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**MARINE WORKS (ENVIRONMENTAL IMPACT ASSESSMENT)  
REGULATIONS 2007 (REGULATION 22)**

**ENVIRONMENTAL IMPACT ASSESSMENT CONSENT DECISION**

PROJECT TITLE: KINCARDINE FLOATING OFFSHORE WINDFARM

APPLICANT: KINCARDINE OFFSHORE WINDFARM LIMITED

LOCATION: SOUTH-EAST OF ABERDEEN APPROXIMATELY 15KM FROM THE COASTLINE

<b>Name</b>	<b>Assessor or Approver</b>	<b>Date</b>
Tracy McCollin	Assessor	13 January 2017
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**1 Introduction**

1.1 This document constitutes an Environmental Impact Assessment (“EIA”) consent decision under regulation 22 of the Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) (“MWR”), for an application that has been submitted by Kincardine Offshore Windfarm Limited (“the Company”) in relation to the Kincardine Floating Offshore Windfarm (“the Development”), to Marine Scotland (“MS”), the Licensing Authority on behalf of the Scottish Ministers, for:

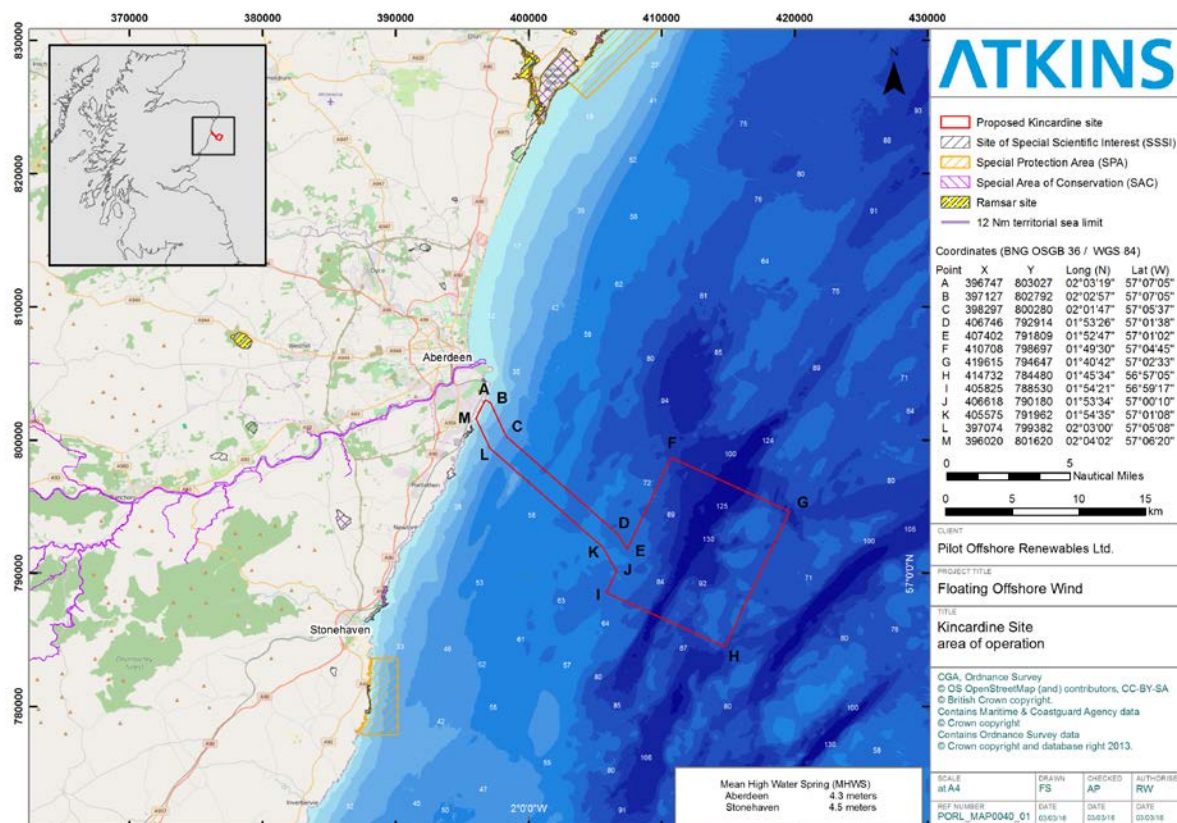
- a Marine Licence pursuant to Section 20 of the Marine (Scotland) Act (the “2010 Act”) and Sections 65 and 66 of the Marine and Coastal Access Act 2009 (the “2009 Act”) for the deposit of substances and objects and the construction, alteration or improvements of works within the Scottish Marine Area and the Scottish Offshore Region

1.2 The works described in this Consent Decision comprise part of a project listed in Annex II of the Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment (“the EIA Directive”). The EIA Directive has been transposed into UK law for marine works (including works requiring a Marine Licence) by the MWR.

1.3 The project in this instance comprises the marine elements of the Development, to be sited south-east of Aberdeen and approximately 15km off the coast as shown in Figure 1 below.

1.4 The application made to MS was supported by an Environmental Statement (“ES”) and supporting information as required by regulation 12 of the MWR.

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**Figure 1 Location of Kincardine Offshore Windfarm Limited**

## 2 Development description

2.1 The Development is considered a commercial demonstrator site, which will utilise floating foundation technology. The provisional site has an area of approximately 110km<sup>2</sup> and the intention is to install between six and eight turbines, each with a capacity of between 6 to 8 MW. The number and capacity of turbines will not exceed the 50MW cap for the demonstrator site.

2.2 A semi-submersible substructure has been selected as the preferred option and up to eight substructures will be deployed, connected by inter-array cables with the resultant power being exported directly to the onshore grid by two transmission cables. These will connect to the National Grid at Redmoss onshore substation, subject to final agreement with the operator.

## 3 The Environmental Statement

3.1 The principal potential impacts of the Development on a range of receptors, as detailed in the ES, are:

- The physical environment
- Benthic ecology
- Fish and shellfish
- Marine mammals
- Ornithology

- Underwater marine noise
- Maritime navigation
- Military and aviation
- Landscape, seascape and visual impact assessment
- Marine historic environment
- Socio-economics
- Commercial fisheries
- Other marine users

### 3.2 Habitats Regulations Appraisal

The Company submitted reports to inform a Habitats Regulations Appraisal (“HRA”) with the application on 23 March 2016, further information regarding HRA was also submitted on 23 September 2016. These reports were sent out for consultation. Based on information provided by Scottish Natural Heritage (“SNH”) MS concluded that the Development would be likely to have a significant effect on the qualifying interests as listed below. 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 Special Protection Area (“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

MS were therefore required to complete an Appropriate Assessment (“AA”).

- 3.3 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).
- 3.4 It is not a legal requirement under the Habitats Directive or relevant domestic regulations for the AA to assess the implications of the proposal on the pSPAs. The AA 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 the AA.
- 3.5 In accordance with regulation 50 of the Conservation (Natural Habitats, &c.) Regulations 1994, regulation 27 of the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) and regulation 64 of the Conservation of Habitats and Species Regulations 2010 the Scottish Ministers will, as soon as reasonably practicable following the formal designation of the pSPAs, review their decisions authorising the proposal. This will include a supplementary AA being undertaken, if LSE is identified, 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 The Appropriate Assessment**

- 4.1 The proposed Development required an AA under Regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994, Regulation 25 of the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 and

Regulation 61 of the Conservation of Habitats and Species Regulations 2010.

- 4.2 When SNH initially responded to the consultation, although recognising that impacts from the Development alone were small, when considered in combination with other consented east coast wind farms, 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

MS took account of this advice and that provided by Marine Scotland Science (“MSS”). After further discussion between MS and SNH agreement was reached that there was a great deal of precaution built into a number of the assessment methodologies which helped inform the final impact on kittiwakes. MS and SNH agreed that using a mortality rate due to displacement of 10% rather than the very precautionary 50% assumed by the Company in their HRA report was appropriate. Having considered this reduced mortality rate and non-breeding season effects, on 12 January 2017 SNH advised no adverse effect on site integrity with respect to kittiwake from the Development alone or in combination with other east coast wind farms.

- 4.3 SNH could not conclude that there will be no adverse effect on site integrity to the Forth Islands SPA with respect to puffin although they recognised that the Development is at the edge of the foraging range and the impacts from the Development will be proportionately far smaller than those predicted from the Forth and Tay. The effect from the Development was predicted to be only an additional 3 mortalities per year. Having considered the advice from SNH along with previous assessments for the Forth and Tay wind farms and the Hywind development MS concluded that the Development will not adversely affect the site integrity of the Forth Islands SPA with respect to Atlantic puffin, either alone or in-combination with the consented east coast wind farms. The reasons for diverging from SNCB advice with regard to puffin at Forth Islands SPA are fully explained at pages 36-40 of the [Forth and Tay AA](#).

- 4.4 A full explanation of the issues and justification for decisions regarding site integrity is provided in the AA, available on the Marine Scotland website.

## **5 Consultation**

- 5.1 This section summarises consultation on the Development undertaken by Marine Scotland in 2016.

### *Public consultation*

- 5.1.1 In accordance with Regulation 16(1)(b) of the MWR, Marine Scotland instructed the Company to place a public notice in relevant newspapers for two successive weeks. These public notices were combined with the public

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notice requirements essential under The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (as amended), the Electricity (Applications for Consent) Regulations 1990 (as amended) and the Marine (Scotland) Act 2010. The public notice contained details of:

- The Applicant's name and address that an Application had been made under Part 4 of the Marine (Scotland) Act 2010 and a statement of the nature and location of the Development
- The address details of where the Application and ES could be inspected during office hours
- Notice that parties could make such requests and representations to Scottish Ministers on the ES by specified dates

5.2 Notice of the Application and ES appeared in the following publications:

- Mearns Leader 15 & 22 April 2016
- Edinburgh Gazette 11 & 18 April 2016
- The Herald 08 & 15 April 2016

5.3 Notice of the further information appeared in the following publications:

- Mearns Leader 30 September & 14 October 2016
- Edinburgh Gazette 23 & 30 September 2016
- The Herald 27 September & 04 October 2016

5.4 Under The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (as amended) the applicant was required to place public notices following the first statutory consultee response which was substantive to the ES, hence the additional notices which were placed in:

- Mearns Leader 17 & 24 June 2016
- Edinburgh Gazette 17 & 24 June 2016

5.5 Consultees

As part of the consideration of the Application and ES, Marine Scotland conducted a consultation with advisory and regulatory bodies for comment on the validity of the ES document and the conclusions of environmental impact drawn. The consultation on the ES opened on 08 April 2016 and closed on 20 May 2016 with Local Authorities permitted additional time in accordance with The Electricity (Applications For Consent) Regulations 1990 (as amended). Extensions to provide comments were permitted to consultees if required. In response to consultation comments received as part of the original consultation exercise, further information was also submitted and issued for consultation on 23 September 2016, this consultation closed on 04 November 2016.



#### 5.5.1 Consultee List

The Application, ES, further information and accompanying documents were sent to the consultees listed in table 1 below.

**Table 1 List of consultees**

Aberdeen City Council	King's Links Golf Club
Aberdeenshire Council (Kincardine & Mearns Area)	Marine Safety Forum
Joint Nature Conservation Committee	Marine Scotland Compliance, Aberdeen Fisheries Office
Maritime and Coastguard Agency	Montrose Port Authority
Northern Lighthouse Board (NLB)	Murcar Links Golf Club
Scottish Environment Protection Agency	National Air Traffic Services
Scottish Natural Heritage	National Trust for Scotland
	Network Rail
Marine Scotland Science	Newburgh-on-Ythan Golf Club
	Nigg Bay Golf Club
Aberdeen Offshore Wind Farm	Northern Golf Club
Aberdeen and Stonehaven Yacht Club	Portlethen Golf Club
Aberdeen Harbour Board	River Dee Trust & District
Aberdeen International Airport	Salmon Fishery Board
Association of Salmon Fishery Boards	River Don Trust
Bon Accord Golf Club	River Forth Fisheries Trust & District Salmon Fishery
Bond Offshore Helicopters	Royal Aberdeen Golf Club
Bristow Helicopters Ltd	Royal Yachting Association
British Telecom (Radio Network Protection Team)	RSPB Scotland
Caledonian Golf Club	Scottish Canoe Association
Chamber of Shipping	Scottish Environmental Link
CHC Scotia	Scottish Fishermen's Federation
Civil Aviation Authority	Scottish Fishermen's Organisation
Defence Infrastructure Organisation	Scottish Pelagic Fishermen's Association
Dunecht Estates	Scottish Sub-Aqua Club
East Coast Scallop Association	Scottish Surfing Federation
East Grampian Coastal Partnership	Scottish White Fish Producers' Association
Esk District Salmon Fishery Board	Scottish Wildlife Trust
Fishing Vessel Agents & Owners Association (Scotland) Limited	SG Planning
Historic Environment Scotland	Sport Scotland
Inshore Fishery Group - East Coast	Stonehaven Golf Club
Joint Radio Company	Stonehaven Harbour
	Surfers Against Sewage
	The Crown Estate
	Transport Scotland
	Transport Scotland, Ports & Harbours
	Trump International
	Vattenfall Wind Power Ltd
	Visit Scotland
	Whale & Dolphin Conservation

## **6 Summary of consultation responses received**

- 6.1 The following text provides a brief summary of the representation received from the public. This is followed by an outline of the main impacts identified in the ES, the relevant responses received from consultees in relation to each of these and, where applicable, suggested mitigation measures.
- 6.2 A representation was received from Mainstream Renewable Power (“MRP”) on behalf of Neart na Gaoithe Offshore Wind Limited (“NnGOWL”). MRP noted errors in the ES and Addendum in relation to:
- The design information for NnGOWL and other offshore windfarms in the Forth and Tay
  - The construction start dates for the Forth and Tay offshore wind projects
- 6.3 Other comments from MRP were in relation to proposed SPAs and ongoing discussions MRP are having with SNH regarding likely assumptions for future AAs. There was also a request for clarification regarding exclusion zones.
- 6.4 The majority of MRP’s comments were to inform the AA and, as the AA used the details from the consents for the Forth and Tay projects, the information used by MS-LOT to undertake the Appropriate Assessment was correct.

