Kincardine Floating Offshore Windfarm

ES Additional Information Addendum

KOWL

23 September 2016

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Document history

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Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 1.0	ES and HRA addendum	WM, AHP, RJW	AC	SV	RJW	30/08/16
Rev 2.0	ES and HRA addendum with response sections removed	AHP, RJW	AC	SV	RJW	15/09/16
Rev 3.0	Final Edits post MS LOT meeting	AHP	AC	RJW	RJW	22/09/16

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1. Introduction

In April 2016, Kincardine Offshore Wind Farm Limited (KOWL) submitted applications for consent to construct and operate the Kincardine Floating Offshore Wind Farm known as 'the Project'. This document forms an addendum of additional environmental information to the KOWL Environmental Statement (ES) submitted in April 2016 as part of the application.

The aim of the Project is to develop a pilot-scale offshore windfarm utilising floating foundation technology, which will demonstrate the technological and commercial feasibility of floating offshore wind. KOWL is currently negotiating an Agreement for Lease (AfL) under The Crown Estate Floating Foundation Demonstrator round. The proposed site is located south-east of Aberdeen approximately 8nm (15km) from the Scottish coastline and provides suitable water depth for a floating offshore wind demonstrator development (approximately 60-80m). The Project is considered a commercial demonstrator site, which will utilise floating foundation technology, rather than conventional fixed substructure foundations used in the majority of Scottish offshore windfarm developments. It will be one of the world's first arrays of floating wind turbines utilising the semi-spar foundation technology. It has been included within the Survey, Deploy and Monitoring scheme for offshore renewable systems (similar to wave and tidal devices).

1.1. Applicant and Application Status

The Applicant, KOWL, is a new company formed by Pilot Offshore Renewables Limited (PORL) and Atkins Ltd. PORL is an Aberdeen based joint venture between MacAskill Associates Limited and Renewable Energy Ventures (Offshore) Limited. Both are Scottish companies with extensive experience in the wind industry. KOWL has been established in order to develop, finance, construct, operate, maintain and decommission the Kincardine Offshore Windfarm. KOWL is applying for the consents required for the windfarm and for the associated transmission works.

The consent applications were submitted to Marine Scotland Licensing Operations Team (MS-LOT), acting on behalf of the Scottish Ministers for consent under the following legislation:

- Consent under Section 36 and 36A of the Electricity Act 1989; and
- Marine Licences under the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act 2009.

The Applications included an ES (referred to as the Original ES in this addendum) to report the findings of the Environmental Impact Assessment (EIA) which was carried out to assess the likely significant impacts of the Project on the surrounding environment. Details regarding the onshore transmissions works associated with the Project will be submitted to the relevant authorities in a separate onshore planning application.

Since the submission of the application in April 2016, consultation responses have been received from statutory and non-statutory consultees. From this consultation there were requests for additional elements to be considered in the EIA. As such, the Applicant, Kincardine Offshore Wind Farm Ltd (KOWL), is submitting this Additional Information Addendum to the Original ES (ES Addendum) to ensure this further information is incorporated in the EIA for the Project and is available to the public for consultation.

Additionally, due to the innovative nature of the Project there has been a refinement of the sub-structure design to be used. Further details are provided below, and it should be noted that the refined sub-structure design does not affect the EIA carried out to date as all components of the wind farm (turbine height, substructure dimensions) are within the Rochdale Envelope as outlined in the Original ES. Further details of the sub-structure design can be found in Section 1.3 below.

1.2. Purpose, Scope and Structure of this ES Addendum

1.2.1. Purpose

This ES Addendum has been prepared to incorporate the responses received from consultees on the Original ES, including requests for clarification, additions and further information.

1.2.2. Scope

To address the responses provided by the consultees this ES includes clarifications, additions and revisions to the following Sections of the original ES:

- Fish and Shellfish: Section 2 presents an addendum to the Original ES Chapter 5
- Ornithology: Section 3 Ornithology presents an addendum to the Original ES Chapter 7.
- Landscape and Seascape Visual Impact Assessment: Section 4 presents an addendum to the Original ES Chapter 11.
- Socio-Economics: Section 5 presents an addendum to the Original ES Chapter 13.

1.2.3. Structure of ES Addendum

This ES Addendum is intended to be read in conjunction with the Original ES. To avoid repetition, cross reference is made to the Original ES where applicable. In general the information presented in this ES Addendum is supplementary to the Original ES, however, where information presented is an update or replacement for text included in the Original ES this is clearly stated.

