

1. Appropriate Assessment

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND APPLICATION FOR A MARINE LICENCE UNDER THE MARINE (SCOTLAND) ACT 2010 AND THE MARINE AND COASTAL ACCESS ACT 2009 FOR THE CONSTRUCTION AND OPERATION OF KINCARDINE OFFSHORE WINDFARM LIMITED

AND

APPLICATION TO VARY CONSENT UNDER SECTION 36C OF THE ELECTRICITY ACT 1989.

MARINE SCOTLAND’S ASSESSMENT OF THE PROJECT’S IMPLICATIONS FOR DESIGNATED SPECIAL AREAS OF CONSERVATION (“SACS”), SPECIAL PROTECTION AREAS (“SPAS”) AND PROPOSED SPECIAL PROTECTION AREAS (“pSPA”) IN VIEW OF THE SITES’ CONSERVATION OBJECTIVES.

SITE DETAILS: KINCARDINE OFFSHORE WINDFARM LIMITED (“KOWL”) – 15km OFF THE COAST OF ABERDEEN.

Name	Assessor or Approver	Date
Tracy McCollin	Assessor	06 Dec 16
Finlay Bennet and Jared Wilson	Assessor	22 Dec 16
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Section 36 Variation 24 November 2017*		
Tracy McCollin	Assessor	22/02/2018
Gayle Holland	Approver	22/02/2018

Appropriate Assessment

* Having been granted a marine licence and section 36 consent on 07 March 2017 KOWL submitted an application for a section 36 variation on 24 November 2017, which was accepted on 27 November 2017. This required a further appropriate assessment and this document has been updated to reflect the information received and the advice provided by SNH. The changes are in:

Sections 8 and 4

Paragraphs 1.2, 4.2, 5.6, 8.1.1, 11.6, 11.8, 12.3 and 12.5

Since the original AA was completed in February 2017 The Conservation of Habitats and Species Regulations 2010 have been revoked. Therefore in terms of the updates to the AA, any references to The Conservation of Habitats and Species Regulations 2010 should be read as The Conservation of Habitats and Species Regulations 2017.

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MARINE SCOTLAND'S ASSESSMENT OF THE PROJECT'S IMPLICATIONS FOR DESIGNATED SPECIAL AREAS OF CONSERVATION ("SACS"), SPECIAL PROTECTION AREAS ("SPAS") AND PROPOSED SPECIAL PROTECTION AREAS ("pSPA") IN VIEW OF THE SITES' CONSERVATION OBJECTIVES.

APPLICATION FOR CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AND APPLICATION FOR MARINE LICENCES UNDER THE MARINE (SCOTLAND) ACT 2010 AND THE MARINE AND COASTAL ACCESS ACT 2009 FOR THE CONSTRUCTION AND OPERATION OF THE KINCARDINE FLOATING OFFSHORE WINDFARM AND APPLICATION TO VARY CONSENT UNDER SECTION 36C OF THE ELECTRICITY ACT 1989

SECTION 1: BACKGROUND

1 Appropriate Assessment ("AA") Conclusion

1.1 MS-LOT concludes that, based on the content of the following assessment the proposed KOWL project will not on its own or in combination with other projects adversely affect the integrity of Fowlsheugh SPA, Buchan Ness to Collieston Coast SPA, Troup, Pennan and Lion's Heads SPA, or Forth Islands SPA.

1.2 A marine licence and Section 36 consent were granted to KOWL on 07 March 2017. On 24 November 2017 KOWL submitted an application for a Section 36 variation, which was accepted on 27 November 2017, and a further AA was undertaken. On the basis of the information provided in the [HRA Variation](#) documentation and advice provided by SNH, MS-LOT have no reason to change the conclusion as outlined above.

2 Introduction

2.1 This is a record of the appropriate assessment ("AA") undertaken in regards to Kincardine Offshore Windfarm Limited ("KOWL") proposal to develop a floating offshore windfarm 15km off the coast of Aberdeen. This assessment is required to be undertaken under Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ("the Habitats Directive") under a process referred to as Habitats Regulations Appraisal ("HRA").

2.2 As the KOWL proposal is for a site some of which falls within 12 nautical miles ("nm") of the mainland and some of which is more than 12 nm from the mainland this will be implemented by the following regulations (referred to in this assessment as "the Regulations"):

- Regulation 61 of the Conservation of Habitats and Species Regulations 2010 for Section 36 consents;
- Regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994 for marine licence applications for the part of the project within 12 nautical miles ("nm") of the mainland; and

- Regulation 25 of the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 for the part of the project that is outside of 12 nm
- 2.3 The AA has been undertaken by the Marine Scotland Licensing Operations Team (“MS-LOT”) and Marine Scotland Science (“MSS”) on behalf of the Scottish Ministers.
- 3 Background to including assessment of new marine SPAs
- 3.1 Scottish Ministers, as a 'competent authority' under the Regulations, must be certain that the proposal will not adversely affect the integrity of any European site (special areas of conservation (“SACs”) and special protection areas (“SPAs”)) either alone or in combination with other plans or projects before authorisations can be given for the proposal.
- 3.2 In Scotland, Scottish Ministers are currently in the process of identifying a suite of new marine SPAs. In 2014 advice was received from the statutory nature conservation bodies (“SNCBs”) on the sites most suitable for designation and at this stage they became draft SPAs (“dSPAs”). Once Scottish Ministers have agreed the case for a dSPA to be the subject of a public consultation, the proposal is given the status of proposed SPA (“pSPA”) and receives policy protection, which effectively puts such sites in the same position as designated sites, from that point forward until a decision on classification of the site is made. This policy protection for pSPAs is provided by Scottish Planning Policy (paragraph 210), the UK Marine Policy Statement (paragraph 3.1.3) and the National Marine Plan for Scotland (paragraph 4.45).
- 3.3 It is not a legal requirement under the Habitats Directive or relevant domestic regulations for this assessment to assess the implications of the proposal on the pSPAs. The assessment includes an assessment of implications upon those sites in accordance with domestic policy. Scottish Ministers are also required to consider article 4(4) of Council Directive 2009/147/EC on the conservation of wild birds (“the Birds Directive”) in respect of the pSPAs. The considerations under article 4(4) of the Birds Directive are separate and distinct to the considerations which must be assessed under this Habitats Directive assessment but they are, nevertheless, set out within this assessment (see paragraphs 16.1-16.2).
- 3.4 In accordance with regulation 50 of the 1994 Regulations, regulation 27 of the 2007 Regulations and regulation 63 of the 2010 Regulations the Scottish Ministers will, as soon as reasonably practicable following the formal designation of the pSPAs, review their decisions if the proposal is authorised. This will include a supplementary AA being undertaken concerning the implications of the proposal on the sites as designated (as they are currently pSPAs their conservation objectives are currently in draft form, their conservation objectives are finalised at the point the sites are designated).

4 Details of proposed operation

- 4.1 KOWL is a proposed demonstrator floating offshore windfarm development that is located to the south east of Aberdeen, approximately eight miles from the Scottish coastline. The development is considered a commercial demonstrator site, which will utilise floating semi-submersible technology to install six or eight wind turbine generators (WTG), with a combined maximum generating capacity of 50 MW, in approximately 60 to 80 m of water. The proposal also includes inter-array cabling to the connection point at the onshore Redmoss substation, Altens, Aberdeen. A full project description can be found in chapter 2 of the KOWL ES.
- 4.2 On 24 November 2017 KOWL submitted an [application](#) under Section 36C of the Electricity Act 1989 to vary the consent granted under Section 36 of the Electricity Act 1989 to KOWL on 07 March 2017. The application was accepted on 27 November 2017. The change to the project was that KOWL wanted to install up to seven turbines including a temporary data gathering platform of 2 MW. Therefore the turbines will be between 2 and 8.4 MW capacity.