## **7 The physical environment**

- 7.1 The ES provided an assessment of the potential effects of construction, operation and decommissioning of the Development on key coastal processes within the physical environment. The processes considered were suspended sediment concentration (“SSC”), sediment erosion (most notably scour), sediment transport and deposition. The effect of the Development on metaocean conditions i.e. water levels, currents and waves, is expected to be negligible and were not considered further. The ES provided information regarding the sampling and analysis that had been undertaken to provide the baseline information for the assessment. The potential impacts identified were:
- Disturbance of seabed/sediments during anchor deployment causing SSC plume
  - Sediment disturbance and SSC plume generation from inter-array cabling installation (if burial is required)
  - Sediment disturbance and SSC plume generation during dredging and burial of export cables
  - Seabed scour erosion around anchor structures during operational phase
- 7.2 The outline design envelope for the Development contained a range of embedded mitigation measures to minimise environmental effects. These are:

- Activities carried out during construction, maintenance and decommissioning should be limited to normal/calm tidal current and wave conditions to reduce sediment disturbance and SSC plume generation. This will also reduce other risks e.g. vessel collisions during activities.
- Construction will take place during summer months when wave energy is lower than during winter months
- Co-ordination of works vessels to ensure that disturbance to the seabed is for as limited a period as possible
- Following best practice and guidance for pollution at sea, this will be detailed in the final Project Environment Management Plan (“PEMP”) to reduce and coordinate response to pollution events if they were to occur

7.3 Cumulative impacts were considered but it is judged there would be limited scope for such impacts to occur. The potential for cumulative impact with the new Aberdeen Harbour Expansion Project was considered but it is judged unlikely that there would be an increased impact owing the very different scales of the projects i.e. the impact from the Development would not be discernible from those of the Aberdeen Harbour Expansion Project. In summary, the assessment concluded that the residual impact significance was either negligible or minor for all impacts and no additional mitigation beyond the embedded mitigation described above would be required.

7.4 SNH noted that they agreed with this conclusions of the ES and SEPA and MSS had no further comments to add to those provided for the Scoping Opinion.

## **8 Benthic ecology**

8.1 The ES provided an assessment of the potential effects of the Development on benthic subtidal ecology i.e. epibenthic and benthic fauna living in and on the seabed respectively. The ES characterised the benthic ecology with the Development Area and Offshore Export Cable Corridor up to the Mean Low Water Mark (“MLWM”). This was done by evaluating survey data and desk studies. The potential impacts for each stage of the Development were:

### *Development Area*

#### **Construction and decommissioning**

- Direct temporary disturbance of seabed habitats caused by construction activities
- Direct loss of seabed habitat
- Indirect impacts of temporary increases in SSC from construction based activities and associated deposition

#### **Operation**

- Changes in tidal regime and associated sediment transportation

- Scour and associated sediment transportation leading to a change in the benthic ecology and/or biodiversity
- Responses to electromagnetic fields and thermal emissions
- Temporary habitat disturbance from operations and maintenance activities
- Colonisation of structure and seabed features leading to a change in benthic ecology
- Temporary habitat disturbance from operation and maintenance

#### *Offshore Export Cable Corridor*

### **Construction and decommissioning**

- Direct temporary disturbance of seabed caused by construction based activities
- Loss of original habitat
- Indirect impacts of temporary increases in SSC from construction activities
- Indirect impacts of temporary increases in SSC from construction based activities and associated deposition

### **Operation**

- Colonisation of structure and seabed features leading to a change in benthic ecology
- Responses to electromagnetic fields (“EMF”) and thermal emissions
- Temporary habitat disturbance from operation and maintenance activities

8.2 The outline design envelope for the Development contained a range of embedded mitigation measures to minimise environmental effects. These are:

- Vessels and plant relating to construction, decommissioning and operation will follow best practice and guidance for pollution at sea, detailed in the final PEMP
- Vessels and equipment during construction, operation and maintenance and decommissioning will follow best practice guidelines for pollution at sea in order to reduce and coordinate the response to pollution events
- Non-indigenous species introductions will be managed through preventative measures by following best practice guidelines such as the International Convention for the Control and Management of Ships’ Ballast Water and Sediments and additionally through the Scottish Code of Practice on non-native species
- Cables will be suitably buried or protected by other means when burial is not practicable

- 8.3 A total of three biotypes were recorded (Subtidal soft sediments (SS.SCS.FiSa and SS.SCS.CCS) and Offshore soft sediments (SS.SSa.OSa)) and are considered to be typical of the region and widely distributed geographically. No Annex I habitats listed in the EU Habitats Directive or Priority Marine Features were observed at any of the 68 sample locations.
- 8.4 The cumulative impact of the different components of the Development (Development Area and Offshore Export Cable Corridor) was taken into consideration. However, the assessment concluded that there would be no cumulative impacts with regard to other projects as owing to the location and scale of other projects they were considered to be sufficiently distant to the Development that no impact was predicted. In summary, the assessment concluded that the residual impact significance was either negligible or minor for all impacts and no additional mitigation beyond the embedded mitigation described above would be required.
- 8.5 SEPA noted that a risk of introducing non-native species had been identified and provided details of best practice guidance that should be followed and SNH agreed with the conclusions of the ES.

## 9 Fish and shellfish

- 9.1 The ES described the baseline of fish and shellfish ecology in the Development Area and the Offshore Export Cable Corridor and assessed the impact these would have. Fish populations are described both at the local level and at the wider regional level (North Sea) to provide context to the baseline. The assessment was based on a desk based review of existing data sources and the drop-down video surveys undertaken to assess the benthic ecology and habitat characterisation in the area. These surveys combined with commercial fisheries information provides an indication of the species likely to be present. There are designated sites in this area that have relevant qualifying interests:

- River Dee Special Area of Conservation (“SAC”) – Atlantic salmon (*Salmo salar*)
- River South Esk SAC - Atlantic salmon (*Salmo salar*)
- River Spey SAC - Atlantic salmon (*Salmo salar*) and sea lamprey (*Petromyzon marinus*)

- 9.2 The potential impacts identified for each stage of the Development are:

### *Development Area*

#### **Construction**

- Direct temporary habitat disturbance
- Habitat loss

- Disturbance or physical injury associated with construction and installation noise

### **Operation and maintenance**

- Creation of new habitat from project infrastructure
- Effect on fish and shellfish resources due to reduced fishing pressure in the area
- Effects of EMF and thermal emissions associated with subsea cables
- Disturbance or physical injury associated with operational noise

### *Offshore Export Cable Corridor*

#### **Construction**

- Direct temporary habitat disturbance
- Habitat loss
- Disturbance or physical injury associated with construction and installation noise

#### **Operation**

- Creation of new habitat from project infrastructure
- Effect on fish and shellfish resources due to reduced fishing pressure in the area
- Effects of EMF and thermal emissions associated with subsea cables

9.3 The outline design envelope for the Development contained a range of embedded mitigation measures to minimise environmental effects. These are:

- Cables will be buried to a target depth of 1.5m in accordance with Department of Energy and Climate Change (DECC, now the Department of Business, Energy and Industrial Strategy (“BEIS”)) Guidelines (2011)<sup>1</sup> which will reduce the potential for impacts relating to EMF
- Cables will be specified to reduce EMF emissions as per industry standards and best practice such as the relevant IEC (International Electrotechnical Commission) specifications
- Sensitive migration or spawning times will be avoided where possible during construction

9.4 The assessment considered cumulative impacts between the different components of the Development (Development Area and Offshore Export Cable Corridor) as well as with other projects. In summary, the assessment concluded overall that the residual impact significance was either negligible

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<sup>1</sup> DECC. (2011). National Policy Statement for renewable Energy Infrastructure (EN-3). Available Online: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/37048/1940-npsrenewable-energy-en3.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/37048/1940-npsrenewable-energy-en3.pdf)

or minor for all impacts and no additional mitigation beyond the embedded mitigation described above would be required.

- 9.5 SNH agreed with the conclusions of the ES and welcomed the commitment to bury cables to a 1.5m depth where possible. They noted the lack of published literature on critical levels to diadromous fish of exposure to suspended sediments in the marine environment but also noted that the increased turbidity from this development would be unlikely to be at a level that would have significant adverse impacts on diadromous fish. MSS agreed that the embedded mitigation measures would minimise environmental effects on fish and shellfish and noted that the National Research and Monitoring Strategy for Diadromous Fish (“NRMSD”) to investigate the potential for interactions between diadromous fish and wind, wave and tidal renewable energy developments should be considered. The Esk District Salmon Fishery Board (“DSFB”), Esk River and Fishery Trust and the Dee DSFB noted similar issues in relation to diadromous fish and wanted more detail on the cable route, the potential need for mitigation of the effects of EMF and the need for a monitoring and research programme. The Dee DSFB noted the need for a precautionary approach given the likely marine survival issue affecting salmon stocks in the River Dee. Both DSFBs wished to be consulted on the route of the cable and noted that as more information becomes available there may be a need to apply mitigation measures in relation to EMF but recognised that this Development offers an opportunity to gain a greater understanding of the impacts of marine renewable developments can have on migratory salmonids. MSS also noted the need for further information regarding the presence of salmonids in the Development area.

## 10 Marine mammals

- 10.1 The ES assessed the potential impacts on marine mammals from the Development Area and the Offshore Export Cable Corridor. The baseline information was based on using existing published information and the findings of the HiDef aerial surveys commissioned for the Development in 2013 and 2014. There are designated sites on the east coast which have marine mammals as qualifying interests, these are:
- Moray Firth SAC – Bottlenose Dolphin (*Tursiops truncatus*)
  - Dornoch Firth and Morrich More SAC – Harbour seal (*Phoca vitulina*)
  - Firth of Tay and Eden Estuary SAC - Harbour seal (*Phoca vitulina*)
  - Faray and Holm of Faray SAC – Grey Seal (*Halichoerus grypus*)
  - Isle of May SAC – Grey Seal (*Halichoerus grypus*)
  - Berwickshire and Northumberland Coast SAC - Grey Seal (*Halichoerus grypus*)
- 10.2 The ES considered the following impacts:
- Disturbance /displacement, barrier to movement from wind turbine generator numbers and layout



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- Seabed disturbance from inter-array cabling. Indirect changes to habitat and distribution/abundance of prey
- Seabed disturbance from export cabling. Indirect changes to habitat and distribution/abundance of prey
- Seabed disturbance from mooring system. Indirect changes to habitat and distribution/abundance of prey
- Electromagnetic fields
- Corkscrew injuries
- Marine mammal entanglement
- Noise disturbance
- Pollution due to leaks and spills at site from vessels/wind turbine generators
- Collision risk from vessel movement

10.3 The outline design envelope for the Development contained a range of embedded mitigation measures to minimise environmental effects. In summary these are:

- Vessels and plant used will follow industry best practice and guidance, which will be detailed in the PEMP, to reduce and coordinate response to pollution events. The PEMP will also include provision for the storage of pollutants.
- Defined navigation routes will be used by vessels to minimise the risk of collision with marine mammals
- All materials used will be safe for use within the marine environment
- Export cables will be buried to a depth of 1.5 m or protected by other means such as rock dumping or concrete mattresses to reduce the impacts associated with EMF
- Emergency spill procedures specific to the protection of the marine environment will be outlined in the final PEMP
- Mooring lines will be routinely maintained and checked for debris with gear removal programmes put in place where necessary. Load cells will be attached to mooring devices and subsea cables and used to alert the Developer if there is an unexpected load on the devices
- Marine mammal observers will be present on the vessels when appropriate. The use of acoustic deterrent devices (“ADD”) and/or Passive Acoustic Monitoring (“PAM”) will be considered if necessary and relevant to the species of concern.
- If possible, programme the construction activities that would have the most impact on marine mammals outside of the peak periods for marine mammal presence i.e. August and September

10.4 The potential impacts on marine mammals were considered in relation to construction and operation, with decommissioning impacts assumed to be the same as construction or lower. Cumulative impacts between the different components of the project (Development Area and Export Cable Corridor) and with other projects were assessed. The assessment concluded that overall impacts will be of minor significance or lower.

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- 10.5 The comments received covered a range of issues. Aberdeenshire Council highlighted that Local Nature Conservation Sites extend approximately 2km offshore to take account of associated ornithological and cetacean interests.
- 10.6 SNH agreed with the conclusions of the ES that the impacts are likely to be minor/negligible but noted a marine mammal observer should be used prior to all noisy construction activities. SNH commented that as there would be no piling the main potential impacts were entanglement and disturbance. SNH recommended a detailed entanglement monitoring and reporting schedule is provided as part of the PEMP. Disturbance due to the cable laying are likely to be limited as it is estimated to take three days.
- 10.7 MSS had some concerns about the use of data previously presented in other applications for the following reasons:
- Noise assessments – noise propagation in water is dependent on site specific factors such as water depth and seabed type so using data from the ES of another project may not be directly transferable. However, as noise impacts are reduced for this Development owing to the lack of piling MSS were content that the risk of auditory injury through exposure to noise is very much reduced.
  - Baseline marine mammal distribution – much of the text in the ES is based on work carried out for the European Offshore Windfarm Deployment Centre and so is not directly relevant to the KOWL development. However, MSS were content that the HiDef surveys covered the development area and the results were consistent with expectations.
- 10.8 Other points raised by MSS were that there may be a need for European Protected Species (“EPS”) licences to carry out the geophysical surveys and that recordings of the sound profiles produced by the operational floating wind turbines would improve understanding in this area. MSS did not consider it likely that acoustic deterrent devices would provide a useful mitigation for this Development and Whale and Dolphin Conservation (“WDC”) were of the same view. MSS agreed that vessel transit routes could be addressed in the PEMP and requested more information on how mooring lines would be monitored for derelict fishing gear and noted this monitoring would provide useful information on whether, and, if so, how frequently, marine mammals become entangled in the moorings.
- 10.9 Other comments were received from the Scottish Wildlife Trust (“SWT”) who commented they were pleased to see a commitment to cumulative and collaborative monitoring and data sharing. WDC had no major concerns provided marine mammal observers and passive acoustic monitoring were used. WDC requested more detail on the impact of noise from towed anchoring and rock placement or concrete mattresses (if used) and noted they would like to be involved in the development of the PEMP.

## 11 Ornithology

11.1 The ES provided an assessment of the potential impacts arising from the Development Area and from the Offshore Export Cable Corridor and included an indication of any cumulative effects. As there are several sites designated for birds that could be potentially affected by the Development an Appropriate Assessment was carried out as part of a Habitats Regulations Appraisal and this contains more detailed information regarding the assessment of impact on the birds. The AA can be found on the Marine Scotland website.

11.2 The ES considered the following impacts:

### **Construction (and Decommissioning)**

- Temporary disturbance and/or displacement
- Accidental release of contaminants
- Disturbance to prey species (indirect impact)

### **Operation**

- Collision risk (birds)
- Displacement
- Disturbance
- Entanglement
- Contamination e.g. from antifouling paints, corrosion inhibitors, oil leakage from equipment and accidental pollution events
- Habitat loss/disturbance to prey species (indirect impact)

11.3 The outline design envelope for the Development contained a range of embedded mitigation measures to minimise environmental effects. These are:

- Vessels and equipment during construction, operation and maintenance and decommissioning will follow best practice guidelines for pollution at sea in order to reduce and coordinate the response to pollution events. These will be detailed in the PEMP.
- Export cables will be suitably buried or protected by other means when burial is not practicable

11.4 The baseline data were collected from a variety of sources and the search area for the project includes ornithological populations of interest from Fowlsheugh to the south and the Ythan Estuary and Sands of Forvie in the north. A list of European protected sites where there could be potential impact was collated and the ES provided information on the features of each of these sites and the distance of the site from the Development. Sixteen months of aerial bird surveys were carried out on a monthly basis by HiDef, the area surveyed included the proposed Development site and a 8km buffer around it. The data from these two sources were used to estimate bird

densities for the site and to carry out the collision risk modelling to inform the assessment. An in-combination assessment was also carried out to take account of the potential cumulative impact of the Development with other offshore wind farms.