Sections 2-5 follow a similar structure as that of the Original ES and include where applicable an introduction including a summary of the consultation received on the Original ES, additions to baseline data, amendments to assessment methods including embedded mitigation, assessment of likely significant impacts, amendments to proposed mitigation, amendments to the cumulative impact and amendments to summary of residual impact.

1.3. Refinement of Sub-structure

As the Project has progressed and design work has been carried out, KOWL have decided to utilise Cobra's SEMI-SPAR concrete substructure technology in preference to the Windfloat semi-submersible prototype as presented in the Original ES.

The concept is easy to manufacture and assemble in port with no need for heavy lift crane capacity vessels, only conventional tug boats similar to the prototype described in Chapter 2 of the Original ES. The SEMI-SPAR concrete substructure technology is similar in design to the concept described in the original ES with the use of floating technology with anchor points and mooring lines.

Due to the similarity of the technology, there is no change to the overall Rochdale Envelope as presented in the Original ES. Therefore, the details included here are for information only and no changes are required to the EIA methodology or conclusions presented in the Original ES as a result of this refinement in sub-structure; the updates to the Original ES as presented in this ES addendum are solely a result of the consultation responses received.

The technology consists of a central column connected to three outer columns by rectangular pontoon sections, with the outer columns located below the water surface when operational. The WTG is mounted centrally on the central column above the transition cone. The concept embraces the low-cost and constructability benefits of concrete with favourable spar motions during operations and enhanced semi-submersible (columns partially submerged) stability characteristics for alongside WTG installation and transit.

