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MARINE SCOTLAND LICENSING OPERATIONS TEAM'S ("MS-LOT")
ASSESSMENT OF THE PROJECT'S IMPLICATIONS FOR DESIGNATED
SPECIAL AREAS OF CONSERVATION ("SAC"), SPECIAL PROTECTION AREAS
("SPA") AND PROPOSED SPECIAL PROTECTION AREAS ("pSPA") IN VIEW OF
THE SITES' CONSERVATION OBJECTIVES.

APPLICATION FOR A MARINE LICENCE UNDER THE MARINE (SCOTLAND) ACT 2010 FOR THE CONSTRUCTION OF THE PHASE 4 DEVELOPMENT AT INVERGORDON SERVICE BASE AND ASSOCIATED LAND RECLAMATION, CAPITAL DREDGING AND DREDGE SPOIL DEPOSIT ACTIVITIES.

SECTION 1: BACKGROUND

1 Appropriate assessment ("AA") conclusion

- 1.1 This AA concludes that there will be no adverse effect on the site integrity of the Moray Firth SAC, the Dornoch Firth and Morrich More SAC, the Cromarty Firth SPA or the Moray Firth pSPA (where each SAC, SPA or pSPA is taken as a whole) from the Port of Cromarty Firth ("PoCF") proposal either in isolation or in combination with other plans or projects, providing that the conditions set out in Section 4 are complied with.
- 1.2 MS-LOT consider that the most up to date and best scientific advice available has been used in reaching the conclusion that the PoCF proposal will not adversely affect the integrity of these sites and are satisfied that no reasonable scientific doubt remains.

2 Introduction

- 2.1 This is a record of the AA of the PoCF proposal to construct the phase 4 development, and carry out associated land reclamation, capital dredging and dredge spoil deposit activities at the Invergordon Service Base. The assessment has been undertaken by MS-LOT. This assessment is required under Regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994 ("the Regulations"). This AA is in accordance with Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ("the Habitats Directive") and Council Directive 2009/147/EC on the conservation of wild birds ("the Birds Directive"). MS-LOT, as the 'competent authority' under the 1994 Habitats Regulations, has to be satisfied that the project will not adversely affect the integrity of any European site (SAC and SPA) before it can grant consent for the project.

- 2.2 A detailed AA has been undertaken and Scottish Natural Heritage (“SNH”), The Royal Society for the Protection of Birds (“RSPB”) and Whale and Dolphin Conservation (“WDC”) have been consulted.

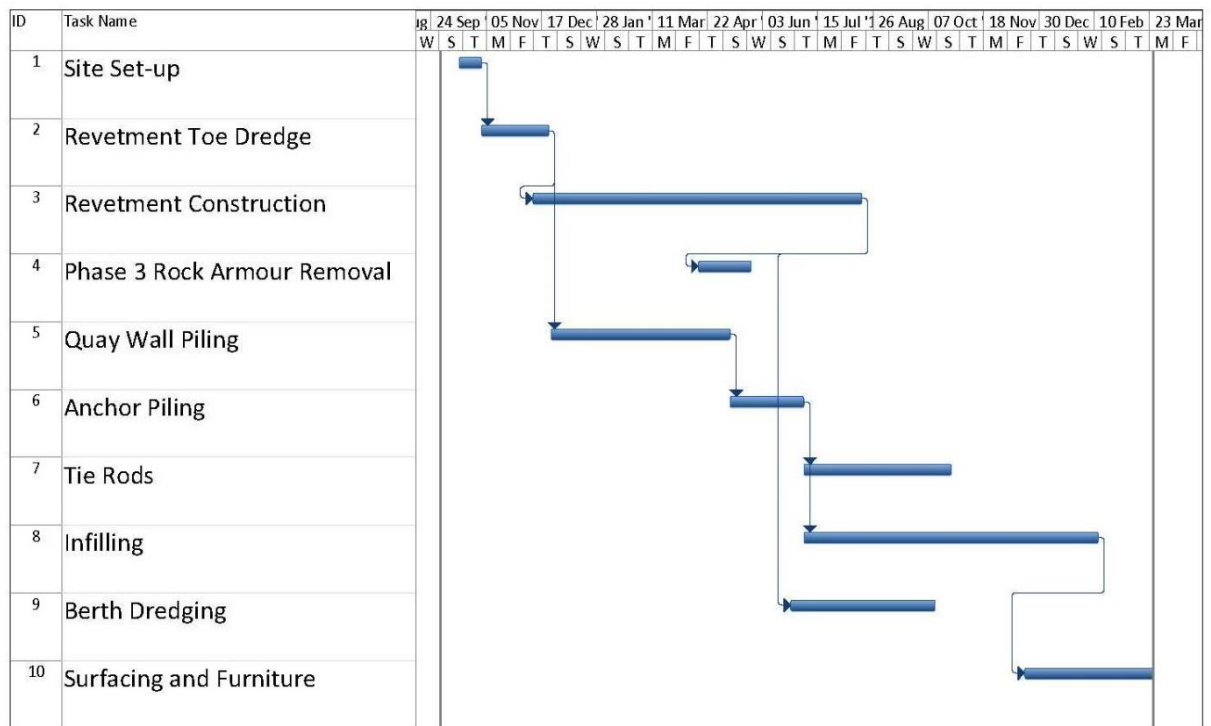
3 Background to including assessment of new SPA

