for Scotland, the economic impact assessment needs to account for the fact that the renewable energy from the Inch Cape development will displace electricity from conventional generation, and therefore associated jobs and gross value added (“GVA”). This consideration is not only important for assessing the sizes of the net employment and GVA impacts, but also the geographic redistribution of jobs across Scotland and the UK. Until this is addressed, the socioeconomic analysis provides a credible assessment of the economic impacts of the development, and that these are being overstated.
- 18.2.2 MAU also advised further consideration is needed regarding the estimation of wider economic impacts. The application of multipliers to determine direct and induced employment impacts in the Socio-economic assessment is not consistent with standard practice, and overstate the sizes on the induced impacts. To give an example, in the Base Impact in Table 16.10 for the Economic Study Area – if net additional direct FTE jobs are 133 and the multiplier is 1.41, the net additional economic study area jobs (after the multiplier) will be 188, and not the 321 jobs reported in the table. The application of multipliers in Table 16.10 is conceptually incorrect. The multiplier only generates 55 jobs, in addition to the 133 direct jobs to give a total of 188. This error in the analysis has the impact of overstating the jobs, and ultimately the additional GVA from the development during the construction phase.
- 18.2.3 MAU advise that a key consideration for Socioeconomic Assessments is the

social impacts of a development. This requires looking beyond impacts on GVA and employment to assess, the impact on community level indicators for poverty, demand for public services (education, health), impact on environmental health, etc. Without due consideration to the social impacts, they consider the socioeconomic impact assessment as incomplete.

- 18.2.4 Further comments were also submitted MAU as follows:
- 18.2.5 Page 19, Paragraph 38 – the analysis should include a rationale for choosing the parameter, 60 minutes commute from port, to determine the economic study area.
- 18.2.6 Page 29, Paragraph 81 – the classification of sensitivity of receptor in Table 16.5 is unclear. Is this assessing the responsiveness of an area to generate additional jobs or the risk of pushing up wages in the labour market? If it is ability to create jobs, one would expect areas with low availability of labour and skills to reflect low sensitivity and readily available jobs and skills to reflect high sensitivity.
- 18.2.7 Page 30, Paragraph 87, first bullet – the percentages quoted are incorrect. They need to be weighted by the share of expenditure at each stage.
- 18.2.8 Page 31, table 16.8 – the percentages included in the last row of the table are incorrect. These need to be weighted by the share of expenditure at each stage.
- 18.2.9 Page 32, Paragraph 91 – refers to the skilled and semi-skilled workforce in the Economic Study Area as representing a “pool of potential labour and skills” that could act as “a labour market resource, upon which the Development can draw in labour market requirements...” While this is true, it is important to consider whether or not this skilled and semi-skilled workforce is already employed in the area and the extent of unemployment, as this will inform the likely extent of displacement further on in the analysis. This is also relevant for para 95, with regards up-skilling.
- 18.2.10 Page 32, Paragraph 94 – refers to the “leakage rate out of the Economic Study Area in the ‘Base’ impact scenario to be low (12 per cent)...” This is incorrect, from Table 16.9, 12% is in fact the retention (rather than leakage) for the Economic Study Area.
- 18.2.11 Page 33, Table 16.9, it is not clear how the distribution of jobs across Economic Study area, Rest of Scotland, Rest of UK and Overseas is determined. This does not appear to match the distribution of expenditure in Table 16.8. If assumptions have been made about varying job intensity of expenditure in the Economic Study Area, Rest of Scotland, Rest of UK and Overseas, these need to be set out clearly as they are crucial to the economic impact assessment.