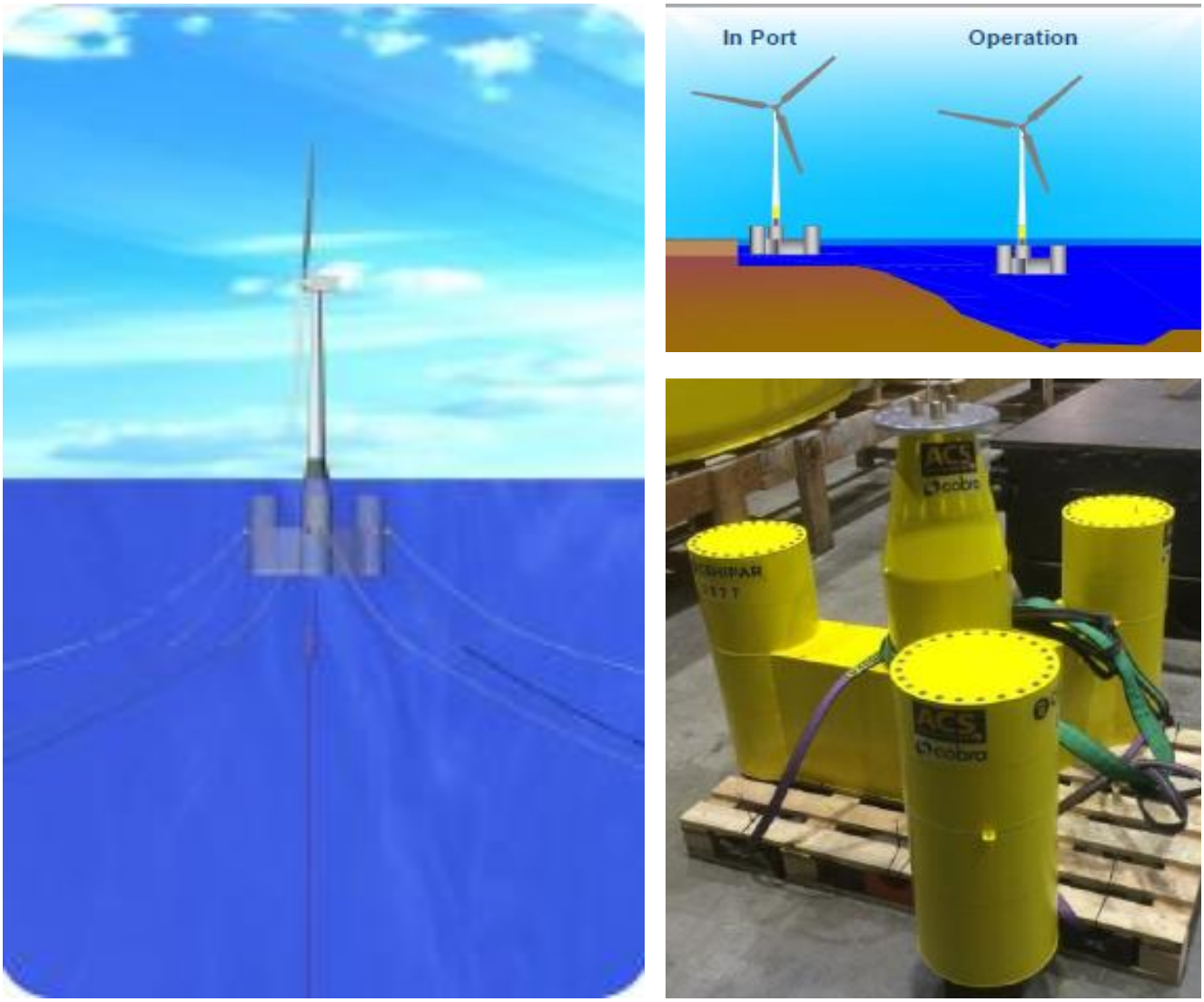

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Figure 1-1 Overview of hybrid sub-structure concept now being utilised for the Kincardine Floating Offshore Wind Farm: SEMI-SPAR (note the image on the left represents a deep water mooring system, rather than the shallow mooring system to be used at the development which would have a maximum of four mooring points).

The table below (Table 1-1) shows the dimensions of the semi-spar (updated following detail design assessment process) and the original design outline semi-submersible substructure as a comparison to show that the change in sub-structure will not exceed any of the Rochdale Envelope worst–case scenarios as identified in the Original ES.

It should be noted that the change in sub-structure does result in an increase of substructure that is below the waterline (draft of 36m) compared to the semi-submersible (14m) (N.B. this is not a parameter that was included in the Original ES Rochdale Envelope table (Table 1-3) as reference below). The outer buoyancy chambers are now below the water surface, with the top of each one being approximately 6 m below the water surface at all states of the tide and this will mean a reduced above surface cross sectional area for the main structure and they will allow the support vessels to approach the structure to unload service engineers onto the structure safely from all directions.

This increase in draft or the location of the outer buoyancy chambers does not pose any additional impacts to marine navigation and would reduce the collision risk for smaller vessels and recreational boats that have drafts shallower than 6 m to the above water element of the structure (above water width reduced from approximately 65m to 20 m.

KOWL will still seek to maintain the 50 m exclusion zone around the structures as previously proposed in the ES.

Table 1-1 Comparison of Rochdale Envelope elements of the semi-submersible substructure (Original ES) and semi-spar substructure (as described above)

Project Component	Parameter	Semi-Submersible Sub-Structure	Semi-Spar Sub-Structure
Substructure	Shape of substructure	Floating turbine (semi-submersible structure) anchored to seabed. Symmetrical in shape, comprising of vertical tubular sections, at each corner; connected by horizontal and vertical diagonal members above and below the water line.	Floating turbine (semi-spar structure) anchored to seabed. Symmetrical in shape comprising of a central column tank and three outer columns tanks (submerged with the tops being 6m below the water surface) connected to the central column tank via pontoon tanks. All pontoon tanks and column tanks are fully submerged when on site, only the upper part of the central column is above the waterline.
	Geometry	Equilateral 3 sided	Equilateral 3 sided
	Elevation above waterline	12m	25m
	Horizontal Face length	70m	35m (from centre of central column tank to outer column tanks). 70m total diameter between and two outer column tanks.
	Diameter of vertical columns	12m	18m (outer column tanks)
	Access Points	2 boat-landings	2 boat-landings
	Electrical Cable Access	3 J-tubes	3 J-tubes
	Mooring Points	4 point mooring	3 point mooring

The refinement in substructure design results in a change to the Permanent (and temporary) Deposits for the Project as defined in the Marine Licence Application (Section 8a). This table has been updated to account for these changes and is shown in Appendix C.

2. Fish and Shellfish

2.1. Introduction and Stakeholder Responses

This section presents an addendum to Chapter 5: Fish and Shellfish of the Original ES (April 2016) and the information in this ES Addendum replaces the information presented within the Original ES.

This section of the ES Addendum presents the information to address the consultation responses. Specifically, this information replaces that which appears in Tables 5-11, 5-15, 5-17 of the Development Area Impact Assessment and 5-22 of the Cumulative Impact Assessment within the Original ES relating to migratory diadromous fish within the Project site due to additional information which is now available.