- 3.1 The Scottish Ministers, as a 'competent authority' under the Regulations, must be satisfied that the proposal will not adversely affect the integrity of any European site (SAC and SPA, known as Natura sites) either alone or in combination with other plans or projects before authorisations can be given for the proposal.
- 3.2 In Scotland, the Scottish Ministers are currently in the process of identifying a suite of new marine SPA. In 2014 advice was received from the statutory nature conservation bodies (“SNCB”) on the sites most suitable for designation and at this stage they became draft SPA (“dSPA”). Once the 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 pSPA is provided by Scottish Planning Policy (paragraph 210), the UK Marine Policy Statement (paragraph 3.1.3) and Scotland’s National Marine Plan (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 pSPA. 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 the Birds Directive in respect of the pSPA. 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 9.8 and 9.9).
- 3.4 In accordance with regulation 50 of the Regulations the Scottish Ministers will, as soon as reasonably practicable following the formal designation of the pSPA, 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 pSPA 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 The PoCF proposal involves land reclamation to provide an additional 4.5Ha of laydown space to the west of the previously completed phase 3 development, including the construction of 215m of quay wall to create a new berth adjacent to the existing berth 5, providing a 369m long combined quay face. Fendering will then be installed along berth 5 and the new berth 6.
- 4.2 A rock armour revetment will be constructed along the north and west sides of the new laydown area with a tubular and sheet piled wall forming the new quay. The existing rock armour will be removed from the western edge of the phase 3 development and re-used on phase 4. The area will then be lined with a geotextile membrane and infilled, before appropriate drainage, bollards and services are installed prior to surfacing.
- 4.3 Dredging will be required along the toe of the new revetment structure and a second campaign will be required to create a finished depth of 12 metres along the new berth. The total dredge volume is estimated to be 110,000m³. It is anticipated that up to 60,000m³ of dredge material will be suitable for re-use within the land reclamation and that the remainder will be deposited at the Sutors dredge spoil deposit area.
- 4.4 The works are scheduled to take place between 01 November 2018 and 31 March 2020. The planned schedule of works is shown in Figure 1.

Figure 1: Proposed outline construction programme.



5 Consultation

- 5.1 SNH, RSPB and WDC were consulted on the PoCF proposal on 22 May 2018.
- 5.2 RSPB and WDC provided their responses on 19 June 2018 and 28 June 2018 respectively.
- 5.3 SNH provided an initial response on 29 June 2018, however, further clarification was sought by MS-LOT on 18 July 2018 and SNH subsequently provided a further response on 19 July 2018.

6 Main points raised during consultation

- 6.1 SNH advised that the proposal is likely to have a significant effect on the bottlenose dolphins and subtidal sandbanks qualifying interests of the Moray Firth SAC. Further, SNH advised there is a likely significant effect on the harbour seal qualifying interest of the Dornoch Firth and Morrich More SAC and on all qualifying bird species of the Cromarty Firth SPA and Moray Firth pSPA. SNH therefore advised that an AA was required.
- 6.2 WDC advised that provided the mitigation methods are followed, they are content that the impacts of underwater noise will be sufficiently mitigated.
- 6.3 RSPB advised that they have no objection to the PoCF proposal but wish to make further comment with regard to the potential for disturbance to breeding birds, in particular in relation to terns.

SECTION 2: INFORMATION ON NATURA SITES

7 Background information and qualifying interests for the relevant Natura sites

- 7.1 This section provides links to the SNH Interactive website where the background information on the site being considered in this assessment is available. The qualifying interests for the site are listed as are the conservation objectives.

Table 1 Name of Natura site affected and current status

<p><u>Moray Firth SAC</u> https://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8327</p> <p><u>Dornoch Firth and Morrich More SAC</u> https://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8242</p> <p><u>Cromarty Firth SPA</u> https://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=8488</p> <p><u>Moray Firth pSPA</u> http://gateway.snh.gov.uk/sitelink/siteinfo.jsp?pa_code=10490</p>
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Table 2 European qualifying interests

<p><u>Moray Firth SAC</u></p> <ul style="list-style-type: none">• Bottlenose dolphin (<i>Tursiops truncatus</i>)• Subtidal Sandbanks <p><u>Dornoch Firth and Morrich More SAC</u></p> <ul style="list-style-type: none">• Atlantic salt meadows• Coastal dune heathland• Dune grassland• Dunes with juniper thickets• Estuaries• Glasswort and other annuals colonising mud and sand• Harbour seal (<i>Phoca vitulina</i>)• Humid dune slacks• Intertidal mudflats and sandflats• Lime-deficient dune heathland with crowberry• Otter (<i>Lutra lutra</i>)• Reefs• Shifting dunes• Shifting dunes with marram• Subtidal sandbanks <p><u>Cromarty Firth SPA</u></p> <ul style="list-style-type: none">• Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding• Common tern (<i>Sterna hirundo</i>), breeding• Curlew (<i>Numenius arquata</i>), non-breeding• Dunlin (<i>Calidris alpina alpina</i>), non-breeding• Greylag goose (<i>Anser anser</i>), non-breeding• Knot (<i>Calidris canutus</i>), non-breeding• Osprey (<i>Pandion haliaetus</i>), breeding and foraging

- Oystercatcher (*Haematopus ostralegus*), non-breeding
- Pintail (*Anas acuta*), non-breeding
- Red-breasted merganser (*Mergus serrator*), non-breeding
- Redshank (*Tringa totanus*), non-breeding
- Scaup (*Aythya marila*), non-breeding
- Waterfowl assemblage, non-breeding
- Whooper swan (*Cygnus cygnus*), non-breeding
- Wigeon (*Anas penelope*), non-breeding