- 11.5 The overall conclusion of the ES was that the potential impacts were all of minor significance in terms of their residual impact.
- 11.6 The comments from SNH and the Royal Society for the Protection of Birds (“RSPB”) disagreed with this conclusion. Although recognising that impacts from the Development in isolation were small, both had concerns about the cumulative effect of the Development, particularly in-combination with the Forth and Tay windfarms. SNH noted that the Development on its own would not have an adverse effect on site integrity but would in-combination with other offshore wind farms. RSPB stated that if the Forth and Tay windfarms did not proceed or were revised such that their impacts were significantly reduced then they would review their position on this Development.
- 11.7 The further information addendum considered potential effects on proposed marine SPAs as well as monitoring in relation to impacts on birds.
- 11.8 SNH provided detailed comments back on the ES and concluded that they could not advise no adverse effect on site integrity for kittiwake from Fowlsheugh SPA or Atlantic puffin from Forth Islands SPA. MS undertook an AA and the final outcome was that MS and SNH agreed the ES approach taken to values given for kittiwake mortality due to displacement (50%) were very precautionary and that a figure of 10% was more appropriate. Having considered this reduced mortality rate and non-breeding season effects, on 12 January 2017 SNH advised no adverse effect on site integrity for Fowlsheugh SPA with respect to kittiwake from the Development alone or in combination with other east coast wind farms.
- 11.9 For Atlantic puffin from Forth Islands SPA SNH could not advise no adverse effect on site integrity but acknowledged that the Development is at the edge of the agreed foraging distance from the Forth Islands SPA and that the impacts of the Development will be proportionately far smaller than those predicted from the Forth and Tay. SNH also noted that further work is required on puffin impact assessment methodology and supporting modelling work. Based on this advice from SNH and knowledge from previous appropriate assessments carried out by MS for the [Forth and Tay](#) offshore wind farms MS concluded that there would be no adverse effect on site integrity of the Forth Islands SPA with respect to puffin.

## **12 Underwater marine noise**

- 12.1 The ES provided an assessment of the potential impact of underwater noise on marine mammals and fish. It was noted that a key limitation of this assessment is that due to the demonstrator nature of the floating offshore systems there is currently no knowledge on the operational noise levels

produced by the floating substructure. The ES presented information in relation to the Development Area and the Offshore Export Cable Corridor and identified the following activities that may have an impact on underwater noise:

### **Construction and Decommissioning**

- Installation/removal of interarray cables
- Installation of possible cable protection (rock dumping)
- Installation/removal of anchor systems (anchor handling vessels)
- Installation of WTGs (towing vessels)
- Installation of export cable
- Export Cable Route surveying

### **Operational**

- Operation and maintenance vessels (small)
- Cable repair (if required)
- WTG operation noise

12.2 The baseline data were collected by reviewing ES' for previous offshore windfarm applications ([Hywind](#), [Inch Cape](#), Seagreen [Alpha](#) and [Bravo](#) and [Neart na Gaoithe](#)). The assessment used established threshold values in order to compare the noisy activities against. The distance and amount of displacement each activity has on individual selected species was determined and this was compared to impact piling to provide context for the Development. Noise modelling was carried out to assess the noise relating to the Development Area and the Offshore Export Cable Corridor. The modelling produces an output that gives an approximate figure that represents the area of ocean which is rendered potentially unusable by a species as a result of a particular activity when using the 90 dB<sub>HT</sub>(*species*) criteria which relates to a strong avoidance reaction by virtually all individuals. Four fish species and three mammal species known to be of relevance to the Development Area were used as proxies for other species. The conclusion of the assessment was that none of the activities were considered likely to cause noise at a level that would result in auditory injury and the behavioural response range had a tiny impact area when compared to the noise range of impact piling.

12.3 As noted above (10 Marine mammals), SNH, MSS and WDC agreed that the lack of pile driving reduced the risk of potential impacts from noise. MSS raised concerns regarding the use of data from other ES' as they may not be relevant to this site. MSS noted that the Development provided an opportunity to learn more about the sound profiles produced by the operational floating turbines which would improve understanding in this area.

### **13 Maritime navigation**

- 13.1 The ES considered all vessels navigating within the waters in proximity to the Development and carried out a navigation risk assessment in line with standard guidance. The baseline data were gathered by carrying out a dedicated shore based marine traffic survey, using Automatic Identification System (“AIS”) and radar track data of vessel movements. The objective was to identify vessel activity both within, and adjacent to, the Development. Data from other sources were also used to inform the description of the baseline. Embedded mitigation or standard industry guidance was applied to minimise navigational impacts and following the impact assessment additional mitigations were included to ensure the risks associated with the Development are As Low As Reasonably Practicable (“ALARP”) as required by the specific methodology required by maritime operators. Cumulative impacts with other offshore developments and construction activities were also assessed.
- 13.2 The following receptors were identified for this Development and the potential impact on each assessed:
- Commercial vessels safe operations
  - Commercial vessels routeing
  - Fishing vessel safe operation
  - Recreational craft (2.5m to 24m)
  - Vessel engaged in port activities
  - Emergency response
- 13.3 The conclusion of the assessment was that, with appropriate mitigation, the residual impact would be broadly acceptable or tolerable with mitigation for all receptors.
- 13.4 The Maritime and Coastguard Agency (“MCA”) noted a requirement for some clarifications or additions e.g. regarding safety zones, cable burial and protection, Emergency Response Cooperation Plan, aviation lighting, installation of AIS receivers and communication with vessels and risk and mitigation of mooring line failures. However, they considered that once these requirements were met they would be able to accept the licence request and noted that they would provide detailed consent conditions once these concerns had been addressed. The Northern Lighthouse Board (“NLB”) noted the need for the Lighting and Marking Plan and that this will require the Statutory Sanction of the NLB prior to deployment. They also noted the requirement for Notices to Mariners, Radio Navigation Warning and publication in appropriate bulletins stating the nature and timescale of any works carried out in the marine environment relating to this project. NLB also noted the Hydrographic Office should be informed so the appropriate admiralty charts can be updated. The Royal Yachting Association Scotland (“RYAS”) were, in principle, not opposed to the Development. They had some concerns about the underestimation of recreational craft but agreed with the conclusion of the ES that most would pass either inside or outside of the Development location. RYAS felt there was a lack of evidence to support

having operational safety zones although they recognised there was a need for safety zones during construction and decommissioning. RYAS felt operational safety zones required a proactive approach so that infringements could be detected and infringers warned. They also noted that consideration should be given to the most effective way of updating recreational sailors as standard systems may not be useful, particularly for those from continental Europe.

## **14 Military and aviation**

14.1 Aviation activity can be affected by wind turbines in a number of ways e.g. impact with the structures themselves, interference with navigational equipment, commercial and military aviation radar and electromagnetic obstruction and reflection from towers and blades. The baseline assessment identified that the following may be affected by the Development:

- A single military air defence radar (Buchan) located approximately 4 km south of Peterhead
- Two civil en-route radar (Allanshill and Perwinnes) located approximately 9 km southwest of Fraserburgh and 6 km north of Aberdeen respectively
- Helicopter routes from the mainland over the North Sea

14.2 The assessment also used data from other floating windfarms to provide information on the substructure movement. The assessment was made up of two parts, with the civilian and military radar/aviation risks assessed separately.

14.3 To identify possible impacts on civilian aviation issues an National Air Traffic Services (“NATS”) self-assessment was used and for the Ministry of Defence (“MOD”) their preferred assessment approach was undertaken by SERCO to produce a bespoke mitigation modelling report (confidential and not included in the ES). The potential impacts identified were an increase in the number of false returns from WTG rotation and that the helicopter route could be changed/cancelled depending on weather conditions (during construction transit to site). False returns are caused by the rotating turbine blades appearing as targets on the radar screen, as the blade is moving it can be detected and displayed as a target on the radar screen giving the impression that there is an aircraft at the WTG location when in fact there is not. The assessment recommended mitigation such as an upgrade of the Buchan radar system or a software upgrade to the Perwinnes radar and concluded that the residual impact significance would be low.

14.4 NATS and the MOD did not agree with this assessment and there was ongoing discussion with the developer regarding what mitigation could be put in place to mitigate the impacts. NATS objected to the proposal because of the impact on the Perwinnes radar which would affect the operations of the NATS Air Traffic Control Centre at Aberdeen airport which relies on the radar. NATS worked with the developer and the users of the radar to identify a solution that is acceptable to all parties. Aberdeen International Airport (“AIA”) submitted a holding objection while working with NATS to resolve the

issue. Further discussions between the Company and NATS have resulted in a mutually acceptable agreement (letter from NATS dated 13 January 2017) which both parties have entered in to regarding suitable conditions and the implementation of an identified and defined Mitigation and Services Scheme. These conditions are as follows:

1. No part of any Turbine shall be erected above sea level until a primary radar mitigation scheme agreed with the operator has been submitted to and approved in writing by Scottish Ministers in order to avoid the impact of the development on the primary Radar of the Operator located at Perwinnes and associated air traffic management operations.

2. No part of any turbine shall be erected above sea level until the approved primary radar mitigation scheme has been implemented and the development shall therefore be operated fully in accordance with such approved scheme. The MOD accepted a technical proposal from the developer to mitigate the unacceptable effects of the Development and provided text to be included in a condition. The MOD also provided text for a condition in relation to aviation lighting for the turbines.

- 14.5 Conditions required by NATS and MOD will be included in any marine licence/section 36 consent if granted by Scottish Ministers.

## **15 Landscape, seascape and visual impact assessment**

15.1 The ES considered the Development Area and the Offshore Export Cable Corridor as part of the assessment and considered the potential effects on seascape and landscape character caused by changes to their key characteristics and qualities as a result of the WTGs and floating sub-structures and the construction of the Offshore Export Cable Corridor.

15.2 A distance of 40 km was used as the zone of theoretical visibility and maps were produced that identified the area that may be impacted by the WTGs and floating sub-structures. These two components were assessed separately as they will be two different colours i.e. floating sub-structures will be yellow in colour for marine navigational purposes and the WTGs will be a matt grey colour. A desk top review of the existing landscape, seascape and visual amenity within the assessment area was carried out. A total of 23 viewpoints were identified with input from MS, Aberdeen City Council (“ACC”), Aberdeenshire Council (“ASC”) and SNH. The assessment included a range of embedded mitigation measures:

- WTGs will be placed in a regular grid subject to requirements during installation of anchors
- WTGs will be of equal dimensions
- The WTGs will be pale grey in colour. This reduces the distance over which the WTGs are visible, especially in dull or overcast conditions. Offshore the WTGs are viewed against the sky, consequently grey is the most appropriate colour as it is closest to that of the lower part of the sky under most frequent UK weather conditions.



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- 15.3 The assessment considered the following to be the potential impacts from the installation and decommissioning of inter-array cables, anchors, WTGs and floating sub-structures, maintenance of WTGs and sub-structures and the operation of the windfarm:
- Short term impact to seascape and landscape resources due to presence of vessel
  - Short term impact to seascape and landscape as the WTGs and floating sub-structures are towed to site
  - Changes to seascape/landscape resources as WTGs and floating sub-structures are towed back to port for maintenance
  - Changes to seascape/landscape resources due to the presence of the windfarm once installed and commissioned
- 15.4 An assessment of the cumulative impacts was also carried out with other windfarms in the vicinity of the Development. The European Offshore Wind Deployment Centre was included as part of this assessment but all the other relevant windfarms were >35 km away and no further assessment was deemed necessary. The assessment noted that the expansion of Aberdeen Harbour in Nigg Bay will likely mask the visual impact of the Development and its visual impact from around Nigg Bay will be significantly reduced. The assessment concluded there would be a moderate/major impact of the Development on seascape at Aberdeen Links, Girdle Ness/Nigg Bay and Downies and there would be a moderate/major impact of on visitors and walkers to the following areas – Coastal path at Findon, Downies and Stonehaven Golf Club (Garrow Point).
- 15.5 ACC initially objected to the Development but on reviewing the additional information provided in the Addendum concluded that although they maintained that there would be adverse cumulative seascape/landscape and visual effects these were acceptable on this occasion. ASC had raised similar issues (although did not object) but after reviewing the further information welcomed the clarification to the points they had raised and do not have an objection to the Development. Historic Environment Scotland (“HES”) had some concerns about the methods used to assess the impact of the Development on the setting of Dunnottar Castle but were content that although there will be an impact the setting of the monument it will not be so significant as to raise issues of national significance. SNH concluded that the Development would not raise issues of national importance (as defined by SNH) as it does not impact on landscape resources designated for national importance. However, SNH noted that there would be significant regional and local cumulative impacts and that ACC and ASC may require further information. As noted above this was provided and both ACC and ASC had no objection to the Development. VisitScotland (“VS”) noted that any potential detrimental impact of the Development on tourism be identified and considered in full. VS also suggested a tourism impact assessment be carried out.

## 16 Marine historic environment

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16.1 The ES assessed the potential effects of construction, operation and decommissioning of the Development on the marine historic environment within the Development Area and the Offshore Export Cable Corridor. The following activities were undertaken to establish the baseline information:

- Provision of a brief background to UK policy and statutory protection given to wrecks in UK waters
- A desktop study identifying any recorded wrecks and other features of marine interest within the Development Area and Offshore Export Cable Corridor
- An estimate of the historical importance of each recorded feature
- Definition of a suggested exclusion zone around each recorded feature

16.2 The baseline information established that 11 ship and aviation wreck sites should be considered in the ES assessment. These were located in or within a 500m buffer of the Development Area or Offshore Export Cable Corridor. The assessment took into account the following potential impacts on these sites:

- Disturbance of sediments during anchor deployment which could smother/bury wrecks
- Sediment disturbance and suspended sediment plume generation during installation of inter-array cables which could smother/bury wrecks
- Seabed/sediment disturbance and suspended sediment plume generation during dredging and burial of export cables which would displace during dredging or smother/bury wrecks
- Suspended sediments created due to scour erosion around anchor structures during operational phase which could smother/bury wrecks

16.3 A range of embedded mitigation measures to minimise environmental effects were included in the outline Design Envelope. The measures relevant to the marine historic environment are summarised below:

16.4 Geophysical survey

A geophysical survey will be carried out to verify the locations of existing known (named) and unknown wreck sites identified during the desktop survey. This survey will also identify any new wrecks, areas of interest or anomalies in the Development Area and along the Offshore Export Cable Corridor. The survey will be the principal embedded mitigation and will use side scan sonar, sub-bottom profiling and magnetometry surveys to assess the seabed and sub-seabed environment.