This ES addendum follows the same structure of that of the Original ES and includes the following elements:

- Introduction and Public Consultation;
- Baseline Environment;
- Assessment methodology;
- Assessment of potential impacts;
- Assessment of cumulative effects;
- Mitigation measures; and
- Summary and Residual Impacts.

2.1.1. Stakeholder Responses

Additional stakeholder responses from Marine Scotland Science were received following the review of the ES and additional information has been provided to respond to these comments.

2.2. Baseline Environment

The study area including fish and shellfish species likely to be present in the Project site and details on spawning and nursery areas were defined in Section 5.2 of the Original ES and remains unchanged.

2.3. Assessment Methodology

The assessment methodology was defined in Section 5.3 of the Original ES and remains unchanged.

2.4. Impact Assessment

Information to address the consultation responses has been included below for the relevant sections of the original impact assessment reported in the Original ES. The information provided replaces that within the Original ES in order to take into consideration new data provided.

2.4.1. Impact Assessment – Development Area

The key risks and potential impacts within the Development Area were identified as follows in the Original ES:

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

The impacts identified through the consultation response requiring a replacement of information relate to:

- Direct temporary habitat disturbance in the Development Area during construction and specifically the sensitivity of receptor for diadromous species in Table 5-11 within the Original ES.
- Creation of new habitat from Project infrastructure in the Development Area and specifically the sensitivity of receptor for diadromous species in Table 5-15 within the Original ES.
- Effects of EMF and thermal emissions associated with subsea cables in the Development Area during operation, specifically in relation to the sensitivity of receptor for diadromous species in Table 5-17 within the Original ES.

Consideration has only been given to diadromous species in these tables relating specifically to the impacts above. No additional consideration has been given to the other fish species in the Original ES or the remaining impacts. No additional consideration has been provided for the Offshore Export Cable Assessment.

2.4.1.1. Direct temporary habitat disturbance in the Development Area during construction

Table 2-1 below presents the change in information to address the stakeholder comments received. This information replaces the row on diadromous fish contained within Table 5-11 of the Original ES.

Table 2-1 Assessment of impacts resulting from temporary habitat disturbance for diadromous fish

Impact	Receptor	Sensitivity of Receptor	Magnitude of Effect	Significance
Direct temporary habitat disturbance	Diadromous fish	Moderate No spawning or nursery areas were identified in the vicinity of the Development Area. Diadromous species may potentially use the Development Area for foraging however none will be reliant on the Development Area for a feeding ground as this is a small proportion of the overall available resources on their migratory route. The limited information on salmon and sea trout suggests that migration occurs predominantly inshore[1]. However studies[2] show that migrations are not strictly linked to the coast with occasional locations noted up to 100km offshore. There is therefore the potential that migrating salmon may traverse the Development Area. Information suggests that	Negligible - based on the temporal and spatial limitation of the Development Area. Habitat disturbance is calculated to be 0.129km^2 as discussed in Chapter 4.	Minor

[1] Malcolm, I. A., Godfrey, J. and Youngson, A. F., (2010). Review of migratory routes and behaviour of Atlantic salmon, sea trout and European eel in Scotland's coastal environment: implications for the development of marine renewables. *Scottish Marine and Freshwater Science,* **1**, 14. Available online: http://www.scotland.gov.uk/Resource/Doc/295194/0111162.pdf

[2] Godfrey, J.D., Stewart, D.C., Middlemas, S.J and Armstrong. (2014a). Depth use and movements of homing Atlantic salmon (*Salmo salar*) in Scottish coastal waters in relation to marine renewable energy development. Vol 5, No. 18. Available Online: http://www.gov.scot/Resource/0046/00466487.pdf

		most of the adult migration time (60-90%) is spent swimming in shallow waters (0-40m) but do pass through the water column regularly[1,3]. It is not currently possible to predict what proportion of the salmon are likely to pass through the Development Area. These species are highly mobile indicating that temporary avoidance behaviours may occur during construction and installation in the Development Area as construction activities are likely to coincide with migration periods (March-June).		

2.4.1.2. Creation of new habitat from Project infrastructure in the Development Area

Table 2-2 below presents the change in information to address the stakeholder comments received. This information replaces the row on diadromous fish contained within Table 5-15 within the Original ES.