Moray Firth pSPA

- Shag (*Phalacrocorax aristotelis*), breeding
- Common scoter (*Melanitta nigra*), non-breeding
- Eider (*Somateria mollissima*), non-breeding
- Goldeneye (*Bucephala clangula*), non-breeding
- Great northern diver (*Gavia immer*), non-breeding
- Long-tailed duck (*Clangula hyemalis*), non-breeding
- Red-breasted merganser (*Mergus serrator*), non-breeding
- Red-throated diver (*Gavia stellata*), non-breeding
- Scaup (*Aythya marila*), non-breeding
- Shag (*Phalacrocorax aristotelis*), non-breeding
- Slavonian grebe (*Podiceps auritus*), non-breeding
- Velvet scoter (*Melanitta fusca*), non-breeding

Table 3 Conservation objectives

Moray Firth SAC

i) To avoid deterioration of the qualifying habitat (listed above) 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 the qualifying habitat that the following are maintained in the long term:

- Extent of the habitat on site
- Distribution of the habitat within site
- Structure and function of the habitat
- Processes supporting the habitat
- Distribution of typical species of the habitat
- Viability of typical species as components of the habitat
- No significant disturbance of typical species of the habitat

ii) To avoid deterioration of the habitats of the qualifying species (listed above) or significant disturbance to the qualifying species, 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 the qualifying species that the following are established then maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

Dornoch Firth and Morrich More SAC

i) To avoid deterioration of the qualifying habitat (listed above) 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 the qualifying habitat that the following are maintained in the long term:

- Extent of the habitat on site
- Distribution of the habitat within site
- Structure and function of the habitat
- Processes supporting the habitat
- Distribution of typical species of the habitat
- Viability of typical species as components of the habitat
- No significant disturbance of typical species of the habitat

ii) To avoid deterioration of the habitats of the qualifying species (listed above) or significant disturbance to the qualifying species, 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 the qualifying species that the following are established then maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

Cromarty Firth SPA

To avoid deterioration of the habitats of the qualifying species (listed above) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

Moray Firth pSPA (Draft Conservation Objectives)

The following conservation objectives are still in draft form and have not yet been finalised.

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

8 Requirement for appropriate assessment

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

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

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

8.2.1 In their response, dated 29 June 2018, SNH advised that the PoCF proposal would have a likely significant effect on the following qualifying interests:

8.2.2 Moray Firth SAC

- Bottlenose dolphins (*Tursiops truncatus*)
- Subtidal sandbanks

- 8.2.3 SNH advised that there is likely to be a significant effect on the subtidal sandbank interest of the Moray Firth SAC due to the redistribution of sediments arising from the proposed dredge spoil disposal campaign.
- 8.2.4 SNH advised that there is likely to be a significant effect on the bottlenose dolphin qualifying interest of the Moray Firth SAC for the following reasons;
- disturbance arising from vessel movements associated with the PoCF proposal;
 - disturbance arising from underwater noise associated with the use of vibro and percussion piling; and
 - potential for direct injury to occur during dredge spoil disposal operations, should bottlenose dolphin be present within the immediate vicinity of the vessels when materials are being disposed of.
- 8.2.5 MS-LOT agrees with this advice and has undertaken an AA for the Moray Firth SAC for the bottlenose dolphin and subtidal sandbank qualifying interests.
- 8.2.6 **Dornoch Firth and Morrich More SAC**
- Harbour seals (*Phoca vitulina*)
- 8.2.7 SNH advised that Dornoch Firth and Morrich More SAC is located within 50 km of a designated seal haulout site within the Cromarty Firth and, therefore, there is connectivity between this SAC and the harbour seals occurring within the Cromarty Firth. SNH advised that seals using this haulout site will be transiting past the proposed development area and therefore, due to disturbance associated with increased vessel traffic and underwater noise from piling there is likely to be a significant effect on the harbour seal qualifying interest of the Dornoch Firth and Morrich More SAC.
- 8.2.8 MS-LOT agrees with this advice and has undertaken an AA for the Dornoch Firth and Morrich More SAC for the harbour seal qualifying interest.
- 8.2.9 **Cromarty Firth SPA and Moray Firth pSPA**
- All qualifying bird species
- 8.2.10 SNH advised due to disturbance and habitat changes associated with vessel movements and activity (including noise and visual disturbance) together with construction and operational activity there is likely to be a

significant effect on the Cromarty Firth SPA and Moray Firth pSPA for all qualifying bird species.

- 8.2.11 MS-LOT agrees with this advice and has undertaken an AA for the Cromarty Firth SPA and Moray Firth pSPA for the qualifying interests listed above.

9 Appropriate assessment of the implications for the site in view of the site's conservation objectives.

- 9.1 MS-LOT has considered the advice provided by SNH dated 29 June and 19 July 2018 to support this assessment. In addition, RSPB comments of 19 June 2018 and the WDC comments of 28 June 2018 have been considered by MS-LOT in their assessment.

9.2 Moray Firth SAC – bottlenose dolphins

- 9.2.1 SNH advised that the Sutors disposal ground is the most used location for the greatest number of dolphins within the entire Moray Firth SAC and the North East Scotland dolphin population as a whole. SNH advised however that the proposal will not adversely affect the integrity of the site because PoCF have provided information in the Environmental Impact Assessment report ("EIAR") that demonstrates vessels will be managed to safeguard the dolphin interest, in accordance with PoCF protocols. However, for clarity, SNH agreed with PoCF that a Vessel Management Plan ("VMP") would be included in the next revision of the Construction Environmental Management Document ("CEMD"). Subsequently, an updated CEMD (revision 3, dated 07 August 2018) has been submitted by PoCF which meets the requirements of SNH, except for the provision of full details of their vessels and their anticipated movements. PoCF have confirmed that this information will be provided, once a contractor has been appointed, prior to the commencement of the works. In addition, SNH advised that the PoCF should co-ordinate the vessel movements associated with the phase 4 development alongside other developments and activities taking place at the same time, in order to spread out and minimise the number of simultaneous vessel movements and/or activities.