5 Consultation

- 5.1 KOWL submitted their application, including the Environmental Statement (“ES”) and information to inform a HRA, on 23 March 2016. MS-LOT accepted the application on 05 April 2016 and the documents were sent out to the SNCBs and other relevant consultees on 08 April 2016 for a 42 day consultation period.
- 5.2 Detailed comments in relation to HRA were received from Scottish Natural Heritage (“SNH”), the Royal Society for the Protection of Birds (“RSPB”), Marine Scotland Science (“MSS”), the Dee District Salmon Fishery Board (“Dee DSFB”) and Whale and Dolphin Conservation (“WDC”). The Scottish Wildlife Trust (“SWT”) did not provide HRA specific comments but noted concerns regarding cumulative impacts. The Esk District Salmon Fishery Board and the Esk River and Fisheries Trust responded and noted that they considered salmon and sea trout migration routes would not be affected.
- 5.3 The Joint Nature Conservation Committee (“JNCC”) were consulted as they are the SNCB for marine areas outwith 12 nm. They responded to say although the development area includes a small section in offshore waters, the turbines themselves and all associated works will be within inshore waters. Given the location, they will not respond to this consultation and defer to SNH.
- 5.4 Further information, including information regarding HRA, was provided by KOWL in response to issues raised by Scottish Natural Heritage (“SNH”) and the RSPB. This was sent out for a further 42 day consultation on 23 September 2016.
- 5.5 SNH and RSPB provided further comments in relation to the further information.

5.6 On receipt of the [application](#) for the Section 36 variation a further consultation was carried out. The consultation process started on 29 November 2017 and had a deadline of 12 January 2018 for general consultees and 12 February 2018 for the local authorities. SNH provided further comments.

6 Main issues raised during consultation

6.1 The summary of the main issues raised by the consultees during the consultation on the ES and information to inform a HRA is:

6.1.1 SNH

1.1 Concluded that for this proposal alone there is no adverse effect on site integrity for bird interests. However, for the KOWL proposal in combination with other developments, specifically other wind farms consented for the east coast within species' mean-max foraging range (Hywind and the three Forth and Tay offshore wind farms – Neart na Gaoithe, Seagreen Alpha and Bravo and Inch Cape) SNH could not advise that there will be no adverse effect on site integrity with respect to:

- Black-legged kittiwake – Fowlsheugh SPA
- Atlantic puffin – Forth Islands SPA

6.1.2 RSPB

Object to the KOWL proposal as they felt there was insufficient and inaccurate information to support the AA. Even if the necessary information was provided RSPB consider that a conclusion of no adverse effect on site integrity could not be reached. They consider the existing cumulative or in-combination effects arising from the consented offshore wind in the Forth and Tay region is unacceptable. RSPB also object on the grounds that the potential impacts on draft SPAs have not been considered (since RSPB sent their response these sites are now proposed SPAs, see section 3.2-3.4).

6.1.3 WDC

Had no major concerns of the impact of the KOWL proposal on marine mammals providing that construction is halted if marine mammals are seen in the vicinity of the development and activity does not commence until all animals have left the area for a specified amount of time. WDC noted that the limited number of bottlenose dolphins observed in the vicinity of the area combined with the small scale of the development and the lack of pin or pile driving means the development would be not impact on the integrity of the bottlenose dolphin population in the Moray Firth SAC. However, they requested that an addendum to the ES and HRA be submitted should pile driving be required.

6.1.4 Dee DSFB

Notes the lack of piling removes a significant area of concern and requests that if the level of piling increases they would wish to be consulted. Expressed concern that the electromagnetic fields associated with the cabling for the proposal have not been adequately addressed in terms of potential impact on the migration of salmon as sea

trout and their associated foraging habitats. Requested that a monitoring and research programme be designed, approved and included as a condition of the consenting process and expressed their willingness to work with the developer on such a programme.

6.1.5 SWT

Expressed concerns regarding cumulative impacts of multiple windfarms such as Hywind and the three Forth and Tay offshore wind farms – Neart na Gaoithe, Seagreen Alpha and Bravo and Inch Cape on marine birds and mammals, particularly migratory species.

7 The main issues raised during the consultation arising from the HRA addendum were:

7.1.1 SNH

Reiterated that the additional information contained in the HRA addendum did not change the conclusion of their previous advice and they could not advise that there will be no adverse effect on site integrity with respect to:

Black-legged kittiwake – Fowlsheugh SPA

Atlantic puffin – Forth Islands SPA

They also noted that the addendum included assessment of potential impacts on 10 proposed SPAs and agreed with the other conclusions presented in the revised HRA.

Since the addendum was submitted a further 5 SPAs have been taken forward for public consultation, one of which was the Outer Firth of Forth and St Andrews Bay Complex. SNH provided advice in relation to this site on 02 December 2016 and concluded that there will be no likely significant effect (“LSE”) on any of the qualifying features of this site. At this time SNH also provided advice that non-breeding season assessment should be qualitative, that this had been previously agreed with KOWL and is proportionate with the risk associated to the development.

On 15 December 2016 and 12 January 2017 SNH provided further advice in relation to kittiwake as a qualifying interest of Fowlsheugh SPA in response to information provided by MS. MS summarised the in-combination effects on kittiwake at Fowlsheugh SPA and sought clarity on how closely the threshold of acceptable impact to kittiwake should be approached in the context of a qualitative approach to the non-breeding season effects, as well as asking for further advice on the most appropriate mortality rates in relation to displacement. In response, SNH advised that they were now able to conclude that it had been demonstrated that the KOWL project in combination with the Forth and Tay offshore wind farms, Hywind and EOWDC would not adversely affect the integrity of Fowlsheugh SPA with respect to kittiwake.

7.1.2 RSPB

Maintained their objection on the grounds that a conclusion of no adverse effect on site integrity of relevant SPAs cannot be reached, when the project is considered in combination with other consented east coast wind farms.

8 The main issues raised during the consultation arising from the HRA Variation were:

8.1.1 SNH

Advised that they had no objection to the variation and that they were able to conclude that there would be no adverse effect on site integrity for Kittiwake at Fowlsheugh SPA from KOWL alone or in combination with other projects as outlined in section 11 of this assessment.

SNH agreed that, taking into account the precaution built into estimated mortality rates for Atlantic puffin (see section 12) and the reduction in the number of turbines proposed for the variation, the KOWL project is adding only a very small additional effect to that already predicted from the consented Forth and Tay wind farms. SNH were able to conclude no adverse effect on site integrity for Atlantic puffin at Forth Islands SPA from KOWL alone or in combination with the other East coast wind farms.

SECTION 2: INFORMATION ON NATURA SITES

9 Information about the Natura sites considered in this assessment

9.1 This section provides links to the Scottish Natural Heritage Interactive (“SNHi”) website where the background information on the sites being considered in this assessment is available. The qualifying interests for each site are listed as are the conservation objectives for each. A map (Figure 1) is also provided showing the location of KOWL, the Natura sites and the other developments considered for the in-combination assessment.