Table 2-2 Assessment of impacts resulting from creation of new habitat for diadromous fish

Impact	Receptor	Sensitivity of Receptor	Magnitude of Effect	Significance
Creation of new habitats	Diadromous fish	Low Colonisation of the Project infrastructure and introduction of new species through increased prey diversity and availability from Project infrastructure is likely at even small scales[4]. However, the habitat is not likely to change over a large extent (area of disturbance 0.129km^2). This area is determined to be negligible within the Development Area and within the wider geographical context. In addition, due to the migratory behaviour of diadromous species such as salmon and eel, their interaction with the Development Area is likely to be limited as they traverse the area. Of the little	Negligible due to size and scale of the Project.	Negligible/Minor

[3] Godfrey, J.D, Stewart, D.C., Middlemas, S.J. and Armstrong, J.D. (2014b) Depth use and migratory behaviour of homing Atlantic salmon (*Salmo salar*) in Scottish coastal waters. *ICES Journal of Marine Science, doi: 10.1093/icesjms/fsu118.*

[4] Andersson, M. H., 2011. *Offshore windfarms - ecological effects of noise and habitat alteration on fish.* PhD Thesis, Department of Zoology, Stockholm University. Available Online: http://su.divaportal.org/smash/record.jsf?pid=diva2:391860

		information known it is suggested that the majority of migration occurs predominantly inshore but there is the potential that there may be some individuals which will pass through the Development Area as species have been recorded at distances of 100km from the shore[1,2]. Diadromous species are highly mobile indicating that temporary avoidance behaviours may occur in the area. In addition migration routes of returning salmon still remain unclear and therefore it is not currently possible to predict what proportion of the salmon are likely to pass through the Development Area.		

2.4.1.3. Effects of EMF and thermal emissions associated with subsea cables in the Development Area during operation

Table 2-3 below presents the change in information to address the stakeholder comments received. This information replaces the row on diadromous fish contained within Table 5-17 within the Original ES.

Table 2-3 Assessment of impacts resulting from temporary habitat disturbance for diadromous fish

Impact	Receptor	Sensitivity of Receptor	Magnitude of Effect	Significance
Effects of EMF and Thermal Emissions	Diadromous fish	Moderate The main concern regarding EMF is that it will interfere with the navigation of diadromous fish by affecting the course of their migration causing knock-on effects if they do not reach their feeding, spawning and nursery grounds. Limited information on salmon and sea trout migration suggests predominantly inshore and local use of the marine environment[1.] Information available suggests that most of the adult migration time is spend swimming in shallow waters (0-40m)[1]. The interarray cables will be placed on the seabed and therefore there will a considerable distance between the cables and individuals. Of the little information known, it is suggested that the majority of migration occurs predominantly	Negligible based on the localised nature of the potential impact combined with the very small footprint of interarray cables and embedded mitigation measures.	Minor

		inshore but there is the potential that there may be some individuals which will pass through the Development Area as species have been recorded at distances of 100km from the shore[2,3]. Diadromous species are highly mobile indicating that temporary avoidance behaviours may occur in the area. In addition migration routes of returning salmon still remain unclear and therefore it is not currently possible to predict what proportion of the salmon are likely to pass through the Development Area. Little is known about the migratory behaviour of European eels[5]. There have however been some studies of field observations of the migratory behaviour of eels over sub-sea cables. Westerberg[6] observed very small variations in swimming direction in European eel (*Anguilla anguilla*) when crossing HVDC power cables. However, there was no overall alteration to migratory behaviour within individuals crossing the cable route area with the same probability in presence and in absence of the cable. Westerberg[6] concluded that a cable does not result in a permanent obstacle to migration and overall effects on a population are likely to be negligible. In addition studies by Westerberg and Langenfelt.[7], concluded that the presence of cables would not pose a threat to migration of eels. Any effect from high intensity magnetic fields will be highly localised and potentially resolved by burial of the cable. Investigations by Orpwood *et al.*[5], indicate that high voltage AC cables may be detected by eels but do not constitute a barrier to migration.		

[5] Orpwood, J.E., Fryer, R.J., Rycroft, P. and Armstrong, J.D. (2015). Effects of AC Magnetic Fields (MFs) on Swimming Activity in European Eels *Anguilla anguilla*). Scottish Marine and Freshwater Science. Volume 6, Number 8

[6] Westerberg, H. (2000). Effect of HVDC cables on eel orientation. In Merck, T & von Nordheim, H. (eds). Technishe Eingriffe in marine Lebensraume. Published by Bundesamt fur Naturschutz

[7] Westerberg, H. & Langenfelt, I. (2008). Sub-sea power cables and the migration behaviour of the European eel. *Fisheries Management and Ecology,* **15**, 369-375.

		There is very little information present for EMF impacts on sea lamprey.		