- 9.2.2 SNH advised that the measures set out in the Piling Marine Mammal Protocol, contained with the CEMD, to mitigate the impacts of underwater noise must be followed in order to prevent an adverse effect on site integrity. SNH further advised that they consider the justification subsequently provided by PoCF for a 500m mitigation zone, despite the

prediction in the EIAR that the maximum permanent threshold shift impact range for low and high frequency cetaceans is 690m, to be acceptable. In addition to adhering to the 500m mitigation zone, SNH recommended that PoCF monitor actual sound levels at 500m and 690m from the noise source during piling operations to confirm whether or not the 500m mitigation zone is sufficient. PoCF has subsequently incorporated these noise monitoring requirements in an updated version of the CEMD (revision 3, dated 07 August 2018), as agreed with SNH.

9.2.3 SNH advised that the Spoil Disposal Marine Mammal Protocol within the CEMD should be followed to ensure that the works do not adversely affect the integrity of the Moray Firth SAC.

9.2.4 WDC were in agreement with SNH that, providing the proposed mitigation methods are followed, the impact of underwater noise on marine mammals will be sufficiently mitigated.

9.2.5 MS-LOT concur with the view of SNH and WDC that, providing the mitigation measures as detailed in the CEMD are followed and the conditions set out in Section 4 are implemented, there will be no adverse effect on the integrity of the bottlenose dolphin qualifying interest of the Moray Firth SAC from the PoCF proposal in isolation.

9.3 Moray Firth SAC – Subtidal Sandbanks

9.3.1 SNH advised that the Sutors dredge spoil deposit area has been used for many years for dredge spoil disposal, with many previous depositions of much larger quantities than the PoCF proposal and that no apparent lasting impacts have been observed as a result of these operations. In addition, SNH advised that the PoCF proposal will not alter the coastal processes around these features. SNH, therefore, concluded that the works will not have a significant effect on the subtidal sandbank qualifying interest of the Moray Firth SAC.

9.3.2 MS-LOT concurs with the view of SNH, that the PoCF proposal in isolation will not have an adverse effect on the subtidal sandbank qualifying interest of the Moray Firth SAC.

9.4 Dornoch Firth and Morrich More SAC – Harbour Seals

9.4.1 SNH advised that adherence to the Piling Marine Mammal Protocol, Spoil Disposal Marine Mammal Protocol and VMP, which are all

contained within the CEMD, will ensure that the PoCF proposal will not adversely affect the integrity of the site.

- 9.4.2 MS-LOT concur with the view of SNH that, providing the mitigation measures detailed in the CEMD are followed, there will be no adverse effect on the site integrity of the Dornoch Firth and Morrich More SAC from the PoCF proposal in isolation.

9.5 Cromarty Firth SPA

- 9.5.1 SNH advised that in respect of the wintering waders using intertidal habitats, these are most likely to be affected in the Dalmore Bay section of the Cromarty Firth SPA. SNH further advised that, in general, the number of wintering waders in this area are relatively small and that disturbance impacts would be minimal due to the distance of this area from the proposed works. SNH did acknowledge that two sections of the Dalmore Bay area are within generally accepted disturbance distances for many waders using intertidal habitat and that these sections are regularly used however, the number of waders using these sections is small. SNH advised that predictions from current and sediment modelling indicate that there will only be very minor habitat amendment. In view of this, SNH advised that all conservation objectives will be met for these species.
- 9.5.2 SNH advised that the wigeon, greylag goose and whooper swan qualifying interests are likely to use the shallow water habitats within Nigg and Udale Bays with data suggesting this is where the majority of these species occur. SNH further advised that red-breasted merganser, pintail and scaup are likely to use deeper water habitats. SNH also advised that the main scaup flock is believed to be located away from the site of the PoCF proposal as well as the main vessel channels however, it is less clear where the main flocks for red-breasted merganser and pintail occur although larger flocks of pintail are generally recorded in Nigg Bay. SNH concluded that all the conservation objectives for these species will be met.
- 9.5.3 SNH advised that there is a significant colony of common terns at the Invergordon Service Base. Despite this, SNH advised that it was not expected that there would be an direct impact on the common terns as the construction area of the PoCF proposal is located by berth 4 and at the end of the Queen's dock, away from the main tern colonies. It is likely that these colonies are habituated to a high level of disturbance due to their proximity to the daily operations of the Port. SNH further advised that there is no predicted impact on water quality from the

proposed works so feeding conditions should not be affected. Terns have a large foraging range and thus any localised effects from the proposed works are unlikely to impact the conservation objectives for this species.

- 9.5.4 RSPB confirmed they were satisfied that strict adherence to the Breeding Bird Species Protection Plan (“BBSPP”) contained within the CEMD will act to protect nesting birds during construction. RSPB further confirmed they were supportive of the proposal to remove the rock armour outwith the breeding season. RSPB recommended, however, that the same measures listed in the BBSPP should be applied to the removed rock to prevent nesting attempts. RSPB, noted that the installation of rock armour may result in greater numbers of breeding terns at the port however acknowledged that the presence of these colonies could lead to conflicts between the birds and port’s operations. RSPB therefore recommended a management plan be developed to control ongoing interactions between the terns and the port operations. The RSPB recommendations have subsequently been incorporated in an updated version of the CEMD (Revision 3, dated 07 August 2018) and agreed with RSPB.
- 9.5.5 SNH advised that ospreys do not use the site for breeding, however, they do feed in shallow waters. SNH advised that the proposed works are very unlikely to affect shallow water feeding areas (such as those in Nigg and Udale Bays) used by feeding osprey.
- 9.5.6 MS-LOT concurs with the views of SNH and RSPB, that there will be no adverse effect on the site integrity of the Cromarty Firth SPA from the PoCF proposal in isolation.