16.5 Protocol for Archaeological Discoveries

A protocol will be set up to ensure that any unexpected or incidental find relating to the historic environment identified during the pre-construction surveys or during construction and installation activities is recorded. This protocol will be in line with the Crown Estate (2014) Protocol for Archaeological Discoveries: Offshore Renewables Projects. A Protocol for

Archaeological Discoveries (“PAD”) provides a system for reporting and investigating unexpected archaeological discoveries encountered during construction and installation works. Finds are reported through the PAD Implementation Service (“IS”), researched by members of the IS team and the information is disseminated and recorded in the relevant national databases.

#### 16.6 Management of sediment disturbance

To reduce sediment disturbance and suspended sediment plume generation during the construction, operation and maintenance and decommissioning activities should be limited to ‘normal’/calm tidal current and wave conditions. This will reduce the footprint over which plumes can have a potential impact. It is anticipated that construction will take place during summer months when wave energy is lower than during winter months.

#### 16.7 Vessel co-ordination

There will be co-ordination of the works vessels to ensure that disturbances to the seabed is for as limited a period as possible.

16.8 The assessment identified that there may be moderate/major impacts on two wrecks. Wreck U40 was assessed to be affected by the deployment/removal of the inter-array cables and the anchors and mooring lines and the Prince Consort by the ploughing of trenches for cable laying and burial. There were also several minor/moderate effects on other wrecks. However, it was noted that the assessment was carried out based on a desktop study and that a geophysical survey of the area would be used to aid the detailed design stage. The survey will determine the exact locations of the wrecks and this will determine the final routes for the export cables and the location of the anchors and inter-array cables. The cable route will also be assessed by magnetic anomaly survey to ensure the area is clear of unexploded ordnance. It was also noted that the cable corridor is depicted with a buffer zone but that the trenches that will be dredged will only be 3m wide so there is leeway to avoid wrecks if necessary. The cumulative effect of the combined impacts from the Development Area and the Offshore Export Cable Corridor were considered and it was concluded there would be no cumulative impact. The same conclusion was given for the cumulative impacts of Aberdeen Harbour Expansion Project and other windfarms. The assessment concluded that the distances of these other projects from the Development meant there was no cumulative impact. The overall conclusion of the assessment was that with the additional mitigation of the more detailed surveys to be carried out that the residual impact significance would be no more than negligible or minor.

16.9 HES were content in principle with the proposed Development and considered that there would be no adverse impacts on marine or terrestrial assets within their remit with would raise significant concerns. HES were content with the proposed mitigation providing their suggested conditions in

relation to a written scheme of investigation (“WSI”) and adoption of a suitable protocol for archaeological discoveries (“PAD”) were implemented.

## **17 Socio-economics**

- 17.1 An assessment was undertaken with consideration to the socio-economic context of the local area in terms of its baseline conditions and the relevant local and national policy documents. A range of socio-economic indicators were identified to inform the assessment including population, economic activity, unemployment, qualifications and occupational profile. The socio-economic indicators for each of the geographical areas of Aberdeen City, Aberdeenshire and Scotland were used to provide a snap-shot of the socio-economic character of the Aberdeen City and Shire impact area and comparison to the national picture across Scotland. The assessment considered how the Development will affect the socio-economic baseline conditions, during both construction and operational phases. Quantitative and qualitative impacts have been considered where possible, including employment, possible disruption during the construction phase and other impacts.
- 17.2 The assessment concluded that during the construction phase there would be a temporary, beneficial effect, of minor significance for the economy of Aberdeen City and Shire. The employment and economic impacts during operation were considered to be negligible as there would be a small number of jobs in the context of the existing economy of Aberdeen and Shire. Disruption to the local residents or businesses during the construction and/or operation of the Development were also considered to be negligible as most of the Development will be based offshore. The route of the cable will follow is on the edge of an existing industrial estate and will not impact on business operations in any significant way. The distance of the Development offshore and the limited onshore works means there is a negligible impact on tourism and recreation in the local area. No cumulative impacts in socio-economic terms were identified. The overall conclusion was that during construction, installation, operation and maintenance and decommissioning there would be a positive impact on a local and national level and a negligible impact on tourism and local disruption.
- 17.3 ACC raised concerns about the lack of detail in the ES regarding the characteristics of the employment being created (e.g. skills group) and noted that the economic benefits would not necessarily directly benefit the local communities of Altens or Cove. ACC also noted that there was not enough information in the ES to substantiate the claims that there would be negligible effects on local disruption and tourism or no impact, negligible or minor effects in economic terms on fisheries. However, on the provision of the further information ACC considered that the matters they raised were satisfactorily addressed. ACC recognised that the Development is intended to create jobs within the local economy but did not raise any specific concerns regarding socio-economic impacts. MSS noted that the additional information provided reanalysed the fisheries impact based on consultee comments to the ES and noted it would be useful to see the methodology

and results to be reassured by the ‘minor’ impact assessment. VS urged consideration of the effects of the Development on the local tourism industry but did not raise issues specific to this Development. VS recommended that an independent tourism impact assessment be carried out.

## 18 Commercial fisheries

18.1 The ES provided a summary of the existing commercial fisheries activities in the vicinity of the Development. To quantify spatial and temporal variation, commercial fisheries are described both at a local level and at a wider regional and national level to provide context to the baseline. Commercial fisheries were defined as any legal fishing activity undertaken for declared taxable profit. The baseline data were collected and collated from a variety of sources and included fisheries statistical datasets, grey and peer reviewed literature and consultation with fishermen and their representatives. The main fishing methods used in area are dredging for scallops, demersal trawling for *Nephrops* and squid and creeling for lobster, edible crabs and velvet crabs. Salmon and sea trout fisheries were also considered. The impacts considered in the assessment were:

- Adverse impacts on commercial and recreational fish and shellfish populations (covered in Section 9) and any knock on effects to commercial fisheries
- Loss of or restricted access to fishing grounds during construction and operation
- Safety issues for fishing vessels from navigation and entanglement of gear (covered in Section 13)
- Increased steaming time to/from fishing grounds

18.2 Assessment of the impact to salmon and sea trout was included in summary in Section 9 and is not repeated in this section. The assessment took into consideration the following embedded mitigation:

- A Regional working group will be established in order to provide a forum for collaborative discussion and action in relation to the Project.
- A construction management plan will be developed in consultation with the fishing industry representatives which establishes a protocol for engagement between the Development and the fishing industry.
- 500m safety zones around working areas during construction, decommissioning and any major maintenance activities. Consultation with relevant stakeholders will ensure efficient and effective implementation and management of safety/exclusion zones.
- Structures within the Development Area will be marked and lit in accordance with International Association of Lighthouse Authorities (IALA) best practice and recommendations for the marking of offshore structures (IALA, 2008).
- Cables will be suitably buried as directed in the DECC (2011) guidance or will be protected by other means when burial is not practicable, this will help to reduce the risk of snagging fishing gear.

- Continued consultation and dissemination of information will be carried out to ensure information about the works are circulated through agreed procedures such as Notices to Mariners and Kingfisher to allow vessels to effectively and safely navigate around proposed sites.
- 18.3 The potential cumulative impacts for the Development Area and the Offshore Export Cable Corridor during construction/decommissioning and operation phases were assessed as were the cumulative impacts of the Development with other relevant marine and coastal developments. The overall summary of the assessment was that there was no more than a minor impact for any of the effects.
- 18.4 The Scottish Fishermen’s Federation (“SFF”) noted their concerns regarding the process used to define the final development site within the Agreement for Lease area had not been addressed. SFF noted that the baseline descriptions do not take into account the cyclical nature of some fisheries and that the growth in the squid fishery had been missed from the application. SFF objected to the proposal on the basis that the concept of co-existence with developments had not been considered. SFF highlighted their expectation that there would be a consent condition to ensure that there was mitigation for any lost fishing grounds. SFF also noted the need for careful consideration of the export cable route and the need to examine alternatives to rock dumping and mattresses in the event of non-burial. Following the provision of the further information the SFF had no further objections but provided a clarification and correction regarding text about a Fishing Community panel and noted this was actually meant to refer to input to a Fisheries Development fund proposed and managed by industry. MSS provided several corrections and clarification to the ES text and requests for further information but did not raise any specific objections. MSS noted that the further information provided detail on additional mitigation measures. Further confirmation has been provided by SFF that subject to appropriate conditions, it is content to remove its objection.
- 18.5 These conditions will require:
- The appointment of a Fisheries Liaison Officer (“FLO”),
  - Submission of a Cable Plan (“CaP”),
  - A Project Environmental Monitoring Programme (“PEMP”),
  - Developer participation in a regional advisory group and developer participation in a Fisheries Group with the aim of producing a Fisheries Management and Mitigation Strategy (“FMMS”)

## **19 Other marine users**

- 19.1 The ES provided an assessment of the impact on other marine users and activities that were not covered by the other chapters. The baseline description of these activities was compiled from available published data. The impacts on the following activities were assessed:

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- Cables and pipelines
- Inadvertent detonation of unidentified unexploded ordnance
- Scuba diving
- Other water sports
- Coastal golf

19.2 A series of mitigation measures were taken into consideration:

- Provision of safety/exclusion zones around construction activities (500m)
- Regular amendments to relevant United Kingdom Hydrographic Office (“UKHO”) admiralty charts to mark the location of WTGs and subsea cable routes
- Regular Notice to Mariners to avoid disruption to RYA cruising routes and to minimise any navigational disruption along these routes
- Consultation strategy to be agreed with relevant recreation groups, clubs and authorities to inform all key recreational users of the sea and coastline of the implications of the Development and to facilitate feedback in order to minimise disruption if possible
- Prior to construction a review of the current status of the East Coast High-voltage Direct Current (“HVDC”) route will be undertaken with National Grid/Scottish and Southern Energy (“SSE”) to ensure that the Offshore Export Cables is considered in their development plans and what impact this cable could have on the Project.

19.3 A cumulative assessment was also carried out. The overall conclusion of the assessment was that the impact significance was negligible or minor for all receptors except unexploded ordnance which was considered to have a major impact significance. Additional mitigation to include an unexploded ordnance survey reduced the residual impact significance to minor.

19.4 The Aberdeen and Stonehaven Yacht Club (“ASYC”) did not believe the Development would have an impact on their activities. The RYAS did not object to the Development and raised some other concerns which are discussed in Section 13.

## 20 Summary

20.1 The ES and further information addendum conclude that for the majority of the receptors there will not be a significant environmental impact. This is owing to the scale and location of the Development. The embedded mitigation included in the ES and, in some cases, additional mitigation identified as part of the assessment will reduce the majority of the impacts to an acceptable level.

20.2 However, there are some environmental impacts that have been of more concern:

- The cumulative impact of the in-combination assessment with other offshore wind farms on kittiwake and puffin was initially considered to have an adverse effect on site integrity under HRA. However following

consideration of a realistic value for mortality due to displacement SNH advised that there would be no adverse effect on site integrity for Fowlsheugh SPA with respect to kittiwake. SNH could not advise that there would be no adverse effect of site integrity for Atlantic puffin at Forth Islands SPA but acknowledged the Kincardine Development was right on the edge of the agreed foraging range for puffin and that the impact of the Development would be proportionately far less than that from the Forth and Tay windfarms. MS took this advice into account along with their knowledge from previous appropriate assessments of the [Forth and Tay](#) windfarms and reached a conclusion that there would be no adverse effect on site integrity for Atlantic puffin from Forth Islands SPA.

- The effect of the Development on radar installations at RAF Buchan and the Perwinnes radar which would affect the operations of the NATS Air Traffic Control Centre at Aberdeen airport which relies on the radar. There has been a great deal of work between the developer, NATS, MOD and AIA to resolve this issue and agreement has been reached and text for a condition agreed.
- ACC and ASC raised similar concerns regarding the adverse cumulative seascape/landscape and visual effects but ACC noted these were acceptable on this occasion and ASC did not object to the Development
- The major impact of unexploded ordnance will be mitigated by carrying out a survey to identify any unexploded ordnance prior to starting works
- SFF removed their objection subject to appropriate conditions.

20.3 The embedded mitigation and any additional mitigation identified in the ES will be incorporated into the conditions included in any consent granted by Scottish Ministers for this Development under section 36 of The Electricity Act (1989) and/or any marine licence granted.

## **21 Conditions**

21.1 This section contains the conditions included in both the Marine Licence and section 36 consent. For ease of cross referencing the same numbers as used in the Marine Licence and section 36 consent are used.

## **22 Marine Licence conditions**

### **3.1 General conditions**

#### **3.1.1 Compliance with the Application and approved plans**

The Licensee must at all times construct and operate the Works in accordance with this Licence, the Application, the Environmental Statement (as supplemented by the further environmental information submitted by the Company on 22nd September 2016), the section 36 consent and the plans and programmes approved by the Scottish Ministers.

The Licensee must, at all times, maintain the Works in accordance with the approved Operation and Maintenance Plan (“OMP”).



**Reason:** To ensure compliance with the Marine Licence, and the Environmental Statement associated with the application.

### 3.1.2 Licence conditions binding other parties

All conditions attached to this licence bind any person who for the time being owns, occupies or enjoys any use of the Works for which this licence has been granted in relation to those licensed activities authorised under item 5 in section 21(1) of the 2010 Act and item 7 in section 66(1) of the 2009 Act whether or not this licence has been transferred to that person.

**Reason:** To safeguard the obligations of the licence, in accordance with s.29(5) of the Marine (Scotland) Act 2010 and s.71(5) of the Marine and Coastal Access Act 2009.

### 3.1.3 Vessels, vehicles, agents, contractors and sub-contractors

The Licensee must provide, as soon as reasonably practicable in advance of their engagement in the Works authorised under this licence, the name and function of any vessel, vehicle, agent, contractor or sub-contractor appointed to engage in the Works to the Licensing Authority. Where applicable the notification must include the vessel type, vessel IMO number and vessel owner or operating company.

The Licensee must ensure that any changes to the supplied details must be notified to the Licensing Authority, in writing, 14 days prior to any vessel, vehicle, agent, contractor or sub-contractor engaging in the Works.

The Licensee must ensure that only those vessels, vehicles, operators, agents, contractors or sub-contractors notified to the Licensing Authority are permitted to carry out any part of the Works.

The above details must be recorded in section 2.5 and 2.6 of this licence. If not provided at application these details and any subsequent changes will require a variation to the licence to update section 2.5 and 2.6 prior to engagement in the Works.

The Licensee must satisfy themselves that any masters of vessels or vehicle operators, agents, contractors or sub-contractors are aware of the extent of the Works for which this licence has been granted, the activity which is licensed and the terms of the conditions attached to this licence. All masters of vessels or vehicle operators, agents, contractors and sub-contractors permitted to engage in the Works must abide by the conditions set out in this licence.

The Licensee must give a copy of this licence, and any subsequent variations made to this licence in accordance with section 30 of the 2010 Act and section 72 of the 2009 Act, to the masters of any vessels, vehicle operators, agents, contractors or sub-contractors permitted to engage in the

Works, and must ensure that the licence and any such variations are read and understood by those persons.