2.4.2. Cumulative Assessment of Development Area and Offshore Export Cable Corridor

Information has also been replaced for the following cumulative impact within the Original ES:

- Cumulative Assessment of Development Area and Offshore Export Cable Corridor for Direct, Temporary Habitat Disturbance specifically in relation to the sensitivity of receptor for diadromous species in Table 5-22 within the Original ES.

No changes or additions have been made to any of the other cumulative impacts detailed in Chapter 5 of the Original ES.

2.4.2.1. Cumulative Assessment of impacts resulting from temporary habitat disturbance for diadromous fish

Table 2-4 below presents the change in information to address the stakeholder comments received. This information replaces the row on diadromous fish contained within Table 5-22 within the Original ES.

Table 2-4 Cumulative Assessment of impacts resulting from temporary habitat disturbance for diadromous fish

Impact	Receptor	Sensitivity of Receptor	Magnitude of Effect	Significance
Cumulative assessment of impacts resulting from temporary habitat disturbance	Diadromous fish	Moderate No spawning or nursery areas were identified in the vicinity of the Development Area or Offshore Export Cable Corridor. Diadromous species may potentially use the Development Area and Offshore Export Cable Corridor for foraging however, none will be reliant on these areas for feeding grounds as this is a small proportion of the overall available resources on their migratory route. These species are highly mobile indicating that temporary avoidance behaviours may occur during construction and installation in the Development Area and the Offshore Export Cable Corridor if construction coincides with migration periods. Disturbance arising from construction activities is not likely to act as a barrier to migrating species due to the small area that may be disturbed at a given time. Although construction activities	Negligible - based on the temporal and spatial limitation of the Development Area. Habitat disturbance is calculated to be 0.129km^2 as discussed in Chapter 4.	Minor

		are likely to occur during the salmon migration period (March-June), the total time of construction is temporary and of short duration. In addition, Chapter 3 determines that there will not be a significant sediment plume as a result of construction and any increases in SSC will be temporary. Information available suggests that most of the adult migration time is spent swimming in shallow waters (0-40m) [1], therefore the area affected will likely only be areas closest to shore.		

2.5. Mitigation

Mitigation was discussed in Section 5.5 of the Original ES and stated that no further mitigation is planned or required, this remains unchanged.

2.6. Summary and Residual Effects

As no further mitigation measures are available, the residual impacts remain the same as identified during the original impact assessment as presented in Section 5.8 of the Original ES as the additional information included in this ES Addendum has not changed the significance of impact for any of the identified impacts.

3. Ornithology

3.1. Introduction and Stakeholder Responses

KOWL received stakeholder responses regarding ornithology from MSS, SNH, RSPB Scotland and the Scottish Wildlife Trust (SWT).

The ornithological addendum presents:

- A summary of consultation following the submission of the ES and HRA;
- A brief note on the refinement of the substructure and how it effects ornithology;
- A section on the HRA in-combination effects and proposed mitigation (see Appendix B – HRA Addendum); and
- An assessment of the likely significant effects of the scheme on proposed SPAs (see Appendix B - HRA addendum).

The majority of the responses received relate to the Habitats Regulations Appraisal and as such, are covered in the HRA addendum presented in Appendix B.

3.2. Baseline Environment

The baseline environment for the Ornithology Chapter (7.2) has been amended to include the proposed/draft special protected areas (pSPA) that were not previously covered by the ES. These have been included following consultation with RSPB and therefore all pSPAs have been assessed and included where appropriate into the assessment process (see Appendix B - HRA addendum). The rest of the baseline environment data has not changed within the assessment approach.

3.2.1. Refinement of the substructure design.

The proposed refinement of the substructure for Kincardine offshore windfarm is outlined in Section 1.3 above.

The design of the wind turbine will be such that tower height will be adjusted to ensure that the effective blade tip and the height of the lowest swept area will remain unchanged at 22m above HAT. As a result, all collision risk modelling outputs will remain unchanged.

This refinement of the sub-structure has the potential to have some minor effects on Ornithology. The design is such that there will less deck space available. The majority of the sub-structure will be submerged, with only the tower protruding above the water. It will however have a platform installed where the turbine meets the sub-structure and this can still be used to mount bird detection systems or allow personnel to physically monitor bird / turbine interactions.

The sub-structure will also take up less space above and below the water. This is likely to reduce the potential impacts with regards to displacement of birds and to reduce the chances of underwater collisions.