9.6 Moray Firth pSPA

- 9.6.1 SNH advised that this site is important for a range of wintering seaduck, grebes and divers. The distribution of these species is such that the increase in vessel traffic will not have an adverse effect on these populations.
- 9.6.2 SNH advised that there is a significant colony of breeding shag at the entrance to the Cromarty Firth close to the Sutors dredge spoil deposit area. SNH further advised that shags are visual feeders so the potential change to the benthos and/or increase in water turbidity from the disposal operations could affect this colony. However, the timing of the dredging and the relative volume of material to be disposed of means

that there is unlikely to be an adverse impact on site integrity. The first phase of dredging is scheduled for November and December 2018 and the second phase for 2019, however, no dredging works will take place during the month of May (which is a key part of the shag breeding season). In addition, any effect from increased turbidity would be transient in nature.

- 9.6.3 MS-LOT concurs with the view of SNH, that providing no dredging works take place during the month of May, there will be no adverse effect on the integrity of the Moray Firth pSPA from the PoCF proposal in isolation.
- 9.7 In summary, SNH advised that the effects on the Moray Firth SAC and Dornoch Firth and Morrich More SAC can be sufficiently mitigated through adherence to the protocols detailed in the CEMD. The key areas for the qualifying interests of the Cromarty Firth SPA and Moray Firth pSPA are sufficiently distant from the PoCF proposal for disturbance effects to be small. The only exception to this is the shags of the Moray Firth pSPA, which are likely to be affected by the dredge spoil deposit activities. The scale and timing of the works however are such that there is unlikely to be an adverse effect on site integrity. MS-LOT concur with the view of SNH that this project in isolation will not have an adverse effect on the integrity of the Moray Firth SAC, the Dornoch Firth and Morrich More SAC, the Cromarty Firth SPA or the Moray Firth pSPA, provided that the conditions set out in Section 4 are complied with.
- 9.8 As detailed in paragraph 3.3, as the Moray Firth pSPA has not yet been designated, it also falls 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.”
- 9.9 MS-LOT has considered the information contained within the PoCF proposal and the advice provided by SNH and concludes that the works will not cause pollution or deterioration of habitats and any disturbance will be negligible.

10 In-combination assessment

10.1 MS-LOT has carried out an in-combination assessment to ascertain whether the PoCF proposal will have a cumulative effect with other plans or projects which, in combination, would have the potential to affect the qualifying interests of the Moray Firth SAC, Dornoch Firth and Morrich More SAC, Cromarty Firth SPA or Moray Firth pSPA.

10.2 The following projects currently have an active marine licence and/or s.36 consent and LSE was identified on the qualifying interests of the Moray Firth SAC, Dornoch Firth and Morrich More SAC, Cromarty Firth SPA or Moray Firth pSPA. The in-combination effects of these plans and proposals on each of the protected sites have been considered below.

10.3 BOWL

10.3.1 Installation and operation of the Beatrice Offshore Wind Farm which is located in the outer Moray Firth 13.5 km from the Caithness coast. The total area of the development is 131.5 km². The operational lifespan of the wind farm is expected to be 25 years.

10.3.2 The original application was for a design envelope of up to 277 wind turbine generators (“WTGs”) and a maximum generating capacity of up to 1,000 MW. Since consent was granted in 2014, the design has been revised and the development will comprise 84 turbines. Piling operations are now complete.

10.3.3 Also included in the infrastructure is:

- Up to a maximum of three Offshore Substation Platforms (“OSPs”)
- Up to a maximum of three meteorological masts
- Up to 350 km of inter-array cabling linking turbines, OSPs and meteorological masts

10.3.4 BOWL construction started in April 2017 and will continue until approximately the end of 2019.

10.3.5 A full BOWL project description can be found [here](#).

10.4 Moray Offshore Eastern Development

10.4.1 The Moray Offshore Eastern Development consists of three proposed wind farm sites: the Telford, Stevenson and MacColl wind farms all situated within the development area. The original design envelope was

for up to 339 WTGs with a maximum generating capacity of up to 1,500 MW. This has since been reduced to a design with a maximum generating capacity of up to 1,116 MW and for a maximum of 186 WTGs. The proposals are located on the Smith Bank in the outer Moray Firth (approximately 22 km from the Caithness coastline, in water depths of 38 – 57 m). The operational lifespan of the wind farms is expected to be 25 years.

10.4.2 Substructure and foundation design for the WTGs will consist of either a mixture of, or one design option of:

- concrete gravity base foundation with ballast and a gravel/grout bed, or
- steel lattice jackets with pin piles.

10.4.3 A full project description for the Moray Offshore Eastern Development can be found [here](#).

10.4.4 Construction is anticipated to commence in April 2019, with piling activities due to commence in July 2019.

10.5 Moray East – Modified Offshore Transmission Infrastructure

10.5.1 The construction and operation of offshore transmission infrastructure in the Outer Moray Firth, to support the Moray Offshore Eastern Development, consisting of:-

- Up to 2 OSPs with associated substructures and foundations;
- Inter-platform cabling within the three consented Telford, Stevenson and MacColl wind farms; and
- Up to 4 triplecore submarine export cables between the OSPs and the shore.