**Reason:** *To ensure all parties involved in the Works are aware of the licence and its conditions, to reduce the risk of a breach of the licence, in accordance with s.39(1)(b) of the 2010 Act and s.85.(1)(b) of the Marine and Coastal Access Act 2009*

#### 3.1.4 Force Majeure

Should the Licensee or any of their agents, contractors or sub-contractors, by any reason of force majeure deposit anywhere in the marine environment any substance or object, then the Licensee must notify the Licensing Authority of the full details of the circumstances of the deposit within 48 hours of the incident occurring (failing which as soon as reasonably practicable after that period of 48 hours has elapsed). Force majeure may be deemed to apply when, due to stress of weather or any other cause, the master of a vessel or vehicle operator determines that it is necessary to deposit the substance or object other than at the Site because the safety of human life or, as the case may be, the vessel, vehicle or marine structure is threatened. Under Annex II, Article 7 of the Convention for the Protection of the Marine Environment of the North-east Atlantic, the Licensing Authority is obliged to immediately report force majeure incidents to the Convention Commission.

**Reason:** *To provide a defence for the Master to protect himself and his crew in the event of a force majeure, in accordance with s.29(2)(a) of the 2010 Act and s71(2)(a) of the Marine and Coastal Access Act 2009 .*

#### 3.1.5 Material alterations to the licence application

The Licensee must, where any information upon which the granting of this licence was based has, after the granting of the licence, altered in any material respect, notify the Licensing Authority of this fact, in writing, as soon as is practicable.

**Reason:** *To ensure that the Works are carried out in accordance with the Application documentation, in accordance with s.29(2)(a) of the 2010 Act and s71(2)(a) of the Marine and Coastal Access Act 2009.*

#### 3.1.6 Submission of plans and specification of studies and surveys to the Licensing Authority

The Licensee must submit plans and the details and specifications of all studies and surveys that are required to be undertaken under this licence in relation to the Works, in writing, to the Licensing Authority, for their written approval. Commencement of the studies or surveys and implementation of plans must not occur until the Licensing Authority has given its written approval to the Licensee.

Plans or the specification of studies and surveys prepared pursuant to another consent or licence relating to the Works by the Licensee or by a third party may also be used to satisfy the requirements of this licence.

**Reason:** *To ensure that the Licensing Authority is kept informed on progress of the Works, in accordance with s.29(3)(c) of the 2010 Act and s71(3)(c) of the Marine and Coastal Access Act 2009.*

### 3.1.7 Submission of reports to the Licensing Authority

The Licensee must submit all reports and notifications to the Licensing Authority, in writing, as are required under this licence within the time periods specified in this licence. Where it would appear to the Licensee that there may be a delay in the submission of the reports to the Licensing Authority, then the Licensee must advise the Licensing Authority of this fact as soon as is practicable and no later than the time by which those reports ought to have been submitted to the Licensing Authority under the terms of this licence.

The reports must include executive summaries, assessments and conclusions and any data will, subject to any rules permitting non-disclosure, be made publically available by the Licensing Authority or by any such party appointed at their discretion.

Reports, prepared pursuant to another consent or licence relating to the Works by the Licensee or by a third party, may also be used to satisfy the requirements of this licence.

Such reports will include, but not be limited to, Transport Audit sheets, deposits sheets and Marine Mammal Observer (“MMO”) reports.

**Reason:** *To ensure that all reports and notifications are submitted within a reasonable timescale after licence is granted, in accordance with s.29(3)(c) of the 2010 Act and s71(3)(c) of the Marine and Coastal Access Act 2009.*

### 3.1.8 Chemical usage

The Licensee must ensure that all chemicals which are to be utilised in the Works have been approved by the Licensing Authority prior to use. All chemicals which are to be utilised in the Works must be selected from the List of Notified Chemicals assessed for use by the offshore oil and gas industry under the Offshore Chemicals Regulations 2002 (as amended) or as exempted. The Licensee must submit a report of all chemicals and quantities to be used (e.g. oils and fluorinated gases) during the construction and operation of the Works to the Licensing Authority no later than one calendar month prior to the Commencement of the Works. Any changes to the types of chemicals which are proposed to be utilised must be consulted on with the Licensing Authority prior to the Commencement of the Works or, as the case may be, after the Commencement of the Works but prior to their utilisation.

**Reason:** *To minimise the environmental impact in the event of a release through the use of authorised chemicals in the interest of protecting the environment, in accordance with s.29(2)(b) of the 2010 Act and s71(2)(b) of the Marine and Coastal Access Act 2009.*

### 3.1.9 Fluorinated greenhouse gases

The Licensee must ensure that all equipment to be utilised in the Works that contains fluorinated greenhouse gases (hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride and other greenhouse gases that contain fluorine, listed in Annex I of Regulation (EU) 517/2014 and The Fluorinated Greenhouse Gases Regulations 2015 (“the Regulations”), or mixtures containing any of those substances) must take precautions to prevent the unintentional release (‘leakage’) of those gases. They must take all measures which are technically and economically feasible to minimise leakage of fluorinated greenhouse gases.

Where a leakage of fluorinated greenhouse gases is detected, the Licensee must ensure that the equipment is repaired without undue delay.

The Licensee must ensure that all equipment to be utilised in the Works that contains fluorinated greenhouse gases in quantities of 5 tonnes of CO<sub>2</sub> equivalent or more and not contained in foams must ensure that the equipment is checked for leaks in accordance with the Regulations. Records of leak checks must be kept in accordance with the Regulations. These records must be submitted to the Licensing Authority annually, and immediately in the event of discovery of any leak.

Where the equipment is subject to leak checks under the Regulations, and a leak in the equipment has been repaired, the Licensee must ensure that the equipment is checked by a certified person within one calendar month after the repair to verify that the repair has been effective. In such event, the Licensing Authority must be informed of the date of discovery, date of repair and date of inspection.

**Reason:** *To ensure compliance of the Works with Regulation (EU) 517/2014 and The Fluorinated Greenhouse Gases Regulations 2015, in accordance with s.29(2)(b) of the 2010 Act and s71(2)(b) of the Marine and Coastal Access Act 2009.*

### 3.1.10 Environmental protection

The Licensee must ensure that all reasonable, appropriate and practicable steps are taken at all times to avoid or minimise any damage to the Scottish marine area as a result of the undertaking of the licensed activities.

The Licensee must ensure that all personnel adhere to the Scottish Marine Wildlife Watching Code, where appropriate, during all installation, operation and maintenance activities authorised under this licence.

The Licensee must ensure that any debris or waste material placed below MHWS during the construction and operation of the Works is removed from

the Site, as soon as is reasonably practicable, for disposal at a location above the MHWS approved by the Scottish Environment Protection Agency (“SEPA”).

Prior to the Commencement of the Works the Licensee must agree with the Licensing Authority, in writing, the details of the appointment of a Marine Mammal Observer (“MMO”). When appointed, the MMO must, as a minimum, maintain a record of any sightings of marine mammals and maintain a record of the action taken to avoid any disturbance being caused to marine mammals during pre-construction and geophysical surveys and construction activities. The Licensee must provide the Licensing Authority with the MMO’s records no later than 1 calendar month following Commencement of the Works, and at monthly intervals thereafter.

The Licensee must ensure that all substances and objects deposited during the execution of the Works are inert (or appropriately coated or protected so as to be rendered inert) and do not contain toxic elements which may be harmful to the marine environment, the living resources which it supports or human health.

The Licensee must ensure that the risk of transferring marine non-native species to and from the Site is kept to a minimum by ensuring appropriate bio-fouling management practices are implemented during the Works.

The Licensee must ensure that if oil based drilling muds are utilised they must be contained within a zero discharge system. Any drill cuttings associated with the use of water-based drilling muds situated within the Site of the Works need not be removed from the seabed.

**Reason:** *To ensure environmental impacts are minimised, in accordance with s.29(2)(b) of the 2010 Act and s71(2)(b) of the Marine and Coastal Access Act 2009.*

### 3.1.11 Availability of the licence for inspection

The Licensee must ensure that copies of this licence and any subsequent amendments or variations are available for inspection at any reasonable time by any authorised marine enforcement officer at:

- a) the premises of the Licensee;
- b) the premises of any agent, contractor or sub-contractor acting on behalf of the Licensee;
- c) any onshore premises directly associated with the Works; and
- d) aboard any vessel engaged in the Works.

**Reason:** *To ensure the licence is available for the purpose of inspection, in accordance with s.29(2)(b) of the 2010 Act and s71(2)(b) of the Marine and Coastal Access Act 2009.*

### 3.1.12 Inspection of the Works

## Environmental Impact Assessment Consent Decision – Kincardine Offshore Wind Farm

Any persons authorised by the Licensing Authority must be permitted to inspect the Works at any reasonable time. The Licensee must, as far as reasonably practicable, on being given reasonable notice by the Licensing Authority (of at least 72 hours), provide transportation to and from the Site for any persons authorised by the Licensing Authority to inspect the Site.

**Reason:** *To ensure access to the Site for the purpose of inspection, in accordance with s.29(2)(b) of the 2010 Act and s71(2)(b) of the Marine and Coastal Access Act 2009.*

### 3.1.13 Emergencies

If the assistance of a Government Department (to include departments of Administrations other than the Scottish Government) is required to deal with any emergency arising from:

- a) the failure to mark and light the Works as required by this licence;
- b) the maintenance of the Works; or
- c) the drifting or wreck of the Works,

to include the broadcast of navigational warnings, then the Licensee is liable for any expenses incurred in securing such assistance.

**Reason:** *To ensure licensee is aware of financial liabilities, in accordance with s.29(2)(b) of the 2010 Act and s71(2)(b) of the Marine and Coastal Access Act 2009.*

## 3.2 Conditions specific to the Works

### 3.2.1 Conditions applicable to all phases of the Works

#### 3.2.1.1 Serious Incident Reporting

In the event of any breach of health and safety or environmental obligations relating to the Works during the period of this licence, the Licensee must provide written notification of the nature and timing of the incident to the Licensing Authority, including confirmation of remedial measures taken and/or to be taken to rectify the breach, within 24 hours of the incident occurring.

**Reason:** *To keep the Scottish Ministers informed of any such incidents which may be in the public interest, in accordance with s.29(3)(c) of the 2010 Act and s71(3)(c) of the Marine and Coastal Access Act 2009.*

#### 3.2.1.2 Bunding and storage facilities

The Licensee must ensure suitable bunding and storage facilities are employed to prevent the release of fuel oils and lubricating fluids associated with the plant and equipment into the marine environment.

**Reason:** *To ensure pollution prevention is undertaken, in accordance with s.29(2)(b) of the 2010 Act and s71(2)(b) of the Marine and Coastal Access Act 2009.*

### 3.2.1.3 Restoration of the Site to its original condition

The Licensee must take all reasonable, appropriate and practicable steps to restore the Site to its original condition before the Works were undertaken, or to as close to its original condition as is reasonably practicable, in accordance with the Project Environmental Monitoring Plan (“PEMP”) and the Decommissioning Programme (“DP”) to the satisfaction of the Licensing Authority. Should the Works be discontinued prior to Completion of the Works, the Licensee must inform the Licensing Authority in writing of the discontinuation of the Works. A separate marine licence will be required for the removal of the Works.

**Reason:** *To mitigate the effects of the activity on the Site, in accordance with s.29(3)(e) of the 2010 Act and s71(3)(e) of the Marine and Coastal Access Act 2009.*

### 3.2.1.4 Emergency Response Co-operation Plans (“ERCoP”)

The Licensee must, in discussion with the Maritime and Coastguard Agency’s (“MCA”) Search and Rescue Branch, complete an Emergency Response Co-operation Plan (“ERCoP”) for the construction and operation phases. The ERCoP must include full details for the construction and operation phases of the authorised scheme in accordance with MCA recommendations contained within Marine Guidance Notice (“MGN”) 543 (or subsequent updates). A copy of the final plan must be submitted to the Licensing Authority no later than 3 calendar months, or at such a time as agreed with the Licensing Authority, prior to the Commencement of the Works.

**Reason:** *To ensure the Licensing Authority is aware of the ERCoP, in accordance with s.29(3)(c) of the 2010 Act and s71(3)(c) of the Marine and Coastal Access Act 2009.*

## 3.2.2 Prior to the Commencement of the Works

### 3.2.2.1 Commencement date of the Works

The Licensee must, prior to and no less than 1 calendar month before the Commencement of the Works, notify the Licensing Authority, in writing, of the date of Commencement of the Works authorised under this licence.

**Reason:** *To inform the Licensing Authority of the date of the Works, in accordance with s.29(3)(c) of the 2010 Act and s71(3)(c) of the Marine and Coastal Access Act 2009.*

### 3.2.2.2 Third Party Certification or Verification

The Licensee must, no later than 3 calendar months prior to the Commencement of the Works, provide the Licensing Authority with Third Party Certification or Verification (or suitable alternative as agreed, in writing, with the Licensing Authority) for all WTGs, mooring systems and WTGs platform structures.

**Reason:** *To provide independent certification or verification of the technology, materials or equipment, in accordance with s.29(2)(b) of the 2010 Act and s71(2)(b) of the Marine and Coastal Access Act 2009.*

### 3.2.2.3 Navigational and Aviation Safety and Charting

The Licensee must, no later than 7 days prior to Commencement of the Works, notify the UK Hydrographic Office (“UKHO”) of the proposed Works to facilitate the promulgation of maritime safety information and updating of Admiralty charts BA741 and BA743 and publications through the national Notice to Mariners system.

The Licensee must, no later than 7 days prior to Commencement of the Works, ensure that local mariners, fishermen's organisations and HM Coastguard, in this case Aberdeen Coastguard Operations Centre, are made fully aware of the Works through local Notice to Mariners or by any other appropriate means.

The Licensee must ensure that details of the Works are promulgated in the Kingfisher Fortnightly Bulletin, prior to Commencement of the Works to inform the Sea Fish Industry of the vessel routes, the timings and the location of the Works and of the relevant operations.

The Licensee must, no later than 14 days prior to Commencement of the Works and prior to any WTGs being towed to the site, ensure that airmen are aware of the Works through local Notice to Airmen (“NOTAM”) or by any other appropriate means.

The Licensee must, prior to Commencement of the Works, complete an “Application for Statutory Sanction to Alter / Exhibit” form and submit this to the Northern Lighthouse Board (“NLB”) for the necessary sanction to be granted.

The Licensee must notify the Defence Geographic Centre (“DGC”) (mail to [dvof@mod.uk](mailto:dvof@mod.uk)) of the locations, heights and lighting status of the turbines, the estimated dates of construction and the maximum height of any construction equipment to be used, no later than 10 weeks prior to the Commencement of the Works, to allow for the appropriate notification to the relevant aviation communities.

The DGC must be updated when the actual dates of construction are known.