The change to the concrete floating sub-structure reduces the above surface area for birds to observe and avoid and therefore the net barrier effect from the substructure has been reduced. However as the overall barrier effect includes the turbine blades the net barrier effect remains the same. Therefore the barrier effect from the Original ES remains unchanged.

Any reduction of impacts as a result of the refinement of the design of the substructure will be minor and are therefore unlikely to result in any change to the magnitude of impacts outlined in Section 7.4 of the Original ES.

3.2.2. Proposed Special Protected Areas (pSPA)

Additional pSPAs have been included within the updated HRA assessment for the development. KOWL noted that from the initial list of 14 draft SPAs, 10 were taken forward to become proposed SPAs and have undergone further public consultation in 2016[8] and these have been included within the additional assessment within the HRA addendum (Appendix B).

- Bluemull and Colgrave Sounds
- Coll and Tiree
- East Mainland Coast, Shetland
- Moray Firth
- North Orkney
- Rum (new feature proposed)
- Scapa Flow
- Sound of Gigha
- West Coast of the Outer Hebrides
- Ythan Estuary, Sands of Fovie and Meikle Loch (site extension)

All identified pSPAs have been reviewed against the Project (Appendix B) and potential impact assessed against the species identified against the species noted at site.

- Red Throated Diver
- Great Northern Diver and Redshank

3.2.3. Local Nature Conservation Sites

Aberdeenshire Council, in their consultation response, raised concerns as to whether KOWL had taken account of the potential impacts of the Project on the ornithological interest features of three Local Nature Conservation Sites (LNCS) along the Aberdeenshire coastline directly adjacent to the Project site.

These are:

- Findon LNCS
- Portlethen to Muchalls Coast LNCS
- Muchalls to Stonehaven Bay LNCS

When undertaking the assessment to birds, KOWL considered potential impacts to species within and outside of the boundaries of SPAs. For SPAs, a large amount of existing data on bird numbers is available through ongoing monitoring at these sites. For sites outside the boundaries of SPAs, the JNCC Seabird Monitoring Programme[9] data is used as it represents the greatest source of information for seabird counts outside of SPAs.

The JNCC data includes seabird population counts from local wildlife sites, including the three sites highlighted in Aberdeenshire Councils response. Figure 3-1 below shows the data from the JNCC SMP monitoring sites that were used in the assessment of potential impacts from KOWL on seabirds outside of SPAs.

KOWL can therefore confirm that the potential impacts to the ornithological interest features of these local sites have been accounted for and are represented in the impact assessments undertaken for the ornithological chapter of the Original ES (Chapter 7) and the Original HRA.

[8] 2016 SPA Consultation Overview, Consultation on proposals for 10 Special Protected Areas in the seas around Scotland, SNH, Marine Scotland and the Scottish Government, http://www.snh.gov.uk/docs/A2017643.pdf

[9] http://jncc.defra.gov.uk/smp/

Figure 3-1 JNCC SMP Monitoring Sites along the Aberdeenshire Coastline.

3.3. Assessment Methodology

The assessment methodology as defined by Chapter 7.3 of the original ES remains unchanged.

3.4. Impact Assessment

Additional and supplementary information to address the consultee responses has been included below (Appendix B - HRA Addendum). These will apply to the relevant sections of the impact assessment of the Original ES.

3.5. Cumulative Impacts

The assessment methodology as defined in Chapter 7.5 of the original ES remains unchanged. Discussions about the approach taken regarding the cumulative impact assessment impacts of the Project have been undertaken with SNH and the RSPB (see Appendix B - HRA addendum) to mitigate these impacts.

3.6. Mitigation

Additional mitigation measures have been included within the HRA addendum (Appendix B) to cover the monitoring system that can be installed on the substructures to monitor the potential impact to birds around the development site and to observe possible bird collisions with the structure.

3.7. Summary and Residual Effects

The summary and residual effects as defined by Chapter 7.5 of the original ES remains unchanged.

4. Landscape, Seascape & Visual Impact Assessment

4.1. Introduction and Stakeholder Responses

This section of the ES Addendum presents the information to address the consultation responses and considers further the cumulative impact of the Project on the seascape, landscape and visual environment.

Specifically, this section of the ES Addendum addresses the responses from consultees to present further information in the assessment, including a request to provide an assessment of the night time impact the Project would have on the key receptors within the Aberdeen City Council area, including an in-combination assessment including the Aberdeen Harbour expansion at Nigg Bay that is currently within the planning process. It also includes an in-combination assessment to include the European Offshore Wind Demonstrator Centre (EOWDC) location within Aberdeen Bay, which was previously excluded from the initial ES due to the distance to the development site (29km).