10.5.2 Construction is likely to commence in March 2019.

10.6 Moray Offshore Eastern Development – Geophysical Surveys

10.6.1 Geophysical and geotechnical survey works are required to be carried out to inform the installation of the windfarms. The three surveys to be undertaken between 13 July 2017 and 31 August 2018 are:-

- Offshore Geophysical Survey and Shallow Site Investigation;
- Deep Geotechnical Site Investigation; and
- Near-shore Geophysical and Shallow Geotechnical Survey.

10.6.2 These surveys will involve the taking of boreholes and the use of multi-beam sonar, side-scan sonar, magnetometer and side-bottom profiling equipment.

10.6.3 The works are scheduled to be completed by 31 August 2018 so there should be no temporal overlap with the works by PoCF. Therefore, in-combination effects on any of the designated sites or the pSPA are unlikely and will not be considered further.

10.7 Hywind Scotland Pilot Park

10.7.1 Five 6MW turbines have been installed approximately 25 km off the coast at Peterhead, North East Scotland, just outside the 12 nautical mile territorial water limit. The project will be expected to produce up to 135 GWh per year of electricity. The turbines are positioned between 800 to 1,600 m apart and attached to the seabed by a three-point mooring spread and anchoring system. Three anchors are required per turbine and the radius of the mooring system extends 600 to 1,200 m out from each turbine.

10.7.2 The turbines are connected by inter-array cables which may require stabilisation in some locations. The export cable, which transports electricity from the Pilot Park to shore at Peterhead, is buried where seabed conditions allow. Where this is not possible cable protection in the form of concrete mattresses and rock is required. Both the inter-array and export cables have 33 kV transfer voltage. The export cable comes ashore at Peterhead and connects to the local distribution network at SSE Peterhead Grange substation. The onshore Project infrastructure comprises an underground cable approximately 1.5 km in length and a small switchgear yard facility close to Peterhead Grange substation.

10.7.3 This project has now finished construction and moved into the operational phase.

10.8 Aberdeen Harbour Expansion Project

10.8.1 Aberdeen Harbour Board proposes to develop a new harbour facility at Nigg Bay, Aberdeen, approximately 0.8km south of the existing harbour in Aberdeen City centre. Their proposal includes construction of two breakwaters, quaysides and associated infrastructure as well as a large-scale capital dredge and dredge spoil deposit operation. Works are scheduled to take place over a 3-year period and construction of the northern breakwater began in May 2017.

10.8.2 Dredging operations are expected to last until September 2019, which is when their dredging licence expires. Blasting operations are expected to commence in August 2018 for a maximum of 7 consecutive months. They are no longer undertaking any impact piling as they will be using rotary piling, which is thought to produce less noise. All marine elements of the works are scheduled to be complete by February 2020.

10.8.3 Full details of the project can be found in the documentation [here](#).

10.9 Aberdeen Harbour Expansion Project – Caisson Storage at Port of Invergordon

10.9.1 As part of the works for the Aberdeen Harbour Expansion Project, Aberdeen Harbour Board intends to store concrete caissons to be used in the project at the Port of Invergordon. Following their construction, the caissons will be transported to Invergordon for temporary storage prior to being transported to Aberdeen for use in the closed quay construction. They will be floated to one of two separate areas within the Port of Invergordon and moored to a series of temporary mooring points which will be installed. A maximum of nine caissons will be in storage at any one time. Caissons will be stored at Invergordon between June 2018 and September 2019.

10.10 Montrose Port Authority - Construction of a new quay wall.

10.10.1 The proposed works include the construction of a new quay wall and hard standing area. The new quay wall will be a piled structure installed using a combination of vibro and impact piling. If necessary, the existing quay wall will then be removed before the area is infilled to form the final surface. The main piling works are scheduled to commence in September 2018. Works are scheduled to continue until June 2019.

10.11 European Offshore Wind Development Centre – Aberdeen Bay Windfarm

10.11.1 The works involve the installation of a windfarm located between 2 and 4.5 km off the coast of Blackdog, consisting of 11 turbines, inter-array and export cables. Construction commenced in November 2017, beginning with foundations and cabling. All construction works have now been completed for this project and it is currently undergoing final testing. The works will be operational until 2032.

10.12 Forth and Tay Windfarm Developments

10.12.1 Although these projects were granted consent in 2014 they have not yet commenced construction and are currently in the process of submitting new applications. The consenting process for these projects (Inch Cape Offshore Windfarm, Neart na Gaoithe Offshore Windfarm and Seagreen Alpha and Bravo Offshore Windfarms is currently on-going.

10.13 SSE – Geophysical Surveys

10.13.1 The proposed works consist of the use of geophysical equipment which emits sound and noise generated from cable laying activities along the route of the Caithness to Moray HDVC cable. The works are licensed until August 2018 so are scheduled to be complete prior to the current anticipated schedule of works for the PoCF proposal. It is very unlikely that there will be any overlap in timeframes and therefore no in-combination effects are predicted on the designated sites or the pSPA from the two projects.

10.14 Caithness Moray Rock Placement

10.14.1 The works consist of the placement of rock protection along the route of the Caithness to Moray cable installed under previous consents. Deposit of 154,127 tonnes of crushed rock is proposed to be placed over the existing power cable bundle in areas of hard ground conditions. The rock placement activities will be executed by Dynamic Positioned Fall Pipe Vessels. Larger rocks (i.e. those that cannot be placed by fall pipe) will be placed on to the rock berm through use of a crane and large rock grab. The work will require the use of a Multi Beam Echo Sounder (“MBES”) system for pre- and post-work surveys, Ultra Short Baseline (“USBL”) positioning systems and beacons.