**Reason:** *To reduce the navigational risk to other legitimate users of the sea, in accordance with s.29(2)(b) of the 2010 Act and s71(2)(b) of the Marine and Coastal Access Act 2009.*

### 3.2.2.4 Noise Registry

The Licensee must complete and submit a Proposed Activity Form in the online Marine Noise Registry for all aspects of the Works that will produce loud, low to medium frequency (10Hz-10kHz) impulsive noise no later than 7 days prior to Commencement of the Works. If any aspects of the Works



differ from the Proposed Activity Form in the online Marine Noise Registry, the Licensee must complete and submit a new Proposed Activity Form no later than 7 days prior to Commencement of the Works.

**Reason:** *To ensure compliance with reporting requirements on marine noise, in accordance with s.29(3)(c) of the 2010 Act and s71(3)(c) of the Marine and Coastal Access Act 2009.*

### 3.2.3 During the Works

#### 3.2.3.1 Transportation audit sheet

The Licensee must submit to the Licensing Authority a detailed transportation audit sheet for each calendar month during the period when construction of the Works is undertaken. This sheet must be submitted within 14 days of the end of each calendar month. It must cover all aspects of the construction of the Works. The transportation audit sheet must include, but not be limited to, information on the loading facility, vessels, equipment, shipment routes, schedules and all materials deposited (as described in Part 2 of this licence) in that calendar month. Where, following the submission of a transportation audit sheet to the Licensing Authority, any alteration is made to the component parts of the transportation audit sheet, the Licensee must notify the Licensing Authority of the alteration in the following month's transportation audit sheet.

If the Licensee becomes aware of any substances or objects on the transportation audit sheet that are missing, or becomes aware that an accidental deposit has occurred, the Licensee must contact the Licensing Authority as soon as practicable after becoming aware, for advice on the appropriate remedial action (which may include requiring charts to be amended to show such deposits). Should the Licensing Authority deem it necessary, the Licensee must undertake a side scan sonar survey in grid lines (within operational and safety constraints) across the area of the Works, to include cable routes and vessel access routes from local service port(s) to the Site to locate the substances or objects. If the Licensing Authority is of the view that any accidental deposits associated with the construction of the Works are present then the deposits must be removed by the Licensee as soon as is practicable following the giving of such a view by the Licensing Authority, and at the Licensee's expense.

**Reason:** *To confirm that the deposits made were in accordance with the application documentation, and that any accidental deposits are recovered or charted appropriately in accordance with s.29(3)(c) of the 2010 Act and s71(3)(c) of the Marine and Coastal Access Act 2009.*

#### 3.2.3.2 Nature and quantity of deposited substances and objects

The Licensee must, in addition to the transportation audit sheets which are required to be submitted to the Licensing Authority under condition 3.2.3.1 following the Commencement of the Works, submit audit reports, in writing, to the Licensing Authority, stating the nature and quantity of all substances and objects deposited below MHWS under the authority of this licence. Such

audit reports must be submitted by the Licensee at monthly intervals, with the first such report being required to be submitted on a date no later than 1 calendar month following the Commencement of the Works. Where appropriate, nil returns must be provided.

**Reason:** *To confirm that the deposits made were in accordance with the application documentation, in accordance with s.29(3)(c) of the 2010 Act and s71(3)(c) of the Marine and Coastal Access Act 2009.*

### 3.2.3.3 Navigational safety

The Licensee must notify the UKHO of the progress of the Works to facilitate the promulgation of maritime safety information and updating of Admiralty charts BA741 and BA743 and publications through the national Notice to Mariners system.

The Licensee must notify local mariners, fishermen's organisations and HM Coastguard, in this case Aberdeen Coastguard Operations Centre, of the progress of the Works through local Notice to Mariners or any other appropriate means.

The Licensee must ensure that the progress of the Works is promulgated in the Kingfisher Fortnightly Bulletin to inform the Sea Fish Industry of the vessel routes, the timings and the location of the Works and of the relevant operations.

The Licensee must, in the case of damage to, or destruction or decay of, the Works, notify the Licensing Authority, in writing, as soon as reasonably practicable following such damage, destruction or decay. The Licensee must carry out any remedial action as required by the Licensing Authority, and intimated to the Licensee in writing, which may include any requirement to display aids to navigation, following consultation with the MCA, the NLB or any such advisers as required by the Licensing Authority.

The Licensee must ensure that any vessels permitted to engage in the Works are marked in accordance with the International Rules for the Prevention of Collisions at Sea whilst under way and in accordance with the UK Standard Marking Schedule for Offshore Installations if the vessel is secured to the seabed.

The Licensee must ensure that no radio beacon or radar beacon operating in the marine frequency bands is installed or used on the Works without the prior written approval of the Office of Communications ("OfCom").

The Licensee must ensure that navigable depth is not altered by more than 5% referenced to Chart Datum unless otherwise agreed, in writing, with the Licensing Authority in consultation with the MCA and NLB.

**Reason:** *To reduce the navigational risk to other legitimate users of the sea, in accordance with s.29(2)(b) of the 2010 Act and s71(2)(b) of the Marine and Coastal Access Act 2009.*

#### 3.2.3.4 Markings, lighting and signals of the Works and Jack up vessels

The Licensee must ensure that the Works are marked and lit in accordance with the requirements of the MCA, NLB, the Civil Aviation Authority (“CAA”) and the Ministry of Defence (“MoD”) at all times and such markings and/or lighting must be continued unless and until such time as the Licensing Authority, by notice, relevantly varies this licence under section 30(3)(c) of the 2010 Act.

The Licensee must not display any marks and lights additional to those required by virtue of this licence and as agreed in the LMP without the written approval of the Licensing Authority following consultation with the NLB, the CAA, the MoD and the MCA.

The Licensee must ensure that the Works are marked and lit in accordance with IALA Recommendation O-139.

The turbines must be lit with a single 2000 candela, red aviation light, flashing Morse ‘W’ in unison with all other turbines and in accordance with the Civil Aviation Authority Air Navigation Order Part 28 Lights and Lighting (220).

Turbines 4 & 5, as specified in the Application, must be fitted with synchronised sound signals with a nominal range of two nautical miles, placed not less than 6 metres and not more than 30 metres above sea level. The character must be rhythmic blasts corresponding to morse letter ‘U’ every 30 seconds. The minimum duration of the short blast must be 0.75 seconds and the sound signal must be operated when the meteorological visibility is two nautical miles or less. The sound signal must comply with IALA recommendations and have an availability of not less than 97.0% (IALA Category 3), calculated over a rolling 3 year period.

Each turbine must display identification panels with black letters or numbers 1 metre high on a yellow background visible in all directions. These panels shall be easily visible in daylight as well as at night, either by the use of illumination or retro-reflecting material.

**Reason:** *To ensure safe appropriate marking and lighting of the offshore Works, in accordance with s.29(2)(b) of the Marine (Scotland) Act 2010 and s71(2)(b) of the Marine and Coastal Access Act 2009.*

#### 3.2.4 Conditions upon Completion of the Works

##### 3.2.4.1 Date of Completion of the Works

The Licensee must, no later than 1 calendar month following the Completion of the Works, notify the Licensing Authority, in writing, of the date of Completion of the Works.

**Reason:** To inform the Licensing Authority of the completion of the Works, in accordance with s.29(3)(c) of the 2010 Act.

#### 3.2.4.2 Final Commissioning of the Works

The Licensee must, no later than 1 calendar month following the Completion of the Works, notify the Licensing Authority, in writing, of the date of the Completion of the Works.

**Reason:** To inform the Licensing Authority of the Final Commissioning of the Works, in accordance with s.29(3)(c) of the 2010 Act and s71(3)(c) of the Marine and Coastal Access Act 2009.

#### 3.2.4.3 Navigational safety

The Licensee must notify the UKHO of the Completion of the Works to facilitate the promulgation of maritime safety information and updating of Admiralty charts BA741 and BA743 and publications through the national Notice to Mariners system.

The Licensee must, within 1 calendar month of the Completion of the Works, provide the “as-built” positions and maximum heights of all wind turbine generators (“WTGs”), along with any sub-sea infrastructure, to the UKHO for aviation and nautical charting purposes.

The Licensee must ensure that local mariners, fishermen's organisations and HM Coastguard, in this case Aberdeen Coastguard Operations Centre, are made fully aware of the Completion of the Works.

The Licensee must ensure that the Completion of the Works is promulgated in the Kingfisher Fortnightly Bulletin to inform the Sea Fish Industry.

The Licensee must, where any damage, destruction or decay is caused to the Works, notify the Licensing Authority, in writing, of such damage, destruction or decay as soon as reasonably practicable following such damage, destruction or decay. The Licensee must carry out any remedial action which the Licensing Authority advises the Licensee, in writing, as requiring to be taken, which may include a requirement to display aids to navigation, following consultation by the Licensing Authority with the MCA, the NLB or any such advisers as required.

The Licensee must ensure that no radio beacon or radar beacon operating in the Marine frequency bands is installed or used on the Works without the prior written approval of OfCom.

As per the requirements of MCA's MGN 543 and supplementary updates, the Licensee must complete post-installation hydrographic surveys of the consented area or subsections thereof, to the IHO Order 1a survey standard. On completion of these surveys the data and a corresponding report of survey must be supplied to the UKHO, with notification to the MCA Hydrography Manager.

The Licensee must not exhibit, alter or discontinue navigational lighting of the Works without the Statutory Sanction of the Commissioners of Northern Lighthouses. An 'Application for Statutory Sanction to Exhibit/Discontinue' form must be completed by the Licensee as fully as possible and returned to the Northern Lighthouse Board via e-mail to navigation@nlb.org.uk for the necessary sanction to be granted prior to exhibiting, altering or discontinuing navigational lighting.

**Reason:** *To reduce the navigational risk to other legitimate users of the sea, in accordance with s.29(2)(b) of the 2010 Act and s71(2)(b) of the Marine and Coastal Access Act 2009.*

#### 3.2.4.4 Nature and quantity of deposited substances and objects

The Licensee must, no later than 1 calendar month following the Completion of the Works, submit a final audit report, in writing, to the Licensing Authority stating the nature and quantity of all substances and objects deposited below MHWS within the Scottish marine area under the authority of this licence. Where appropriate, nil returns must be provided.

**Reason:** *To confirm that the deposits made were in accordance with the application documentation, in accordance with s.29(3)(c) of the 2010 Act and s71(3)(c) of the Marine and Coastal Access Act 2009.*

#### 3.2.4.5 Markings, lighting and signals of the Works

The Licensee must ensure that the Works are marked and lit in accordance with the agreed LMP and the requirements of the MCA, NLB, CAA and MoD at all times and such marking and/or lighting must be continued unless and until such time as the Licensing Authority, by notice, relevantly varies this licence under section 30 of the 2010 Act.

The Licensee must ensure that the Works are marked and lit in accordance with IALA Recommendation O-139.

**Reason:** *To ensure safe appropriate marking and lighting of the offshore Works, in accordance with s.29(2)(b) of the 2010 Act and s71(2)(b) of the Marine and Coastal Access Act 2009.*

#### 3.2.4.6 Noise Registry Close Out

The Licensee must complete and submit a Close-out Report for all aspects of the Works that produced loud, low to medium frequency (10Hz-10kHz) impulsive noise in the online Marine Noise Registry no later than 12 weeks following the Completion of the Works.

**Reason:** *To ensure compliance with reporting requirements on marine noise, in accordance with s.29(3)(c) of the 2010 Act and s71(3)(c) of the Marine and Coastal Access Act 2009.*

#### 3.2.4.7 Operation and Maintenance of the Works

The Licensee must operate and maintain the Works in accordance with the approved OMP. The Licensing Authority must be notified at least 3 calendar months in advance of any maintenance of the Works where any additional deposits are required. In the event that these works are not assessed in the Application and are considered by the Licensing Authority as being material they will require further Marine Licences.

**Reason:** *To ensure compliance with the approved OMP to prevent decay of the Works and to ensure that any maintenance work is carried out under an appropriate licence in accordance with s.29(3)(b) of the 2010 Act and s71(3)(b) of the Marine and Coastal Access Act 2009.*

#### 3.2.4.8 Decommissioning

This licence does not permit the Decommissioning of the Works, for which a separate marine licence is required.

**Reason:** *To ensure that decommissioning is carried out according to the approved decommissioning programme under an appropriate licence, in accordance with s.29(3)(d) of the 2010 Act and s71(3)(d) of the Marine and Coastal Access Act 2009.*

### 23 Section 36 conditions

23.1 This section contains the conditions in the section 36 consent and for ease of cross reference uses the same numbering format used in the consent.

The consent granted under Section 36 of the Electricity Act 1989 is subject to the following conditions:

The Company must submit the requested plans as detailed in the conditions prior to the Commencement of the Development, in writing, to the Scottish Ministers for their written approval. Such approval may only be granted following consultation by the Scottish Ministers with any such advisors or organisations as detailed in the conditions or as may be required at the discretion of the Scottish Ministers.

The Development must, at all times, be constructed in accordance with the approved plans, as updated or amended.

Any updates or amendments made to the approved plans must be submitted, in writing, to the Scottish Ministers for their prior written approval.

The Company must satisfy themselves that all contractors or sub-contractors are aware of the extent of the Development for which this consent has been granted, the activity which is consented and the terms of the conditions

attached to this consent. All contractors and sub-contractors permitted to engage in the Development must abide by the conditions set out in this consent.

The Company must ensure that all personnel adhere to the Scottish Marine Wildlife Watching Code where appropriate during all installation, operation and maintenance activities.

1. Duration of the Consent

The consent is for a period of 25 years from the date of Final Commissioning of the first Wind Turbine Generator (“WTG”).

Written confirmation of the date of the Commissioning of the first WTG must be provided by the Company to the Scottish Ministers, Aberdeen City Council (“ACC”) and Scottish Natural Heritage (“SNH”) no later than one calendar month after the first commissioning of the first WTG.

Final Commissioning of the Development: Where the Scottish Ministers deem the Development to be complete, on a date prior to the date when all WTGs forming the Development have supplied electricity on a commercial basis to the National Grid, then the Scottish Ministers will provide written confirmation of the date of the Final Commissioning of the Development to the Company, ACC, and SNH no later than one calendar month after that date on which the Scottish Ministers deem the Development to be complete.

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**Reason: To define the duration of the consent.**

2. Commencement of Development

The Commencement of the Development must be no later than five years from the date of this consent, or in substitution such other period as the Scottish Ministers may hereafter direct in writing. Written confirmation of the intended date of Commencement of Development must be provided to Aberdeen City Council and Scottish Ministers no later than one calendar month before that date.

**Reason: To ensure that the Commencement of the Development is undertaken within a reasonable timescale after consent is granted.**

3. Decommissioning

Where the Company has been given notice requiring them to submit to the appropriate authority a Decommissioning Programme (“DP”), pursuant to section 105(2) and (5) of the Energy Act 2004, then construction may not begin on the site of the Development until after the Company has submitted to the appropriate authority a DP in compliance with that notice.