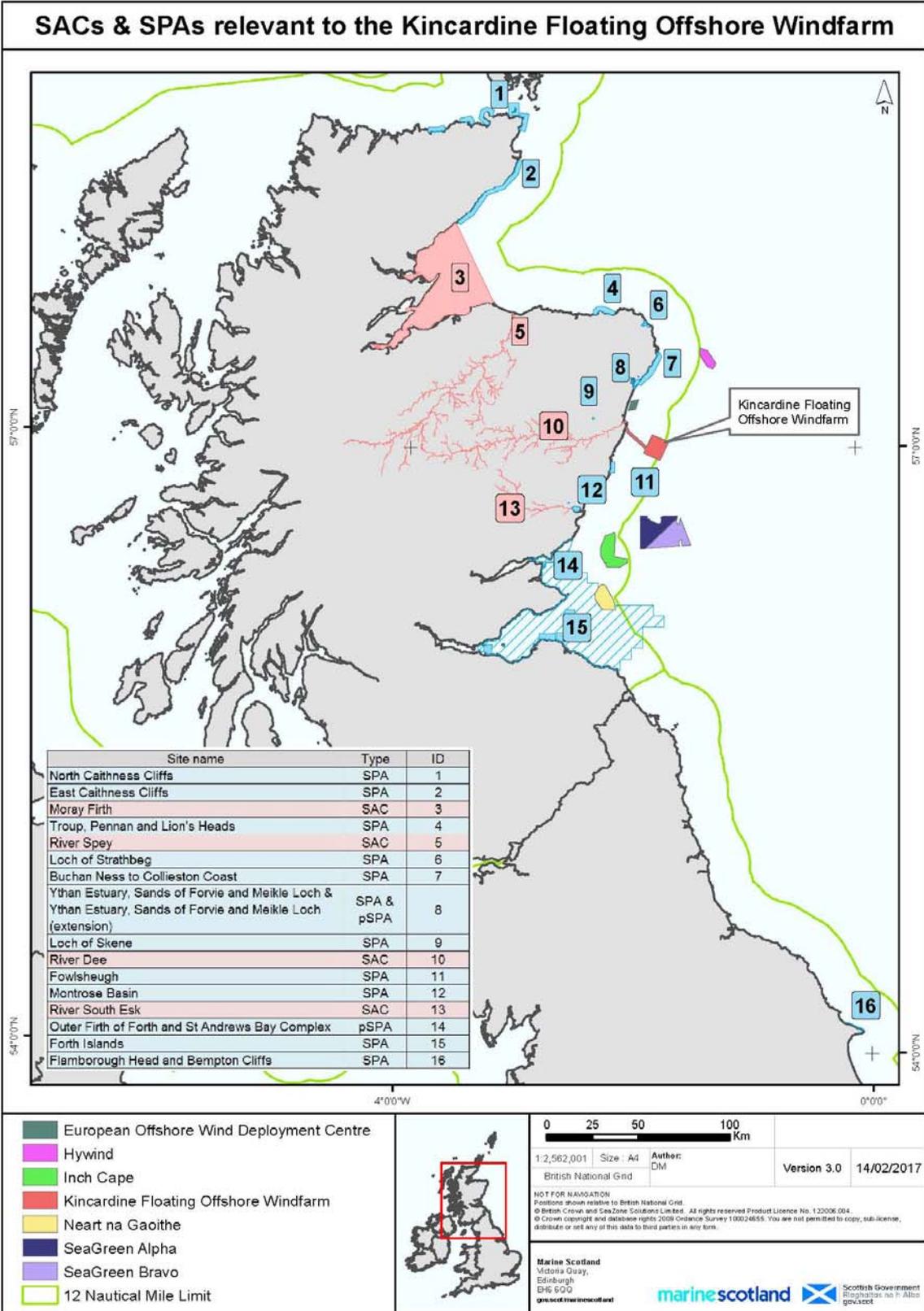


Figure 1 SACs, SPAs and pSPAs relevant to the Kincardine Offshore Windfarm

9.1.1 Name of Natura site affected and current status

1. Buchan Ness and Collieston SPA
http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8473
2. East Caithness Cliffs SPA
http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8492
3. Flamborough Head and Bempton Cliffs SPA
<http://jncc.defra.gov.uk/pdf/SPA/UK9006101.pdf>
4. Forth Islands SPA
http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8500
5. Fowlsheugh SPA
http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8505
6. Loch of Skene SPA
http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8536
7. Loch of Strathbeg SPA
http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8537
8. Montrose Basin SPA
http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8548
9. Moray Firth SAC
http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8327
10. North Caithness Cliffs SPA
http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8554
11. River Dee SAC
http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8357
12. River South Esk SAC
http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8364
13. River Spey SAC
http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8365
14. Troup, Pennan and Lion's Heads SPA
http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8587
15. Ythan Estuary, Sands of Forvie and Meikle Loch SPA
http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8592
16. Ythan Estuary, Sands of Forvie and Meikle Loch (extension) proposed SPA
https://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=10479
17. Outer Firth of Forth and St Andrews Bay Complex proposed SPA
<http://www.snh.gov.uk/docs/A2013181.pdf>

9.1.2 European qualifying interests

Table 1 Qualifying interests for each site

18. Buchan Ness and Collieston SPA	19. East Caithness Cliffs SPA
<ul style="list-style-type: none"> • Fulmar (<i>Fulmarus glacialis</i>), breeding • Guillemot (<i>Uria aalge</i>), breeding • Herring gull (<i>Larus argentatus</i>), breeding • Kittiwake (<i>Rissa tridactyla</i>), breeding • Seabird assemblage, breeding 	<ul style="list-style-type: none"> • Cormorant (<i>Phalacrocorax carbo</i>), breeding • Fulmar (<i>Fulmarus glacialis</i>), breeding • Great black-backed gull (<i>Larus marinus</i>), breeding • Guillemot (<i>Uria aalge</i>), breeding • Herring gull (<i>Larus argentatus</i>),

<ul style="list-style-type: none"> • Shag (<i>Phalacrocorax aristotelis</i>), breeding 	<p>breeding</p> <ul style="list-style-type: none"> • Kittiwake (<i>Rissa tridactyla</i>), breeding • Peregrine (<i>Falco peregrinus</i>), breeding • Puffin (<i>Fratercula arctica</i>), breeding • Razorbill (<i>Alca torda</i>), breeding • Seabird assemblage, breeding • Shag (<i>Phalacrocorax aristotelis</i>), breeding
<p>20. Flamborough Head and Bempton Cliffs SPA</p> <ul style="list-style-type: none"> • Gannet (<i>Morus bassanus</i>) • Guillemot (<i>Uria aalge</i>), breeding • Herring gull (<i>Larus argentatus</i>), breeding • Kittiwake (<i>Rissa tridactyla</i>), breeding • <i>Puffin</i> (<i>Fratercula arctica</i>), breeding • <i>Razorbill</i> (<i>Alca torda</i>), breeding 	<p>21. Forth Islands SPA</p> <ul style="list-style-type: none"> • Arctic tern (<i>Sterna paradisaea</i>), breeding • Common tern (<i>Sterna hirundo</i>), breeding • Cormorant (<i>Phalacrocorax carbo</i>), breeding • Fulmar (<i>Fulmarus glacialis</i>), breeding • Gannet (<i>Morus bassanus</i>), breeding • Guillemot (<i>Uria aalge</i>), breeding • Herring gull (<i>Larus argentatus</i>), breeding • Kittiwake (<i>Rissa tridactyla</i>), breeding • Lesser black-backed gull (<i>Larus fuscus</i>), breeding • Puffin (<i>Fratercula arctica</i>), breeding • Razorbill (<i>Alca torda</i>), breeding • Roseate tern (<i>Sterna dougallii</i>), breeding • Sandwich tern (<i>Sterna sandvicensis</i>), breeding • Seabird assemblage, breeding • Shag (<i>Phalacrocorax aristotelis</i>), breeding
<p>22. Fowlsheugh SPA</p> <ul style="list-style-type: none"> • Fulmar (<i>Fulmarus glacialis</i>), breeding • Guillemot (<i>Uria aalge</i>), breeding 	<p>23. Loch of Skene SPA</p> <ul style="list-style-type: none"> • Greylag goose (<i>Anser anser</i>), non-breeding