10.14.2 The rock laying works are scheduled to take place between 31 March 2018 and 31 August 2018 therefore, based on the current anticipated schedule of works for the PoCF proposal, it is very unlikely that there will be any overlap in timeframes and thus no in-combination effects are predicted on the designated sites or the pSPA from the two projects.

10.15 Avoch Harbour Trust – Construction of a Groyne, Pontoon and Slipway

10.15.1 The groyne was constructed using armoured rock. The rock was transported to the harbour by road and positioned using a mechanical digger and the groyne completed in March 2017.

10.15.2 Installation of the pontoons will begin in March 2019 at low tide. Rolled steel joints will be bolted to the inner harbour walls and attached to the walkways. The outer ends of the pontoon fingers will be anchored to the seabed with chains and concrete blocks. These works should be completed by October 2019.

10.15.3 The concrete work at the slipway will be carried out at low tide in March 2021/2022 using portable shuttering and ready mixed concrete.

10.15.4 The timing of these works means that there should be limited temporal overlap with the PoCF proposal and therefore no in-combination effects are predicted on the designated sites or the pSPA from the two projects.

10.16 Dredging operations

10.16.1 There are a number of dredging operations which were identified as having a likely significant effect on a designated site or the pSPA which could also be affected by the PoCF proposal. The table below summarises these projects.

Table 4. Dredging operations identified as having a likely significant effect on a designated site or pSPA also affected by the PoCF proposal.

Location of Dredge	Amount of Dredge Material	Dredge Spoil Deposit Area	Dates of Licence	Designated Site/pSPA
Macduff Harbour	48,000 m ³	Macduff	22 February 2016 – 21 February 2019	Moray Firth SAC
Portknockie	1000m ³	Buckie	06 October 2016 – 05 October 2019	Moray Firth SAC
Findochty	2900m ³	Buckie	06 October 2016 – 05 October 2019	Moray Firth SAC
Cullen	1000m ³	Buckie	06 October 2016 – 05 October 2019	Moray Firth SAC
Hopeman	500m ³	Burghead	06 October 2016 – 05 October 2019	Moray Firth SAC
Nigg Energy Park	6000m ³	Sutors	27 March 2017 – 26 March 2020	Moray Firth SAC
Avoch Harbour	1,000 tonnes	Avoch Harbour	02 January 2018 – 01 January 2019	Moray Firth pSPA
Aberdeen Harbour	295,000 tonnes	Aberdeen	06 April 2018 – 05 April 2019	Moray Firth SAC

10.17 Assessment of in-combination effects on the Moray Firth SAC

10.17.1 The following projects have the potential to have a likely significant effect on the Moray Firth SAC and overlap temporally with the PoCF proposal:

- BOWL (section 10.3)
- Moray Offshore Eastern Development (section 10.4)
- Moray East – Modified Offshore Transmission Infrastructure (section 10.5)
- Hywind Scotland Pilot Park (section 10.7)
- Aberdeen Harbour Expansion Project (section 10.8)
- Aberdeen Harbour Expansion Project – Caisson Storage at Port of Invergordon (section 10.9)
- Montrose Port Authority – Construction of a New Quay Wall (section 10.10)
- European Offshore Wind Development Centre Aberdeen Bay Windfarm (section 10.11)
- Forth and Tay Windfarm Developments (section 10.12)
- Dredging (section 10.16)
 - Aberdeen Harbour
 - Macduff Harbour
 - Portknockie
 - Findochty
 - Cullen
 - Hopeman
 - Nigg Energy park

10.17.2 Potential effects on the Moray Firth SAC from the PoCF proposal can broadly be divided into three areas which should be considered for in-combination effects: dredge spoil deposit activities, piling and underwater noise, and disturbance from vessel movements.

10.17.3 The only dredging project using the Sutors dredge spoil deposit area is the Nigg Energy Park. The volume of material to be deposited is 90,000 tonnes over a 3 year period. The PoCF proposal will require the deposit of a maximum of 130,000 tonnes. The remaining dredging projects are all utilising other dredge spoil deposit areas. Although there are in-combination effects MS-LOT do not consider that these will adversely affect the integrity of the Moray Firth SAC.

10.17.4 Underwater noise from piling has the potential to disturb the bottlenose dolphin feature of the SAC. Many of the projects listed above involve piling works of varying size and duration. The marine licences or section

36 consents for all of these projects include conditions requiring adherence to the Joint Nature Conservation Committee (“JNCC”) guidelines and the use of marine mammal observers and/or passive acoustic monitoring. The same conditions will be a requirement of any licence issued for the PoCF proposal. These conditions are considered to mitigate the noise sufficiently to ensure that there will be no adverse effect on the integrity (individually or in-combination by these proposals) on the Moray Firth SAC with respect to the bottlenose dolphin qualifying interest.

10.17.5 Increased vessel traffic from these works also has the potential to disturb bottlenose dolphins. The effect of vessel traffic is quite localised and the PoCF proposal will be carried out within the harbour limits where, as the statutory harbour authority, PoCF has full control of all vessel movements. In order to mitigate effects occurring from the PoCF proposal in isolation, a vessel management plan is required. Many of the other projects listed above also have a condition in their marine licence/s.36 consent requiring a vessel management plan and/or other appropriate measures, to mitigate disturbance to the bottlenose dolphin qualifying interest of the Moray Firth SAC.