**Reason:** *To ensure the decommissioning and removal of the Development in an appropriate and environmentally acceptable manner, and in the interests of safety and environmental protection.*

4. Non-assignment

This consent may not be assigned without the prior written authorisation of the Scottish Ministers. The Scottish Ministers may authorise the assignment of the consent or refuse assignment as they may see fit. The consent is not capable of being assigned, alienated or transferred otherwise than in accordance with the foregoing procedure. The Company must notify the Aberdeen City Council in writing of the name of the assignee, principal named contact and contact details within 14 days of written confirmation from the Scottish Ministers of an assignment having been granted.

**Reason:** *To safeguard the obligations of the consent if transferred to another company.*

5. Redundant turbines

In the event that for a continuous period of 6 months or more any WTG installed and commissioned and forming part of the Development fails to produce electricity on a commercial basis to the National Grid then, unless otherwise agreed in writing by the Scottish Ministers and after consultation with the Company and any advisors as required at the discretion of the Scottish Ministers, any such WTG may be deemed by the Scottish Ministers to cease to be required. If so deemed, the WTG (together with any related infrastructure) must be decommissioned and the area of the Site upon which the WTG is located must be reinstated by the Company in accordance with the procedures laid out within the Company’s DP, within the period of 12 months from the date of the deeming decision by the Scottish Ministers.

**Reason:** *To ensure that any redundant WTGs are removed from the Site in the interests of safety, amenity and environmental protection.*

6. Serious Incident Reporting



In the event of any breach of health and safety or environmental obligations relating to the Development during the period of this consent, the Company must provide written notification of the nature and timing of the incident to the Scottish Ministers, including confirmation of remedial measures taken and/or to be taken to rectify the breach, within 24 hours of the incident occurring

**Reason: To keep the Scottish Ministers informed of any such incidents which may be in the public interest.**

7. Implementation in accordance with approved plans and requirements of this consent

Except as otherwise required by the terms of this consent, the Development must be undertaken in accordance with the Application, the Environmental Statement (as supplemented or amended by the further environmental information submitted by the Company on 22<sup>nd</sup> September 2016) and any other documentation lodged in support of the Application.

**Reason: To ensure that the Development is carried out in accordance with the approved details.**

8. Transportation for site inspections

As far as reasonably practicable, the Company must, on being given reasonable notice by the Scottish Ministers (of at least 72 hours), provide transportation to and from the Site for any persons authorised by the Scottish Ministers to inspect the Site.

**Reason: To ensure access to the Site for the purpose of inspecting compliance with this Consent.**

9. Construction Programme

The Company must, no later than 6 months or at such a time as agreed with the Scottish Ministers, prior to the Commencement of the Development, submit a Construction Programme (“CoP”), in writing, to the Scottish Ministers for their written approval. Such approval may only be granted following consultation by the Scottish Ministers with the SNH, Scottish Fishermen’s Federation (“SFF”), Vattenfall Wind Power Ltd. (“Vattenfall”), Esk District Salmon Fishery Board (“Esk DSFB”), the Civil Aviation Authority (“CAA”), Ministry of Defence (“MoD”), the Maritime and Coastal Agency (“MCA”), the Northern Lighthouse Board (“NLB”), Scottish Environment Protection Agency (“SEPA”), Aberdeenshire City Council (“ACC”), Aberdeenshire Council (“AC”) and any such other advisors or organisations as may be required at the discretion of the Scottish Ministers.

The CoP shall set out, but not be limited to:

- a. the proposed date for Commencement of Development;
- b. the proposed timings for mobilisation of plant and delivery of materials, including details of onshore lay-down areas;
- c. the proposed timings and sequencing of construction work for all elements of the Development infrastructure;
- d. contingency planning for poor weather or other unforeseen delays; and
- e. the scheduled date for Final Commissioning of the Development.

The Company must, prior to the Commencement of the Development, provide a copy of the final CoP, and any subsequent revisions as agreed by the Scottish Ministers, to the Defence Geographic Centre (“DGC”).

**Reason: To confirm the timing and programming of construction.**

#### 10. Construction Method Statement

The Company must, no later than 6 months prior to the Commencement of the Development submit a Construction Method Statement (“CMS”), in writing, to the Scottish Ministers for their written approval. Such approval may only be granted following consultation by the Scottish Ministers with SNH, SEPA, MoD, MCA, NLB, SFF, Whale and Dolphin Conservation (“WDC”) and any such other advisors or organisations as may be required at the discretion of the Scottish Ministers.

The CMS must include, but not be limited to:

- a. the construction procedures and good working practices for installing the Development;
- b. details of the roles and responsibilities, chain of command and contact details of company personnel, any contractors or sub-contractors involved during the construction of the Development;
- c. details of how the construction related mitigation steps proposed in the ES and in the ES Addendum are to be delivered;

- d. a waste management plan for the construction phase of the Development; and
- e. demonstration of seasonal avoidance to minimize impacts on key sensitive bird interests (the main wintering (non-breeding period) during which construction should be avoided is between September and March)

The CMS must adhere to the construction methods assessed in the Application, ES and ES Addendum. The CMS also must, so far as is reasonably practicable, be consistent with the Design Statement (“DS”), the Environmental Management Plan (“EMP”), the Vessel Management Plan (“VMP”), the Navigational Safety Plan (“NSP”), the Cable Plan (“CaP”) and the Lighting and Marking Plan (“LMP”).

**Reason:** *To ensure the appropriate construction management of the Development, taking into account mitigation measures to protect the environment and other users of the marine area.*

#### 11. Development Specification and Layout Plan

The Company must, no later than 6 months prior to the Commencement of the Development, submit a Design Specification and Layout Plan (“DSLPL”), in writing, to the Scottish Ministers for their written approval. Such approval may only be granted following consultation by the Scottish Ministers with SNH, MoD, SFF, Joint Radio Company (“JRC”) CAA, ACC, AC, MCA, NLB, NATS En-Route PLC (“NATS”), and any such other advisors or organisations as may be required at the discretion of the Scottish Ministers.

The DSLPL must include, but not be limited to:

- a. a plan showing the location of each individual WTG (subject to any required micro-siting), including information on WTG spacing, WTG identification/numbering, seabed conditions, bathymetry, confirmed foundation type for each WTG and any key constraints recorded on the Site;
- b. a list of latitude and longitude co-ordinates accurate to three decimal places of minutes of arc for each WTG. This should also be provided as a Geographic Information System (“GIS”) shapefile using the World Geodetic System 1984 (“WGS84”) format;
- c. a table or diagram of each WTG dimensions including – height to blade tip (measured above Lowest Astronomical Tide (“LAT”)) to the highest point, height to hub (measured above LAT to the centreline of the generator shaft), rotor diameter and maximum rotation speed;
- d. the generating capacity of each WTG used on the Site (Annex 1, Figure 1) and a confirmed generating capacity for the Site overall;
- e. the finishes for each WTG (see condition 18 on WTG lighting and marking); and
- f. the length and proposed arrangements on the seabed of all inter-array cables.

**Reason:** *To confirm the final Development specification and layout.*

## 12. Design Statement

The Company must, no later than 6 months prior to the Commencement of the Development, submit a Design Statement ("DS"), in writing, to the Scottish Ministers. The DS, which must be signed off by at least one qualified landscape architect as instructed by the Company prior to submission to the Scottish Ministers, must include representative wind farm visualisations from key viewpoints as agreed with the Scottish Ministers, based upon the final DSLP as approved by the Scottish Ministers as updated or amended. The Company must provide the DS, for information only, to SNH, AC, ACC, , Historic Environment Scotland ("HES") and any such other advisors or organisations as may be required at the discretion of the Scottish Ministers.

**Reason: To ensure that the Development is carried out in accordance with the approved details, and to inform interested parties of the final wind farm scheme proposed to be built.**

## 13. Environmental Management Plan

The Company must, no later than 6 months prior to the Commencement of the Development, submit an Environmental Management Plan ("EMP"), in writing, to the Scottish Ministers for their written approval. Such approval may only be granted following consultation by the Scottish Ministers with SNH, SEPA and any such other advisors or organisations as may be required at the discretion of the Scottish Ministers.

The EMP must provide the over-arching framework for on-site environmental management during the phases of development as follows:

- i) all construction as required to be undertaken before the Final Commissioning of the Development; and
- ii) the operational lifespan of the Development from the Final Commissioning of the Development until the cessation of electricity generation. (Environmental management during decommissioning is addressed by the Decommissioning Programme provided by condition 3).

The EMP must be in accordance with the ES and ES Addendum insofar as it relates to environmental management measures. The EMP must set out the roles, responsibilities and chain of command for the Company personnel, any contractors or sub-contractors in respect of environmental management for the protection of environmental interests during the construction and operation of the Development. It must address, but not be limited to, the following over-arching requirements for environmental management during construction:

- a. mitigation measures to prevent significant adverse impacts to environmental interests, as identified in the ES and ES Addendum, pre-

- consent and pre-construction monitoring or data collection, and include the relevant parts of the CMS;
- b. a pollution prevention and control method statement, including contingency plans;
  - c. management measures to prevent the introduction of invasive non-native marine species;
  - d. a site waste management plan (dealing with all aspects of waste produced during the construction period), including details of contingency planning in the event of accidental release of materials which could cause harm to the environment. Wherever possible the waste hierarchy of reduce, reuse and recycle should be encouraged;
  - e. the reporting mechanisms that will be used to provide the Scottish Ministers and relevant stakeholders (including, but not limited to, SNH, SEPA, MCA and NLB) with regular updates on construction activity, including any environmental issues that have been encountered and how these have been addressed.

The Company must, no later than 3 months prior to the Final Commissioning of the Development, submit an updated EMP to cover the operation and maintenance activities for the Development, in writing, to the Scottish Ministers for their written approval. Such approval may be given only following consultation with SNH, SEPA and any such other advisors or organisations as may be required at the discretion of the Scottish Ministers. The EMP must be regularly reviewed by the Company and the Scottish Ministers, at intervals agreed by the Scottish Ministers. Reviews must include, but not be limited to, the reviews of updated information on construction methods and operations of the Development and updated working practices.

The EMP must be informed, so far as is reasonably practicable, by the baseline monitoring or data collection undertaken as part of the Application and the PEMP.

**Reason: To ensure that all construction and operation activities are carried out in a manner that minimises their impact on the environment, and that mitigation measures contained in the ES, or as otherwise agreed, are fully implemented.**

#### 14. Vessel Management Plan

The Company must, no later than 6 months prior to the Commencement of the Development, submit a Vessel Management Plan (“VMP”), in writing, to the Scottish Ministers for their written approval. Such approval may only be granted following consultation by the Scottish Ministers with SNH, MCA, Transport Scotland (“TS”), ACC and any such other advisors or organisations as may be required at the discretion of the Scottish Ministers.

The VMP must include, but not be limited to, the following details:

- a. the number, types and specification of vessels required;

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- b. how vessel management will be coordinated, particularly during construction but also during operation; and
- c. location of working port(s), how often vessels will be required to transit between port(s) and the Site and indicative vessel transit corridors proposed to be used during construction and operation of the Development
- d. the means by which vehicle movements will be avoided or minimised during the last two weeks of July and first two weeks of August.

The confirmed individual vessel details must be notified to the Scottish Ministers in writing no later than 14 days prior to the Commencement of the Development and, thereafter, any changes to the details supplied must be notified to the Scottish Ministers, as soon as practicable, prior to any such change being implemented in the construction or operation of the Development.

The VMP must, so far as is reasonably practicable, be consistent with the CMS, the EMP, the PEMP, the NSP, and the LMP.

**Reason: To mitigate disturbance or impact to marine mammals and birds.**

### 15. Operation and Maintenance Programme

The Company must, no later than 6 months or at such a time as agreed with the Scottish Ministers, prior to the Commissioning of the first WTG, submit an Operation and Maintenance Programme (“OMP”), in writing, to the Scottish Ministers for their written approval. Such approval may only be granted following consultation by the Scottish Ministers with SNH, ACC, SEPA, MCA, NLB, and any such other advisors or organisations as may be required at the discretion of the Scottish Ministers.

The OMP must set out the procedures and good working practices for operations and the maintenance of the WTG’s, substructures, and inter-array cable network of the Development. Environmental sensitivities which may affect the timing of the operation and maintenance activities must be considered in the OMP.

The OMP must, so far as is reasonably practicable, be consistent with the EMP, the PEMP, the VMP, the NSP, the CaP and the LMP.

**Reason: To safeguard environmental interests during operation and maintenance of the offshore generating station.**

### 16. Navigational Safety Plan

The Company must, no later than 6 months or at such a time as agreed with the Scottish Ministers, prior to the Commencement of the Development, submit a Navigational Safety Plan (“NSP”), in writing, to the Scottish Ministers for their written approval. Such approval may only be granted following consultation by the Scottish Ministers with MCA, NLB, SFF and any

other navigational advisors or organisations as may be required at the discretion of the Scottish Ministers.

The NSP must include, but not be limited to, the following issues:

- a. navigational safety measures;
- b. construction exclusion zones;
- c. notice(s) to Mariners and Radio Navigation Warnings;
- d. anchoring areas;
- e. temporary construction lighting and marking;
- f. emergency response and coordination arrangements (ERCoP) for the construction, operation and decommissioning phases of the Development and to be in accordance with condition 3.2.1.4. of the marine licence; and
- g. buoyage.

The Company must confirm within the NSP that they have taken into account and adequately addressed all of the recommendations of the MCA in the current Marine Guidance Note 543 (“MGN 543”), and its annexes that may be appropriate to the Development, or any other relevant document which may supersede said guidance prior to approval of the NSP.

**Reason: To mitigate the navigational risk to other legitimate users of the sea.**

#### 17. Cable Plan

The Company must, no later than 6 months or at such a time as agreed with the Scottish Ministers, prior to the Commencement of the Development, submit a Cable Plan (“CaP”), in writing, to the Scottish Ministers for their written approval. Such approval may only be granted following consultation by the Scottish Ministers with SNH, SEPA, MCA, SFF, Esk DSFB, and any such other advisors or organisations as may be required at the discretion of the Scottish Ministers. The CaP must be in accordance with the ES and ES Addendum.

The CaP must include, but not be limited to, the following:

- a. the location and cable laying techniques for the inter-array cables;
- b. the results of monitoring or data collection work (including geophysical, geotechnical and benthic surveys) which will help inform cable routing;
- c. technical specification of inter array cables, including a desk based assessment of attenuation of electro-magnetic field strengths and shielding;
- d. a burial risk assessment to ascertain burial depths and, where necessary, alternative protection measures;
- e. methodologies for surveys (e.g. over trawl) of the inter array cables through the operational life of the wind farm where mechanical protection of cables laid on the sea bed is deployed;
- f. methodologies for inter array cable inspection with measures to address and report to the Scottish Ministers any exposure of inter array cables; and
- g. demonstration of avoidance of sensitive periods for relevant bird species during the cable laying works within the intertidal zone.

Any consented cable protection works must ensure existing and future safe navigation is not compromised. Scottish Ministers will accept a maximum of 5% reduction in surrounding depth referenced to Chart Datum.