<ul style="list-style-type: none"> • Herring gull (<i>Larus argentatus</i>), breeding • Kittiwake (<i>Rissa tridactyla</i>), breeding • Razorbill (<i>Alca torda</i>), breeding • Seabird assemblage, breeding 	
<p>24. Loch of Strathbeg SPA</p> <ul style="list-style-type: none"> • Greylag goose (<i>Anser anser</i>), non-breeding • Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding • Sandwich tern (<i>Sterna sandvicensis</i>), breeding • Svalbard Barnacle goose (<i>Branta leucopsis</i>), non-breeding • Teal (<i>Anas crecca</i>), non-breeding • Waterfowl assemblage, non-breeding • Whooper swan (<i>Cygnus cygnus</i>), non-breeding 	<p>25. Montrose Basin SPA</p> <ul style="list-style-type: none"> • Dunlin (<i>Calidris alpina alpina</i>), non-breeding • Eider (<i>Somateria mollissima</i>), non-breeding • Greylag goose (<i>Anser anser</i>), non-breeding • Knot (<i>Calidris canutus</i>), non-breeding • Oystercatcher (<i>Haematopus ostralegus</i>), non-breeding • Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding • Redshank (<i>Tringa totanus</i>), non-breeding • Shelduck (<i>Tadorna tadorna</i>), non-breeding • Waterfowl assemblage, non-breeding • Wigeon (<i>Anas penelope</i>), non-breeding
<p>26. Moray Firth SAC</p> <ul style="list-style-type: none"> • Bottlenose dolphin (<i>Tursiops truncatus</i>) • Subtidal sandbanks 	<p>27. North Caithness Cliffs SPA</p> <ul style="list-style-type: none"> • Fulmar (<i>Fulmarus glacialis</i>), breeding • Guillemot (<i>Uria aalge</i>), breeding • Kittiwake (<i>Rissa tridactyla</i>), breeding • Peregrine (<i>Falco peregrinus</i>), breeding • Puffin (<i>Fratercula arctica</i>), breeding • Razorbill (<i>Alca torda</i>), breeding • Seabird assemblage, breeding
<p>28. River Dee SAC</p> <ul style="list-style-type: none"> • Atlantic salmon (<i>Salmo salar</i>) • Freshwater pearl mussel (<i>Margaritifera margaritifera</i>) 	<p>29. River South Esk SAC</p> <ul style="list-style-type: none"> • Atlantic salmon (<i>Salmo salar</i>) • Freshwater pearl mussel (<i>Margaritifera margaritifera</i>)

<ul style="list-style-type: none"> • Otter (<i>Lutra lutra</i>) 	
<p>30. River Spey SAC</p> <ul style="list-style-type: none"> • Atlantic salmon (<i>Salmo salar</i>) • Freshwater pearl mussel (<i>Margaritifera margaritifera</i>) • Otter (<i>Lutra lutra</i>) • Sea lamprey (<i>Petromyzon marinus</i>) 	<p>31. Troup, Pennan and Lion's Heads SPA</p> <ul style="list-style-type: none"> • Fulmar (<i>Fulmarus glacialis</i>), breeding • Guillemot (<i>Uria aalge</i>), breeding • Herring gull (<i>Larus argentatus</i>), breeding • Kittiwake (<i>Rissa tridactyla</i>), breeding • Razorbill (<i>Alca torda</i>), breeding • Seabird assemblage, breeding
<p>32. Ythan Estuary, Sands of Forvie and Meikle Loch SPA</p> <ul style="list-style-type: none"> • Common tern (<i>Sterna hirundo</i>), breeding • Eider (<i>Somateria mollissima</i>), non-breeding • Lapwing (<i>Vanellus vanellus</i>), non-breeding • Little tern (<i>Sternula albifrons</i>), breeding • Pink-footed goose (<i>Anser brachyrhynchus</i>), non-breeding • Redshank (<i>Tringa totanus</i>), non-breeding • Sandwich tern (<i>Sterna sandvicensis</i>), breeding • Waterfowl assemblage, non-breeding 	<p>33. Ythan Estuary, Sands of Forvie and Meikle Loch (extension) pSPA</p> <ul style="list-style-type: none"> • Little tern (<i>Sternula albifrons</i>), breeding • Sandwich tern (<i>Sterna sandvicensis</i>), breeding
<p>17. Outer Firth of Forth and St. Andrews Bay complex pSPA</p> <ul style="list-style-type: none"> • Common tern (<i>Sterna hirundo</i>), breeding • Arctic tern (<i>Sterna paradisaea</i>), breeding • Northern Gannet (<i>Morus bassanus</i>), breeding • Common guillemot (<i>Uria aalge</i>), breeding • Herring gull (<i>Larus argentatus</i>), 	

breeding

- Black-legged kittiwake (*Rissa tridactyla*), breeding
- Manx shearwater (*Puffinus puffinus*), breeding
- Atlantic puffin (*Fratercula arctica*), breeding
- Seabird assemblage, breeding
- Shag (*Phalacrocorax aristotelis*), breeding
- Black-headed gull (*Chroicocephalus ridibundus*), non-breeding
- Common gull (*Larus canus*), non-breeding
- Common scoter (*Melanitta nigra*), non-breeding
- Common eider (*Somateria mollissima mollissima*), non-breeding
- Common goldeneye (*Bucephala clangula*), non-breeding
- Common guillemot (*Uria aalge*), non-breeding
- Herring gull (*Larus argentatus*), non-breeding
- Black-legged kittiwake (*Rissa tridactyla*), non-breeding
- Little gull (*Larus minutus*), non-breeding
- Long tailed duck (*Clangula hyemalis*), non-breeding
- Razorbill (*Alca torda*), non-breeding
- Red-breasted merganser (*Mergus serrator*), non-breeding
- Red-throated diver (*Gavia stellata*), non-breeding
- Seabird assemblage, non-breeding
- Shag (*Phalacrocorax aristotelis*), non-breeding
- Slavonian grebe (*Podiceps auritus*), non-breeding
- Velvet scoter (*Melanitta fusca*), non-breeding

9.1.3 Conservation objectives

Table 2 Conservation objectives for bottlenose dolphin

(i) to avoid deterioration of their habitat or **(ii)** significant disturbance to them, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for the qualifying feature; and

To ensure for bottlenose dolphins that the following are maintained in the long term:

(iii) Population of bottlenose dolphins as a viable component of the site.

(iv) Distribution of bottlenose dolphins within site.

(v) Distribution and extent of habitats supporting bottlenose dolphins.

(vi) Structure, function and supporting processes of habitats supporting bottlenose dolphins.

Repeat of (ii) No significant disturbance of bottlenose dolphins.

Table 3 Conservation objectives for Atlantic salmon and freshwater pearl mussel

(i) to avoid deterioration of the habitats of Atlantic salmon and freshwater pearl mussel or **(ii)** significant disturbance to them, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and

To ensure for Atlantic salmon and freshwater pearl mussel that the following are maintained in the long term:

(iii) Population of Atlantic salmon and freshwater pearl mussel, including range of genetic types for salmon, as a viable component of the site,

(iv) Distribution of Atlantic salmon and freshwater pearl mussel within site.

(v) Distribution and extent of habitats supporting Atlantic salmon and freshwater pearl mussel.

(vi) Distribution and viability of freshwater pearl mussel host species.

(vii) Structure, function and supporting processes of habitats supporting freshwater pearl mussel host species.

Table 4 Conservation objectives for SPA species

(i) to avoid deterioration of their habitat or **(ii)** significant disturbance to them, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for the qualifying feature; and

To ensure that the following are maintained in the long term:

(iii) Population of the species as a viable component of the site.

(iv) Distribution of the species within site.

(v) Distribution and extent of habitats supporting the species.

(vi) Structure, function and supporting processes of habitats supporting the species.

Repeat of (ii) No significant disturbance to the species.

Table 5 Conservation objectives for proposed Outer Firth of Forth and St Andrews Bay Complex SPA

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, subject to natural change, thus ensuring that the integrity of the site is maintained in the long-term and it continues to make an appropriate contribution to achieving the aims of the Birds Directive for each of the qualifying species.

This contribution will be achieved through delivering the following objectives for each of the site's qualifying features:

a) Avoid significant mortality, injury and disturbance of the qualifying features, so that the distribution of the species and ability to use the site are maintained in the long-term;

b) To maintain the habitats and food resources of the qualifying features in favourable condition.