- 18.2.12 Page 33, Paragraph 99 – it is not clear where the figures referred to in this paragraph are from. They do not match the figures provided in Table 16.10.
- 18.2.13 Page 34, Paragraph 100 – the assumed GVA per employee value of £64,000 seems very low for the type of works. Marine Scotland estimate using the Scottish Annual Business Survey data that GVA per worker for marine construction jobs to be around £129,000 per year. Please see [Marine Scotland Topic Sheet Number 99](#) (V4) for further information.
- 18.2.14 Page 34, Table 16.10 – as noted in the general comment above. The application of multiplier (1.41) to determine wider jobs impacts (direct, indirect and induced) is conceptually incorrect. This overstates all the “Total Net Additional Jobs” figures, and ultimately the GVA figures. Given the construction jobs are temporary, it is not clear if the table is reporting total FTE job years or average annual jobs.
- 18.2.15 Page 38, Table 16.12 – appears to assume a multiplier of 1.8 in determining the number of indirect jobs. The socioeconomic assessment should reference the source for this multiplier figure.
- 18.2.16 Page 38, Paragraph 111 – suggests that the FTE jobs generated at the Operation and Maintenance stage will be over a period of 50 years. This does not appear to be consistent with standard assumptions of the life of such development (25 years).
- 18.2.17 Page 40, Table 16.14 – should the last section of the Table refer “GVA Total O&M” and not “GVA Total CAPEX”, as this is included in the Operation and Maintenance section.
- 18.2.18 Page 39, Paragraph 116 – appears to suggest GVA per worker in the Operation and Maintenance phase is around £128,947 per annum. The socioeconomic assessment should reference the source for this figure.
- 18.2.19 Page 42, Paragraph 121 – The socioeconomic assessment should make explicit the assumptions underlying the numbers and also reference them, as appropriate.
- 18.2.20 MS-LOT concur with much of the advice provided by the MAU and advise that ICOL update this Chapter to set out the socio-economic analysis and underlying assumptions more clearly. However MS-LOT recognise that the scoping opinion issued advised that only impacts on the construction employment and the wider economy should be assessed in the Revised Development EIA , both at a project level and cumulatively. Further, source references should be included wherever possible. Further justification regarding the mitigation of impacts within the CIA section is also required.

19 Chapter 17 - Aviation

- 19.1.1 Jacobs advise that the assessment methodology for significance used in this Chapter is revised, as currently there is no category for ‘major/moderate’ impacts. Consequently, effects identified in this Chapter as ‘major’ or ‘moderate’ are considered significant in EIA terms. For consistency, it is recommended that a justification for deviating from the methodology outlined in Chapter 4 within this Chapter is included.
- 19.1.2 Table 17.8 should be updated as design mitigation should be considered as embedded mitigation (as per Section 4.7.2 of Chapter 4) as not as a mitigation measure. Section 17.5.2 should also be updated to place the sub-section ‘consent conditions’ within a separate section entirely to avoid any confusion between the conditions attached to their current consent (which may or may not be attached to any new consent (if granted)).

20 Gap Analysis

20.1.1 Jacobs conducted a review of the Gap Analysis provided by ICOL. Each entry was cross checked to see if the comments were encompassed adequately within the EIA report and supporting documentation. Each comment within the table was assigned as either; resolved, partially resolved, unresolved or N/A. A copy of the Gap Analysis document with comments provided by Jacobs is included at Appendix A.

20.1.2 Consideration was given to the justifications provided by ICOL where issues have not been addressed, or have only been partially addressed. This review was conducted against scoping and post-scoping consultation. The majority of the issues raised have been resolved, however, there are a number of issues which have been partially resolved or remain unresolved. Partially resolved issues mainly relate to receptors requiring ongoing consultation or mitigation through consent conditions. Issues that are classified as unresolved have not been addressed within the EIA report or have not received a response from ICOL (predominantly relating to marine mammals and commercial fisheries).

Classification	Number of issues
Resolved	237
Partially resolved	48
Unresolved	9

20.1.3 Jacobs highlighted that a number of points raised in the Scoping Opinion have not been captured within the Gap Analysis document, including the following:

- Angus Council comments on cultural heritage, specifically concerns over impacts on Bell Rock Lighthouse and Ladyloan Signal Tower
- Royal Yachting Association comments with regards to getting details of the scheme into the new book of Sailing Directions and Anchorages as additional mitigation and the requirement for increased watch keeping effort in place where other developments might result in cumulative impacts.
- A number of MSS comments on ornithology
- A number of MS-LOT comments on marine mammals

20.1.4 Further to this, Jacobs highlighted the following comments on the layout of the Gap Analysis document itself:

- Applicant responses still pending or considered only partially resolved.
- Chapter/paragraph details where comments have been addressed (Columns G and H (Appendix A)) are not consistently provided, or required to be more specific.
- A summary of the consultee responses (Column K) has not been consistently provided.

- Column M 'Action required' should be completed for all points in this table, whether this is to specify details of further action or 'None'.
- Information on evidence provided to MS-LOT (Columns N and O) is not consistently provided.
- When advice from a different stakeholder has been followed for a specific issue, it would be helpful to provide specific comment reference numbers (i.e. those in Column C), for the reader.