**Reason:** *To ensure all environmental and navigational issues are considered for the location and construction of the inter array cables.*

#### 18. Lighting and Marking Plan

The Company must, no later than 6 months prior to the Commencement of the Development, submit a Lighting and Marking Plan (“LMP”), in writing, to the Scottish Ministers for their written approval. Such approval may only be granted following consultation by the Scottish Ministers with the MCA, NLB, MoD, CAA and any such other advisors or organisations as may be required at the discretion of the Scottish Ministers. The LMP must provide that the Development be lit and marked in accordance with the current CAA and MoD aviation lighting policy and guidance that is in place as at the date of the Scottish Ministers approval of the LMP, or any such other documents that may supersede said guidance prior to the approval of the LMP. The LMP must also detail the navigational lighting requirements detailed in IALA Recommendation O-139 or any other documents that may supersede said guidance prior to approval of the LMP.

The Company must provide the LMP, for information, to ACC, SNH, DGC and any other bodies as may be required at the discretion of the Scottish Ministers.

**Reason:** *To ensure navigational safety and the safe marking and lighting of the offshore generating station.*

#### 19. Primary Radar Mitigation Scheme



The Company must ensure that no turbine shall be erected until a Primary Radar Mitigation Scheme (“PRMS”) agreed with the Operator has been submitted to and approved in writing by the Scottish Ministers. Such approval may only be granted following consultation with the NATS and Aberdeen International Airport Limited.

This must set out, but not be limited to, measures to be taken to prevent the impairment of the performance of aerodrome navigation aids and the efficiency of air traffic control services at Aberdeen International Airport.

No blades shall be fitted to any turbine unless and until the approved Primary Radar Mitigation Scheme has been implemented. No WTG forming part of the development shall be erected other than in accordance with the approved PRMS. All Works shall thereafter be constructed, commissioned and operated at all times fully in accordance with such approved PRMS.

**Reason:** *To mitigate the impact of the Development on the Primary Radar of the Operator located at Perwinnes and associated air traffic management operations and in the interest of aviation safety.*

#### 20. Air Defence Radar Mitigation Scheme

The Company must ensure that no part of any turbine shall be erected above sea level until an Air Defence Radar Mitigation Scheme (“the ADRM Scheme”) has been submitted to and approved in writing by the Scottish Ministers. Such approval may only be granted following consultation by the Scottish Ministers with the MOD.

No turbines shall become operational until:

- a) the mitigation measures which the approved ADRM Scheme required to be implemented prior to the operation of the turbines have been implemented; and
- b) any performance criteria specified in the approved ADRM Scheme and which the approved ADRM Scheme requires to have been satisfied prior to the operation of the turbines have been satisfied.

The Company shall thereafter comply with all other obligations contained within the approved ADRM Scheme for the duration of the operation of the Development.

For the purposes of this condition, the ADRM Scheme means a detailed scheme to mitigate the adverse impacts of the Development on the air defence radar at RAF Buchan and the air surveillance and control operations of the MOD. The scheme will set out the appropriate measures to be implemented to that end.

**Reason:** *To mitigate the adverse impact of the Development on air defence radar at Remote Radar Head (RRH) Buchan.*

21. Charting requirements

The Company must, prior to the Commencement of the Development and following confirmation of the approved DSLP by the Scottish Ministers (refer to condition 11), provide the positions and maximum heights of the WTGs and construction equipment above 91.4 m measured above LAT to the United Kingdom Hydrographic Office (“UKHO”) for aviation and nautical charting purposes. The Company must, within 1 month of the Final Commissioning of the Development, provide the coordinates accurate to three decimal places of minutes of arc for each WTG position and maximum heights of the WTGs to the UKHO for aviation and nautical charting purposes.

**Reason:** *For aviation and navigational safety.*

22. Project Environmental Monitoring Programme

The Company must, no later than 6 months, or at such a time as agreed with the Scottish Ministers, prior to the Commencement of the Development, submit a Project Environmental Monitoring Programme (“PEMP”), in writing, to the Scottish Ministers for their written approval. Such approval may only be granted following consultation by the Scottish Ministers with SNH, Royal Society for the Protection of Birds Scotland (“RSPB Scotland”), WDC, Esk DSFB, the Scottish Wildlife Trust (“SWT”) and any other ecological advisors or organisations as required at the discretion of the Scottish Ministers. The PEMP must be in accordance with the Application, the Environmental Statement (ES) and the Environmental Statement Addendum as it relates to environmental monitoring.

The PEMP must set out measures by which the Company must monitor the environmental impacts of the Development. Monitoring is required throughout the lifespan of the Development where this is deemed necessary by the Scottish Ministers. Lifespan in this context includes pre-construction, construction, operational and decommissioning phases.

The Scottish Ministers must approve all initial methodologies for the above monitoring, in writing, where appropriate, in consultation with the RAG referred to in condition 23 of this consent.

Monitoring must be done in such a way so as to ensure that the data which is collected allows useful and valid comparisons between different phases of the Development. Monitoring may also serve the purpose of verifying key predictions in the Application, the ES and the ES Addendum. In the event that further potential adverse environmental effects are identified, for which no predictions were made in the Application, the ES or the ES Addendum, the Scottish Ministers may require the Company to undertake additional monitoring.

The PEMP must cover, but not be limited to, the following matters:

- h. pre-construction, construction (if considered appropriate by the Scottish Ministers) and post-construction monitoring or data collection as relevant in terms of the ES and ES Addendum and any subsequent monitoring or data collection for:
  - i) birds. This should include, but not be limited to, a detailed entanglement monitoring and reporting schedule, as well as a post-consent monitoring plan for bird strike;
  - ii) marine mammals. This should include, but not be limited to, a detailed entanglement monitoring and reporting schedule, particularly of load on the moorings from derelict fishing gear; and
  - iii) diadromous fish;
- i. the methodology to record and report noise levels from construction and sound profiles from operational floating turbines to be carried out in relation to marine mammals; and

- j. the participation and contribution to be made by the Company to data collection or monitoring of wider strategic relevance, identified and agreed by the Scottish Ministers, and may include but not necessarily be limited to:
  - i) the avoidance behaviour of breeding seabirds around turbines;
  - ii) flight height distributions of seabirds at wind farm sites; and
  - iii) effects on survival and productivity at relevant breeding colonies.

Any pre-consent monitoring or data collection carried out by the Company to address any of the above issues may be used, in part, to discharge this condition subject to the written approval by the Scottish Ministers.

The PEMP is a live document and must be regularly reviewed by the Scottish Ministers, at timescales to be determined by them to identify the appropriateness of on-going monitoring. Following such reviews, the Scottish Ministers may, in consultation with the RAG, or any other ecological advisors or organisations as required at the discretion of the Scottish Ministers, require the Company to amend the PEMP and submit such an amended PEMP, in writing, to the Scottish Ministers, for their written approval. Such approval may only be granted following consultation by the Scottish Ministers with the RAG, SNH, MSS, RSPB Scotland, Esk DSFB, WDC, Scottish Wildlife Trust (“SWT”) and any other ecological advisors or organisations as may be required at the discretion of the Scottish Ministers.

The Company must submit written reports and associated raw data of such monitoring or data collection to the Scottish Ministers at timescales to be determined by them. Subject to any legal restrictions regarding the treatment of the information, the results will be made publicly available by the Scottish Ministers, or by such other party appointed at their discretion.

**Reason: To ensure that appropriate and effective monitoring of the impacts of the Development is undertaken.**

#### 23. Regional Advisory Group

The Company must participate in any Regional Advisory Group, or any successor group, established by the Scottish Ministers for the purpose of advising the Scottish Ministers on research, monitoring and mitigation programmes for, but not limited to, ornithology, marine mammals, and diadromous fish. The extent and nature of the Company’s participation is to be agreed by the Scottish Ministers.

**Reason: To ensure effective environmental monitoring and mitigation is undertaken at a regional scale.**

#### 24. Fisheries Management and Mitigation Strategy

The Company must, no later than 6 months or at such a time as agreed with the Scottish Ministers, prior to the Commencement of the Development, submit a Fisheries Management and Mitigation Strategy (“FMMS”), in writing, to the Scottish Ministers for their written approval.. The Company must also join and participate in the Forth and Tay Offshore Wind Developers Group – Commercial Fisheries Working Group (“FTOWDG-CFWG”), or any successor group formed to facilitate commercial fisheries dialogue, to define and finalise the FMMS.

In order to inform the production of the FMMS, the Company must monitor or collect data as relevant and agreed with Scottish Ministers in terms of the ES and ES Addendum and any subsequent monitoring or data collection for:

- iv) the impacts on the adjacent coastline;
- v) the effects on local fishermen; and
- vi) the effects on other users of the sea.

As part of any finalised FMMS, the Company must produce and implement a mitigation strategy for each commercial fishery that can prove to the Scottish Ministers that they would be adversely affected by the Development. The Company must implement all mitigation measures committed to be carried out by the Company within the FMMS. Any contractors, or sub-contractors working for the Company, must co-operate with the fishing industry to ensure the effective implementation of the FMMS.

**Reason: To mitigate the impact on commercial fishermen.**

## 25. Environmental Clerk of Works

Prior to the Commencement of the Development, the Company must at its own expense, and with the approval of the Scottish Ministers in consultation with SNH, appoint an independent Environmental Clerk of Works (“ECoW”). The ECoW must be appointed in time to review and approve the draft version of the first plan or programme submitted under this consent to the Scottish Ministers, and remain in post until agreed by the Scottish Ministers. The terms of appointment must be approved by Scottish Ministers, in consultation with SNH.

The terms of the appointment must include, but not be limited to:

- a. quality assurance of final draft versions of all plans and programmes required under this consent;
- b. responsible for the monitoring and compliance of the consent conditions and the environmental mitigation measures; provision of on-going advice and guidance to the Company in relation to achieving compliance with consent conditions, including but not limited to the conditions relating to the CMS, the EMP, the PEMP, the PS, the CaP and the VMP;

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- c. provision of reports on point b) above to the Scottish Ministers at timescales to be determined by them;
- d. inducting and toolbox talks to onsite construction teams on environmental policy and procedures and keeping a record of these;
- e. monitoring that the Development is being constructed according to the plans and this consent, the Application and ES Addendum and complies with the regulations and legislation; and
- f. reviewing and reporting incidents/near misses and reporting any changes in procedures as a result
- g. agreement of a communication strategy with the Scottish Ministers.

**Reason:** *To ensure effective monitoring of, and compliance with, the environmental mitigation and management measures associated with the Development.*

### 26. Fisheries Liaison Officer

Prior to the Commencement of the Development, a Fisheries Liaison Officer (“FLO”) must be appointed by the Company and approved in writing by the Scottish Ministers following consultation with SFF, the FTOWDG-CFWG or any other advisors or organisations as may be required at the discretion of Scottish Ministers. The FLO must be appointed by the Company for the period from Commencement of the Development until the Final Commissioning of the Development. The identity and credentials of the FLO must be included in the EMP (referred to in condition 13). The FLO must establish and maintain effective communications between the Company, any contractors or sub-contractors, fishermen and other users of the sea during the construction of the Development, and ensure compliance with best practice guidelines whilst doing so.

The responsibilities of the FLO must include, but not be limited to:

- a. establishing and maintaining effective communications between the Company, any contractors or sub-contractors, fishermen and other users of the sea concerning the overall project and any amendments to the CMS and site environmental procedures;
- b. the provision of information relating to the safe operation of fishing activity at the site of the Development; and
- c. ensuring that information is made available and circulated in a timely manner to minimise interference with fishing operations and other users of the sea.

**Reason:** *To mitigate the impact on commercial fishermen.*

### 27. Marine Archaeology Reporting Protocol

The Company must, no later than 6 months or at such a time as agreed with the Scottish Ministers, prior to the Commencement of the Development, submit a Marine Archaeology Reporting Protocol (“MARP”) which sets out what the Company must do on discovering any marine archaeology during

the construction, operation, maintenance and monitoring of the Development, in writing, to the Scottish Ministers for their written approval. Such approval may be given only following consultation by the Scottish Ministers with Historic Environment Scotland (“HES”) and any such advisors as may be required at the discretion of the Scottish Ministers. The MARP must be implemented in full, at all times, by the Company.

**Reason:** *To ensure any discovery of archaeological interest is properly and correctly reported.*

28. SpORRAn (Scottish Offshore Renewables Research Framework)

The Company must, to the satisfaction of the Scottish Ministers, participate in the monitoring requirements as laid out in the ‘SpORRAn’ (Scottish Offshore Renewables Research Framework) for Diadromous Fish’. The extent and nature of the Company’s participation is to be agreed by the Scottish Ministers.

**Reason:** *To ensure effective monitoring of the effects on migratory fish at a local level.*

29. Marine Mammal Observer

Prior to the Commencement of the development, the Company must confirm the appointment of a Marine Mammal Observer (“MMO”). When appointed, the MMO must, as a minimum, maintain a record of any sightings of marine mammals and maintain a record of the action taken to avoid any disturbance being caused to marine mammals during pre-construction and geophysical surveys and construction activities.

**Reason:** *To ensure effective monitoring of and compliance with environmental mitigation measures associated with the Development.*

30. Scottish Strategic Marine Environment Group

The Company must participate in any Scottish Strategic Marine Environment Group (“SSMEG”) established by the Scottish Ministers for the purposes of advising the Scottish Ministers on research, monitoring and mitigation programmes for, but not limited to, ornithology, diadromous fish, marine mammals and commercial fish.

**Reason:** *To ensure effective environmental monitoring and mitigation is undertaken at a National scale.*

**24 Regulatory evaluation**

*Conclusions*

- 24.1 In considering the Application, in particular the ES, further information addendum and accompanying documents, and the relevant provisions of the

Marine (Scotland) Act 2010, a full and detailed assessment has been made of the potential direct and indirect effects of the Development on human beings, fauna and flora, soils, water, air climate, the landscape, material assets, the cultural heritage and the interaction between any two or more of these factors.

- 24.2 Marine Scotland, as the Appropriate Authority, consider that, having taken account of the information provided by the Company, the responses of the consultative bodies and members of the public, there are no outstanding concerns with regards to the effects on the environment which would require a Marine Licence to be withheld subject to the inclusion of the conditions referred to above in the Marine Licence and section 36 consent that may be granted in due course.

*Recommendations*

- 24.3 Having carried out assessments of the potential environmental impacts of the proposed Development, the reviewer acting on behalf of Marine Scotland, makes the recommendations below:

Marine Scotland are satisfied that the ES and further information addendum adequately addresses all environmental issues in relation to the Kincardine Offshore Windfarm subject to the conditions referred to above being included in the relevant Marine Licence and section 36 consent, if subsequently issued.

The reviewer acting on behalf of Marine Scotland recommends that a favourable EIA consent decision is given in respect of the Kincardine Offshore Windfarm, subject to the inclusion of the above conditions being attached to any relevant Marine Licence and section 36 consent.

***Environmental Impact Consent Decision***

- 24.4 **Having considered the analysis and recommendations of the environmental impact assessment process above, an environmental impact assessment consent decision is given in favour of the Kincardine Offshore Windfarm in accordance with Regulation 22 of the MWR.**