SECTION 3: ASSESSMENT IN RELATION TO REGULATION 48 OF THE CONSERVATION (NATURAL HABITATS, &C.) REGULATIONS 1994, REGULATION 61 OF THE CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2010 AND REGULATION 25 OF THE OFFSHORE MARINE CONSERVATION (NATURAL HABITATS, &C.) REGULATIONS 2007

9.2 Is the operation directly connected with or necessary to conservation management of the site?

The operation is not connected with or necessary to conservation management of the site.

9.3 Is the operation likely to have a significant effect on the qualifying interest?

SNH provided advice on 18 May 2016 regarding whether there was likely to be a significant effect on the qualifying interests of the SPAs and SACs identified in table 1 above. A likely significant effect (“LSE”) was identified for the following qualifying interests/sites. The reason for a likely significant effect was that the project was within foraging range, the species were recorded during site surveys and are sensitive to potential impacts notably collision risk or displacement.

Black-legged kittiwake (breeding)

Fowlsheugh SPA

Buchan Ness to Collieston Coast SPA

Troup, Pennan and Lions Heads SPA

Atlantic puffin (breeding)

Forth Islands SPA

Common guillemot (breeding)

Fowlsheugh SPA

Buchan Ness to Collieston Coast SPA

Troup, Pennan and Lions Heads SPA

Herring gull (breeding)

Fowlsheugh SPA

Buchan Ness to Collieston Coast SPA

Troup, Pennan and Lions Heads SPA

Northern Fulmar (breeding)

Fowlsheugh SPA

Buchan Ness to Collieston Coast SPA

Troup, Pennan and Lions Heads SPA

Forth islands SPA

Northern gannet (breeding)

Forth islands SPA

Razorbill (breeding)

Fowlsheugh SPA

- 9.4 As the proposal is likely to have a significant effect on the above qualifying interests Marine Scotland is required to carry out an appropriate assessment in view of the conservation objectives for the qualifying features. For all the other SPA qualifying interests listed in table 1 no LSE was identified due to low numbers recorded or low proportion recorded flying at collision risk height or collision risk mortality is not significant; displacement is not a significant impact or project area is not considered important for these species.
- 9.5 On 02 December 2016 SNH also provided clarification on their advice in relation to the Outer Firth of Forth and St Andrews Bay Complex pSPA. They noted that there are differences between the conservation objectives for the Forth Islands SPA and the draft conservation objectives for the pSPA. For the pSPA there is not a requirement to ensure that the 'Population of the species as a viable component of the site' is maintained. The overall conclusion of the advice for the Outer Firth of Forth and St Andrews Bay Complex pSPA was that there will be no deterioration of supporting habitat and no significant disturbance such that the distribution of the species and ability of the species to utilise the pSPA as a result of the KOWL development. No LSE was concluded.
- 9.6 SNH advised no LSE for the bottlenose dolphin qualifying interest of the Moray Firth SAC based on the following factors:
- The lack of bottlenose observations recorded during digital aerial site characterisations surveys;
 - Population data for bottlenose dolphin within the SAC and the wider east coast of Scotland area;
 - The low risk of entanglement for bottlenose dolphin during the operational phase. This could be managed with appropriate mitigation so that any entanglement risk is minimised;

- The wind farm proposal area is far enough away from SAC for there to be no direct impacts, or disturbance, to bottlenose dolphins while they are within the SAC;
 - The small development footprint relative to the large extent of alternative foraging habitat / prey available to bottlenose dolphins, should localised displacement occur due to disturbance as a result of works during construction;
 - Most work associated with the proposal is of short duration, notably during the construction phase and could be managed with appropriate mitigation so that any disturbance is limited and minimises displacement of bottlenose dolphin on a long-term basis.
- 9.7 SNH advised no LSE for the Atlantic salmon and freshwater pearl mussel qualifying interests of the River Dee, River South Esk and River Spey SACs due to the fact that the proposal is located at a considerable distance from any of these SACs.
- 9.8 MS-LOT agree with the SNH advice provided in relation to marine mammals, Atlantic salmon and freshwater pearl mussel, therefore none of the SACs detailed in table 1 are considered further in this assessment.
- 10 Appropriate Assessment of the implications for the site in view of the site's conservation objectives.
- 10.1 Of the conservation objectives ("COs") relevant to the SPAs in table 4, MS-LOT consider, based on SNH advice, that the CO relating to the population of the species as a viable component of the site is the key objective. As the potential effects of the Kincardine project, occur outside the SPAs being considered, any disturbance to the qualifying interests is only considered to be significant in terms of the relevant conservation objective if it could undermine the conservation objectives relating to population viability. The Kincardine project will not affect the distribution of species within the SPAs, the distribution and extent of habitats supporting the species or the structure, function and supporting processes of habitats supporting the species.
- 10.2 The following assessment is based upon the information provided in the Kincardine HRA report and the advice received from SNH. MSS have considered the advice provided by SNH and provided input into this assessment.
- 10.3 This assessment follows the same scope, methods and assumptions as used for the [Hywind appropriate assessment \(see pages 10-14\)](#). The impacts of the Kincardine project are based on the project description and wind turbine parameters provided by the developer in the ES and Addendum.
- 10.4 The cumulative in-combination assessments are also based on the same list of projects considered on pages 10 & 11 of the Hywind appropriate assessment as well as Aberdeen Harbour re-development. From these projects, the combined quantified effects that are used in the assessment are taken from: KOWL, Hywind, EOWDC and the four consented projects in the

Forth & Tay area (Inch Cape, Seagreen Alpha & Bravo, and Neart na Gaoithe).

- 10.5 The Aberdeen Harbour re-development is a new harbour facility at Nigg Bay, Aberdeen, approximately 0.8km south of the existing harbour in Aberdeen City centre. The proposal includes construction of two breakwaters, quaysides and associated infrastructure as well as a large-scale capital dredge and sea disposal operation. Works are currently scheduled to take place over a 3-year period commencing in early 2017.
- 10.6 SNH consider that a qualitative assessment is suitable to use for assessing the non-breeding season impacts on seabird species. This is consistent with the assessments undertaken recently for the Hywind offshore wind farm project in Scottish waters (see pages 17 for gannet, 22 for kittiwake, 23 for gulliemot, 24 for razorbill, and 25 for puffin in the Hywind appropriate assessment), and is due to the lack of an agreed quantitative method to assess non breeding season impacts. During the non-breeding season, seabirds are no longer central place foragers, tied to their breeding colony. They are therefore less susceptible to any barrier effects from wind farms, and have greater flexibility in terms of location of foraging area. Effects from offshore wind farms during the non-breeding season would therefore be expected to be less significant than during the breeding season. Consequently, the agreed scope of the quantitative assessment that follows includes the effects of the offshore wind farm projects during the breeding season on the breeding populations.
- 11 Black-legged kittiwake (breeding)
- Fowlsheugh SPA*
- 11.1 The Kincardine HRA report estimated that that there would be an additional annual mortality of 8 kittiwake from Fowlsheugh SPA due to collision. SNH in their advice noted an error in the apportioning method and advised that this figure should be 16 individuals. The HRA report made precautionary assumptions regarding displacement. It was assumed that 30% of kittiwake would be displaced from the wind farm area with a 1km buffer. The breeding failure was assumed to be 100% with 50% adult mortality, resulting in a displacement mortality of 10 kittiwake apportioned to Fowlsheugh. SNH noted in their advice of 18 May 2016 that the assumptions used in the displacement assessment are highly precautionary and advised that “*Modelling conducted by CEH for the Forth and Tay wind farms indicates mortality rates are considered much more likely to be within single percentage figures*”. SNH advised that apportioned breeding season adult mortality effects of 16 collisions plus displacement mortality of 10 (total 26 adults during the breeding season) to the Fowlsheugh population of 19,310 birds indicates that after 25 years the population will be approximately 700 birds (350 pairs) smaller than without the predicted impacts of the Kincardine development. The counterfactual of mean population size is 0.9817 (98.17%).
- 11.2 Based on the outputs of population modelling undertaken by CEH, in the absence of any wind farm effects, the Fowlsheugh kittiwake population is

forecast to decline by 85% over the 25 years period ([Freeman et al, 2014](#)). This annual growth rate of -3.4% does not change with the addition of the estimated Kincardine effects alone. SNH consider that despite the impact of a reduction of 700 birds over the 25 years, the conservation objectives of the site will be maintained and therefore no adverse impact on site integrity will be expected for kittiwakes for Fowlsheugh SPA based on an assessment of the effects of the KOWL project alone. In their initial advice SNH were unable to reach the same conclusion for the in-combination impacts, and this remained their position in their response of the 01 November 2016 to the HRA Addendum.