10.17.6 MS-LOT, having considered the effects of underwater noise, dredge spoil deposit activities and vessel movements, concludes that the PoCF proposal in-combination with the other projects listed above will not adversely affect the site integrity of the Moray Firth SAC provided that the conditions within their respective AAs and detailed in section 4 of this AA are complied with.

10.18 Assessment of in-combination effects on the Dornoch Firth and Morrich More SAC

10.18.1 The following projects have the potential to have a likely significant effect on the Dornoch Firth and Morrich More SAC and overlap temporally with the PoCF proposal:

- BOWL (section 10.3)
- Moray Offshore Eastern Development Area (section 10.4)
- Moray East – Modified Offshore Transmission Infrastructure (section 10.5)

10.18.2 Construction is underway for BOWL and all piling works are complete. This combined with the location of the BOWL works in the outer Moray Firth means that it is not anticipated that there will be an in-combination effect with the PoCF proposal. The potential impact from the PoCF works

is to seals transiting between the SAC and the Cromarty Firth haulout site. The remaining works at BOWL will not affect this transit route.

10.18.3 Construction activities for the windfarms located within the Moray Offshore Eastern Development are anticipated to commence in April 2019, with piling activities due to commence in July 2019. Therefore, the periods of construction work, and resultant disturbance arising from underwater noise and additional vessel movements from both the Moray Eastern Offshore Development and the PoCF proposal may overlap. The AA for the Moray Offshore Eastern Development concluded that there would be no adverse effect on site integrity, provided that the conditions set out in the AA were complied with. Provided that the conditions set out in the Moray Eastern Offshore Development AA and this AA are complied with, MS-LOT concludes that there will be no significant adverse effect on the site integrity of the Dornoch Firth and Morrich More SAC in-combination with the PoCF proposal.

10.18.4 Construction activities related to the Moray East – Modified Offshore Transmission Infrastructure project are anticipated to commence in May 2019 and therefore, there will be an overlap with the proposed construction timescales associated with the PoCF proposal and resultant disturbance arising from construction noise and increased vessel movements. The AA for the Moray East – Modified Offshore Transmission Infrastructure works concluded that there would be no adverse effect on site integrity, provided that the conditions set out in the AA were complied with. Provided that the conditions set out in the Moray East – Modified Offshore Transmission Infrastructure AA and this AA are complied with, MS-LOT concludes that there will be no significant adverse effect on the site integrity of the Dornoch Firth and Morrich More SAC in-combination with the PoCF proposal.

10.18.5 MS-LOT, having considered the effects, concludes that the PoCF proposal in-combination with the other projects listed above will not adversely affect the site integrity of the Dornoch Firth and Morrich More SAC

10.19 Assessment of in-combination effects on the Moray Firth pSPA

10.19.1 The following project has the potential to have a likely significant effect on the Moray Firth pSPA and overlap temporally with the PoCF proposal:

- Avoch Harbour Dredging Activities (section 10.16)

10.19.2 The PoCF proposal has the potential to affect the breeding shag population at the entrance to the Cromarty Firth next to the Sutors dredge spoil deposit area. The Avoch Harbour dredging activities will use the Avoch Harbour dredge spoil deposit area so will not affect the shag population. Due to the spatial separation between these projects, it is not anticipated that there will be any in-combination effect of these proposals.

10.19.3 **MS-LOT, having considered the effects, concludes that the PoCF proposal in-combination with the other projects listed above will not adversely affect the site integrity of the Moray Firth pSPA.**

10.20 Assessment of in-combination effects on the Cromarty Firth SPA

10.20.1 There are no current projects for which a likely significant effect was identified on the Cromarty Firth SPA therefore no in-combination effects will occur.

11 MS-LOT Conclusion

11.1 **MS-LOT concludes that, providing the conditions listed in section 4 are adhered to, there will be no adverse effect on the site integrity of the Moray Firth SAC, the Dornoch Firth and Morrich More SAC, the Cromarty Firth SPA or the Moray Firth pSPA from the PoCF proposal either in isolation or in-combination with the other plans or projects detailed above.**

SECTION 4: CONDITIONS

12 Conditions required

12.1.1 The licensee must adhere to the approved CEMD (revision 3, dated 07 August 2018) and ensure that all mitigation measures listed are fully implemented. In the event that the licensee wishes to update or amend any of the protocols in the CEMD, the licensee must submit, in writing, details of proposed updates or amendments to the licensing authority for their written approval, no later than one month or at such a time as agreed with the licensing authority, prior to the planned implementation of the proposed updates or amendments. It is not permissible for any works associated with the proposed updates or amendments to proceed prior to the granting of such approval.

- 12.1.2 The licensee must submit full details of the vessels to be utilised in respect of the works, and their anticipated movements, to the licensing authority no later than 1 month, or at such a time as agreed with the licensing authority, prior to the commencement of the works.
- 12.1.3 The licensee must co-ordinate the movements of any vessels utilised in respect of the works with the vessel movements of any other developments or activities, taking place at the same time, to spread out vessel activity as far as is practically possible so that it does not occur simultaneously.
- 12.1.4 The licensee must ensure that no dredging or dredge spoil deposit activities take place during the month of May each year.
- 12.1.5 The licensee must ensure that the JNCC guidelines for minimising the risk of injury to marine mammals from piling noise dated August 2010 are followed at all times. These are available from the JNCC website:
http://jncc.defra.gov.uk/pdf/JNCC_Guidelines_Piling%20protocol_August%202010.pdf