- 11.3 With the addition of the estimated Forth and Tay, EOWDC and Hywind wind farm effects, the annual growth rate for Fowlsheugh SPA declines for the 25 year period from -3.4% to between -3.5% and -3.6%. Using the results of PVA modelling undertaken by [Freeman et al \(2014\)](#), the counterfactual population size ("CPS") value decreases from the 0.9817 (98.17%) value specified by SNH, to between 0.62 and 0.82 (62% and 82%). Using the displacement rates provided in the Kincardine HRA report, the cumulative impact on adult survival rate is calculated as -1.31% which means the threshold of acceptable change of a reduction in the annual adult survival rate of -1.3% is exceeded, based on SNH's advice regarding the most appropriate avoidance rate ("AR") of 98.9% (which is more precautionary than the British Trust for Ornithology ("BTO") and MSS recommended avoidance rate of 99.2%). Due to the previous recognition from SNH (as detailed above) that the mortality rate due to displacement was likely to be in single figures, using the upper end of this advice and assuming 10% mortality from displacement, results in only 2 mortalities from displacement being apportioned to Fowlsheugh, giving a cumulative impact of -1.27% which is under the threshold of -1.3%. The productivity effect is -2.27%, which is also below the threshold of -2.3% (see table 6 below). The thresholds of acceptable change identified are based on the same approaches used by the Forth and Tay regional assessment ([see Forth and Tay AA](#)). MS-LOT sought advice from SNH regarding the use of this reduced mortality rate due to displacement and in relation to the cumulative effects considered against the previously agreed threshold. On 12 January 2017 SNH advised that they were content with the assumption of 10% mortality from displacement being used for the KOWL project and with this assessment's consideration of winter mortality. SNH noted that there is precaution built into a number of the assessment methodologies which help to inform the final impact on kittiwakes from each of the East Coast wind farms both individually and in combination with each other. SNH concluded that there will be no adverse effect on site integrity for kittiwake at Fowlsheugh SPA from KOWL alone or in combination with the other East coast wind farms.
- 11.4 The [AA](#) completed for the Aberdeen Harbour re-development identified the potential for disturbance for kittiwake from Fowlsheugh SPA on page 27. The assessment however noted that most of the kittiwake forage outwith the development area. Partial construction of the breakwaters is being provided, prior to blasting or piling taking place, to mitigate the impacts of underwater noise on cetaceans, and this will also provide mitigation of potential

disturbance to kittiwake during construction as noted on page 31. In addition post- construction the breakwaters will provide roosting habitat.

Table 6 Estimated effects on kittiwake at Fowlsheugh SPA from KOWL alone and in combination with other east coast wind farms

Fowlsheugh : Kittiwake				
SPA population (Inds):	19310			
	Kincardine		F&T + Hywind + EOWDC +Kincardine	
	% SPA Population	Individuals	% SPA Population	Individuals
Displacement effects				
Adult survival rate	-0.01	-2	-0.38	-71
Chick survival rate	0.00	0	-1.67	-156
Collision Effects (Band CRM)				
Reduction in adult survival - Option 2 CRM*, 98.9% AR** (SNCB advice)	-0.08	-16	-0.89	-170
Reduction in adult survival - Option 2 CRM, 99.2% AR (BTO recommendation)	-0.06	-12	-0.64	-124
Total Effects (collision + displacement)				
Reduction in adult survival (SNCB advised assessment, Option 2 CRM, 98.9% AR)	-0.09	-18	-1.27	-241
Reduction in adult survival (BTO recommended assessment, Option 2 CRM, 99.2% AR***)	-0.07	-14	-1.03	-195
Productivity effect assumed (including reduction due to collision of adults)	-0.01	-12	-2.27	-430

* Option

2 of the Band Collision Risk Model

**Avoidance Rate of 98.9% recommended by the SNCBs for kittiwake following consideration of the BTO Avoidance Rate Review

***Avoidance Rate of 99.2% recommended for kittiwake by the [BTO Avoidance Rate Review](#) (page 135)

11.5 Following the breeding season, a high proportion of kittiwake breeding in eastern Scotland have been found to rapidly migrate to the NW Atlantic where they spend the non-breeding season ([Frederiksen et al 2012](#)). Individuals from more northerly breeding colonies migrated into the North Sea during this period, indicating that the already limited estimated non-breeding season effects would be apportioned across a population that included a high proportion of non-SPA birds.

11.6 SNH agreed with the information contained within the [HRA Variation](#) provided on 24 November 2017 although they noted some rounding errors.

These errors did not affect their advice which was they had no reason to change their previous advice of no adverse effect on the site integrity for Kittiwake at Fowlsheugh SPA.

- 11.7 MS-LOT concludes that the KOWL project will not adversely affect the site integrity of Fowlsheugh SPA with respect to black-legged kittiwake alone, or in combination with the Forth and Tay offshore wind farms, Hywind, EOWDC and the Aberdeen Harbour re-development.
- 11.8 Having considered all the information provided in the HRA Variation and the advice received from SNH, MS-LOT have no reason to change this conclusion.

Buchan Ness to Collieston Coast SPA

- 11.9 SNH advised on 18 May 2016 for Buchan Ness to Collieston Coast SPA, that apportioned impacts indicate that after 25 years, the population will be approximately 115 birds (63 pairs) smaller than without the predicted impacts of the Kincardine development. The counterfactual of mean population size is 0.9975 (99.75%). Based on the CEH population modelling, the forecast annual growth rate over a 25 year period of -1.6% remains unchanged with the addition of the estimated Kincardine effects alone. The conservation objectives of the site will be maintained and therefore no adverse impact on site integrity will be expected for kittiwakes for Buchan Ness to Collieston Coast SPA.
- 11.10 SNH considered that the in-combination impacts were assessed to be sufficiently small for them to advise that there would be no adverse effect on site integrity. Based on the CEH population modelling, the forecast annual growth rate over a 25 year period of -1.6% reduces to approximately -1.8% with the addition of the estimated Forth and Tay and Hywind wind farm effects, whilst the CPS value would be 0.98 (98%).

Table 7 Estimated effects on kittiwake at Buchan Ness SPA from KOWL alone and in combination with other projects and plans

Buchan Ness : Kittiwake				
SPA population (Inds):	18674			
	Kincardine		F&T + Hywind + EOWDC +Kincardine	
	% SPA	Inds	% SPA	Inds
Displacement effects				
Adult survival	0.00	0	-0.05	-10
Chick survival	0.00	0	0.00	0
Collision Effects (Band CRM)				
Reduction in adult survival - Option 2 CRM, 98.9% AR (SNCB advice)	0.00	-5	-0.07	-32
Reduction in adult survival - Option 2 CRM, 99.2% AR (BTO recommendation)	0.00	-4	-0.05	-23
Total Effects				
Reduction in adult survival (SNCB advised assessment, Option 2 CRM, 98.9% AR)	0.00	-5	-0.12	-42
Reduction in adult survival (BTO recommended assessment, Option 2 CRM, 99.2% AR)	0.00	-4	-0.10	-33
Productivity effect assumed (including reduction due to collision of adults)	0.00	-4	-0.10	-23

11.11 The estimated total effects of -0.12% reduction in adult survival are well below the threshold of -1.6% advised by the SNCBs in relation to the Forth and Tay AA, the productivity effect of -0.10% reduction is also well below the productivity threshold of -3.2%

11.12 MS-LOT concludes that the KOWL project will not adversely affect the site integrity of Buchan Ness to Collieston Coast SPA with respect to black-legged kittiwake either alone or in-combination with other offshore wind farm developments.

Troup, Pennan and Lions Head SPA

11.13 SNH advised on 18 May 2016 that only 1 collision per breeding season is attributed to Troup, Pennan and Lion's Heads SPA, therefore predicted impacts on kittiwakes from this SPA are lower than for the other 2 SPAs considered above. The conservation objectives of the site will be maintained and therefore no adverse effect on site integrity will be expected for kittiwakes for Troup, Pennan and Lion's Heads SPA.

11.14 MS-LOT concludes that the KOWL project will not adversely affect the site integrity of Troup, Pennan and Lion's Heads SPA with respect to black-

legged kittiwake either alone or in-combination with other offshore wind farm developments.

12 Atlantic puffin (breeding)

Forth Islands SPA

12.1 SNH advised on 18 May 2016 that displacement is the key impact for Atlantic puffins with no puffin deaths predicted to result from collisions for this development. The HRA report estimates that only a small number of Atlantic puffins, totalling 5 birds, are predicted to die due to displacement. Three of these birds are apportioned to Forth Islands SPA. Owing to their concerns regarding the in-combination impacts of other consented offshore wind farms SNH advised that they were unable to conclude that there would be no adverse effect on site integrity. Their advice of 01 November 2016 in response to the HRA Addendum re-iterated this position.

12.2 The in-combination impacts on Atlantic puffin Forth Islands SPA are presented below. SNH advise that the mortality rates are considered much more likely to be within single percentage figures (rather than the 50% they advise is appropriate to assume in the assessment) and therefore these values should be treated as highly precautionary. In relation to kittiwake SNH advised that 10% mortality from displacement was an appropriate figure to use for the KOWL project.

Table 8 Estimated effects on puffin at Forth Islands SPA from KOWL alone and in combination with other projects and plans

Puffin- Forth Islands SPA	SPA Population (Inds):			100564	
	Kincardine			F&T + Hywind + Kincardine	
	Proportion	Inds	% SPA	Inds	% SPA
Site Population Estimate		19	0.02%		
Displaced	0.6	11	0.01%	-	-
From SPA	1.0	11	0.01%		
Breeding adults	0.6	7	0.01%		
Assuming adult mortality: the proportion that die	0.5	3	0.00%	2027	2.02%

12.3 SNH provided further advice in relation to the [HRA Variation](#) and agreed that no further impact assessment is required for Atlantic puffin interests of Forth Islands SPA. This is because the number of turbines will be reduced from 8 to 7 or 6, which will reduce the barrier effect for this species and further reduce the impacts assessed within this AA. SNH concluded there would be no adverse impact on site integrity for Atlantic puffin at Forth Islands SPA from KOWL alone or in combination with the other East coast wind farms.

12.4 The KOWL project is adding only a very small additional effect to that already predicted from the Forth and Tay wind farms (see pages 36-40 of the [Forth and Tay AA](#) for the detailed assessment methodology, how conclusions on site integrity were reached and reasons for diverging from SNH advice). Having considered SNH's position alongside previous assessments for the

Forth and Tay wind farms and Hywind, MS-LOT conclude that the KOWL proposal will not adversely affect the site integrity of the Forth Islands SPA with respect to Atlantic puffin, either alone or in-combination.

12.5 Having considered all the information in the HRA Variation and the advice provided by SNH, MS-LOT have no reason to change this conclusion.

13 Common guillemot (breeding)

13.1 In their advice of 18 May 2016 SNH advised that the number of collisions predicted for guillemots as a result of the Kincardine project is low.

Fowlsheugh SPA

13.2 In the Kincardine HRA report displacement rates and mortality rates of 50% for auks, including guillemots, are used. These were considered by SNH to be highly precautionary. This figure results in 158 guillemots being displaced from the development area and 65 guillemot deaths apportioned to Fowlsheugh SPA.

13.3 The estimated effects from the [Forth and Tay wind farms](#) (page 41) upon guillemot at Fowlsheugh SPA and those from [Hywind](#) (page 23) were small both alone and in combination.

13.4 SNH advised that the in-combination impacts would not give rise to an adverse effect on site integrity.

13.5 MS-LOT concludes that the KOWL project will not adversely affect the site integrity of Fowlsheugh SPA with respect to common guillemot either alone or in-combination with other offshore wind farm developments.

Buchan Ness to Collieston Coast SPA

13.6 In their advice of 18 May 2016 SNH advised that the impacts to common guillemot at Buchan Ness to Collieston Coast SPA were not considered significant.

13.7 The estimated effects from the Forth and Tay wind farms upon guillemot at Buchan Ness and those from Hywind were very small both alone and in combination with other offshore wind farm developments.

13.8 SNH advised that the in-combination impacts would not give rise to an adverse effect on site integrity.

13.9 MS-LOT concludes that the KOWL project will not adversely affect the site integrity of Buchan Ness to Collieston Coast SPA with respect to common guillemot either alone or in-combination with other offshore wind farm developments.

Troup, Pennan and Lions Heads SPA

13.9.1 In their advice of 18 May 2016 SNH stated that the impacts to common guillemot at Troup, Pennan and Lions Heads SPA were not considered significant.

13.9.2 The estimated effects from the Forth and Tay wind farms upon guillemot at Troup, Pennan and Lions Head and those from Hywind were very small both alone and in combination.

13.10 SNH advised that the in-combination impacts would not give rise to an adverse effect on site integrity.

13.11 MS-LOT concludes that the KOWL project will not adversely affect the site integrity of Troup, Pennan and Lions Heads SPA with respect to common guillemot either alone or in-combination with other offshore wind farm developments.

14 Herring gull (breeding)

Fowlsheugh SPA, Buchan Ness to Collieston Coast SPA, and Troup, Pennan and Lions Heads SPA

14.1 In their advice of 18 May 2016 SNH consider that key impacts for this interest are collision risk and displacement. The results of the collision risk modelling predict a low total annual mortality of 1 herring gull per year through collisions with turbine blades. Displacement impacts are not significant. The development would result in a loss of 0.1% of the foraging area for herring gull originating from Fowlsheugh SPA.

14.2 The estimated effects from the Forth and Tay wind farms upon herring gull at Fowlsheugh SPA, Buchan Ness to Collieston Coast SPA, and Troup, Pennan and Lions Heads SPA and those from Hywind were small both alone and in combination.

14.3 SNH advised that, in their view, the proposal will have no adverse effects on site integrity on the herring gull qualifying interests for Fowlsheugh SPA, Buchan Ness to Collieston Coast SPA and Troup, Pennan and Lion's Heads SPA, alone or in combination with other developments.

14.4 MS-LOT concludes that the KOWL project will not adversely affect the site integrity of Fowlsheugh SPA, Buchan Ness to Collieston Coast SPA, and Troup, Pennan and Lions Heads SPA with respect to herring gull either alone or in-combination with other offshore wind farm developments.

15 Northern Fulmar (breeding)

Fowlsheugh SPA, Buchan Ness to Collieston Coast SPA, Troup, Pennan and Lions Heads SPA, and Forth islands SPA

15.1 In their advice of 18 May 2016 SNH consider key impacts for this interest are collision risk and displacement. Collision risk modelling predicts that no fulmar will be lost through collisions with turbine blades. They state that fulmar foraging ranges are extensive and any displacement impacts for this species are considered to be insignificant.

15.2 SNH advised that, in their view, the proposal will have no adverse effects on site integrity on the fulmar qualifying interests for relevant SPAs either alone or in combination with other developments.

15.3 MS-LOT concludes that the KOWL project will not adversely affect the site integrity of Fowlsheugh SPA, Buchan Ness to Collieston Coast SPA, Troup, Pennan and Lions Heads SPA, and Forth Islands SPA with respect to fulmar either alone or in-combination with other offshore wind farm developments.

16 Northern gannet (breeding)

Forth islands SPA

16.1 The Kincardine HRA report estimated collision mortality of 6 adult gannets is per breeding season. The HRA report uses a highly precautionary 75% displacement rate for gannet, along with a 50% mortality rate from displacement resulting in a prediction of 12 deaths due to displacement. Taking these figures in combination with the Forth and Tay, and Hywind consented wind farms, result in a total of 1027 adult breeding gannet deaths per season. A positive annual growth forecast for this population remains when the estimated in combination effects are taken into consideration. SNH advised that the cumulative effect is below the re-calculated threshold for gannets from the Forth Islands SPA (Bass Rock colony) of 1300 as used most recently in the appropriate assessment for Hywind. Using the outputs of population modelling undertaken by Macarthur Green to inform the Forth & Tay wind farm assessments, the in-combination effects CPS value remains at 0.82 (82%).

Table 9 Estimated effects on gannet at Forth Islands SPA from KOWL alone and in combination with other projects and plans

Gannet	Forth Islands	
SPA population (individuals)	150518	
CRM Model	Option 2	
Avoidance Rate	98.9%	
	No. Inds	% SPA
Kincardine Effect	18	-0.01
F&T + Hywind + Kincardine Cumulative Effect	1027	-0.68

16.2 SNH advised that, in their view, the proposal will have no adverse effect on site integrity for the gannet qualifying interests for Forth Islands SPA, alone or in combination with other developments.

16.3 The cumulative total of collisions for gannet using the basic Band model are presented in the appropriate assessments for Blyth Offshore Wind Demonstrator undertaken by the Marine Management Organisation ("MMO") in 2013, for Blyth Offshore Demonstration project combined with the existing offshore turbines at Blyth and the Teesside project. The annual predicted mortality is 30, with the assessment recording that breeding birds would be most likely to be from Bass Rock which is within the Forth Islands SPA. The EOWDC appropriate assessment records up to 17 collisions per year for the Aberdeen Offshore Wind Farm using the basic Band model, and indicates that the majority of these birds are likely to be from Troup Head on the Moray coast. SNH have advised the Planning Inspectorate that the magnitude of effects to Forth Islands SPA from the Dogger Bank Teeside A & B projects during the breeding season is in the order of 1% of the effects associated

with the Forth and Tay projects, which is approximately 14 collisions per year. Having considered these additional predicted effects, the total effects are still below the threshold.

16.4 Following the breeding season, a high proportion of gannet breeding in the Forth Islands SPA migrate south as far as off West Africa, with relatively few remaining in the North Sea ([Furness, 2015](#)). At the same time, large numbers of gannet from more northerly areas e.g. Norway move into the North Sea, indicating that the already limited estimated non-breeding season collision effects would be apportioned across a population that included a high proportion of non-SPA birds.

16.5 MS-LOT concludes that the KOWL project will not adversely affect the site integrity of Forth Islands SPA with respect to gannet either alone or in combination with other offshore wind farm developments.

17 Razorbill (breeding)

Fowlsheugh

17.1 In the Kincardine HRA report precautionary assumptions are made for displacement of razorbills with 50% displaced from the project area and 1km buffer. The breeding failure of displaced birds in the HRA report was assumed to be 100%, and it was estimated that 8 adult breeding razorbills from Fowlsheugh SPA will be displaced by the development. This figure equates to 0.15% of the population of Fowlsheugh SPA. The number of chicks per pair per year for this SPA is estimated to be 0.60. If 8 individual adult breeding birds are assumed to be displaced, 5 chicks should assume to be lost from the SPA population as a result. This figure equates to a very small predicted reduction in breeding success of - 0.16%.

17.2 SNH advise that, in their view, the proposal will have no adverse effects on site integrity on the razorbill qualifying interests of Fowlsheugh SPA either alone or in combination with other developments.

17.3 MS-LOT concludes that the KOWL project will not adversely affect the site integrity of Fowlsheugh SPA with respect to razorbill either alone or in combination with other offshore wind farm developments.

18 Ythan Estuary, Sands of Forvie and Meikle Loch pSPA and Outer Firth of Forth and St. Andrews Bay Complex pSPA

18.1 No LSE was identified on the closest pSPAs (Ythan Estuary, Sands of Forvie and Meikle Loch pSPA and Outer Firth of Forth and St. Andrews Bay Complex pSPA). However, as detailed at paragraph 4.3, as the sites are not yet designated, they also fall within the regime governed by the first sentence of Article 4(4) of the Birds Directive as follows:

“In respect of the protection areas referred to in paragraphs 1 and 2, Member States shall take appropriate steps to avoid pollution or deterioration of habitats or any disturbances affecting the birds, in so far as these would be significant having regard to the objectives of this Article. Outside these protection areas, Member States shall also strive to avoid pollution or deterioration of habitats.”

- 18.2 MS-LOT consider that the Outer Firth of Forth and St. Andrews Bay Complex pSPA, and Ythan Estuary, Sands of Forvie and Meikle Loch pSPA are sufficiently far from the area of proposed works that there will be no risk of pollution, deterioration of habitats or disturbance of the qualifying interests from the Kincardine project.

SECTION 4: CONCLUSION

19 MS-LOT conclusion

In the assessments above MS-LOT have considered the conservation objective of “maintaining the population of the species as a viable component of the site” on the individual qualifying features of the SPAs. As the effects of KOWL project, alone and in combination with other offshore wind farms, on the populations were found to be within acceptable thresholds for all the species being considered in this assessment MS-LOT concluded that the KOWL project will not adversely affect the integrity of the SPAs with respect to the individual qualifying features.

Having determined that the KOWL project will not have a negative effect on the constitutive elements of the sites concerned, on having regard to the reasons for which the sites were designated and their associated conservation objectives, MS-LOT concludes that the proposed KOWL project will not, on its own or in combination with other offshore wind farms and Aberdeen Harbour re-development adversely affect the integrity of the Buchan Ness to Collieston Coast SPA, the Fowlsheugh SPA, the Forth Islands SPA or the Troup, Pennan and Lion’s Heads SPA.

Having considered all the information in the HRA Variation and the advice from SNH, MS-LOT have no reason to change this conclusion.

No conditions are relied upon in reaching a conclusion of no adverse effect on site integrity. Several conditions will be included in any Section 36/ marine licence if granted which serve to mitigate further any impacts.

References

Frederiksen, M., Moe, B., Daunt, F., Phillips, R. A., Barrett, R. T., Bogdanova, M. I., Boulinier, T., Chardine, J. W., Chastel, O., Chivers, L. S., Christensen-Dalsgaard, S., Clément-Chastel, C., Colhoun, K., Freeman, R., Gaston, A. J., González-Solís, J., Goutte, A., Grémillet, D., Guilford, T., Jensen, G. H., Krasnov, Y., Lorentsen, S.-H., Mallory, M. L., Newell, M., Olsen, B., Shaw, D., Steen, H., Strøm, H., Systad, G. H., Thórarinnsson, T. L., Anker-Nilssen, T.. (2012). Multicolony tracking reveals the winter distribution of a pelagic seabird on an ocean basin scale. *Diversity and Distributions*, 18 (6). 530-542. 10.1111/j.1472-4642.2011.00864.x

Freeman, S., Searle, K., Bogdanova, M., Wanless, S. & Daunt, F. (2014). Population Dynamics of Forth & Tay Breeding Seabirds: Review of Available Models and Modelling of Key Breeding Populations. Marine Scotland Commissioned Report, Ref: MSQ-0006.

Furness, R.W. (2015). Non-breeding season populations of seabirds in UK waters: Population sizes for Biologically Defined Minimum Population Scales (BDMPS). Natural England Commissioned Reports, Number 164.