This section presents:

- Additional details on the down selection of locations for full visualisation from the initial wireline presentations;
- An assessment of the night time visualisations at key receptors;
- An cumulative assessment of the night time visualisations from key receptors (Aberdeen Harbour Expansion, Nigg Bay); and
- A new in-combination assessment from Viewpoint 2 (Balmedie beach) to include EOWDC.

This section presents an addendum to Chapter 11: Landscape, Seascape & Visual Impact Assessment of the Original ES (April 2016) and is supplemental to it, no information in this ES Addendum replaces information within the Original ES.

This ES addendum follows the same structure of that of the Original ES and includes the following elements:

- Introduction and Public Consultation;
- Baseline Environment;
- Assessment methodology;
- Assessment of potential impacts;
- Assessment of cumulative effects;
- Mitigation measures; and
- Summary and Residual Impacts.

4.1.1. Stakeholder Responses

Following the submission of the Original ES in April 2016 KOWL has received a number of consultation responses via Marine Scotland Licensing Operations Team (MS LOT) from a number of statutory and non-statutory consultees. These responses have resulted in the inclusion of the following information into the ES Addendum.

4.2. Baseline Environment

The study area including seascape and landscape character types, viewpoints and receptors was defined in Section 11.2 of the Original ES and remains unchanged.

4.3. Assessment Methodology

The assessment methodology was defined in Section 11.3 of the Original ES and remains unchanged.

4.4. Impact Assessment

Additional and supplementary information to address the consultation responses has been included below for the relevant sections of the original impact assessment reported in the Original ES, and new sections created where necessary.

4.4.1. Wirelines and Photomontages

In response to the comment that a larger number of visualisation should be produced the following additional information is provided to clarify how the locations were chosen and agreed throughout the EIA process. No additional photomontages have been produced for the impact assessment of the Project alone, only one additional photomontage has been produced for the cumulative assessment of the Project and the EOWDC. For further details please see Section 4.5.1 below.

Initial selection of viewpoints for the Project was undertaken as per the SNH guidelines for visualisation (SNH 2014). This process involved discussions with all key stakeholders (MS LOT, SNH, Aberdeenshire and Aberdeen City councils) where the initial viewpoint selections were identified (see Chapter 11 of the Original ES for all viewpoint locations). From this initial list of viewpoints wireline figures were produced for all locations to allow an initial high level screening to identify from which sites photomontages would be created for. Due to scale of the Project, it was agreed that it was not necessary to create full visualisations for all 23 viewpoints.

Initial screening of the locations identified that a selected number of viewpoints (six) should be taken forward to photomontages and these viewpoints were selected following consultation with the determining authority (MS LOT). These viewpoints were selected on the following criteria:

- The key viewpoints selected by the local stakeholders;
- Providing a representative view of the development from a number of angles to allow assessment of the view of the development changing along the length of the coastline; and
- Within 20km of the development as per the SNH visualisation guidelines.

As noted within the SNH (2014) guidance document for undertaking visualisations, the initial provisional list of viewpoints is then assessed to down select the number of viewpoint locations to a Project specific number of locations that provides suitable information to inform the EIA. This down selection review process involved the review of the wireline drawings from each location and how each location varies in relation to the Project site. This process, undertaken with MS-LOT, reduced the number of viewpoints to the ones identified within the Original ES. These locations allow for an appropriate assessment of how the Project would be viewed from the Aberdeenshire coastline from different angles and perspectives. Additional information on the Balmedie viewpoint has now been included in the cumulative impact assessment section to included EOWDC.

4.4.2. Impact Assessment: Development Area

The key risks and potential impacts within the Development Area were identified as follows in the Original ES:

- Installation and decommissioning of inter-array cables and anchors;
- Installation and decommissioning of WTGs and floating substructures;
- Maintenance of WTGs and substructures (major component maintenance); and
- Operational windfarm.

No additional consideration has been provided for installation, decommissioning or maintenance activities in this ES Addendum. Further consideration has however been given to the impact of the operational windfarm on Viewpoint 20 – Dunnottar Castle, and a night-time visual impact assessment

has now also be considered for four identified viewpoints within the Aberdeen City Council area. The four viewpoints are (Figure 4-1):

- Viewpoint 4 – Eastern Boulevard;
- Viewpoint 5 – East side of Castlehill;
- Viewpoint 6 – Torry Battery/Girdleness Point
- Viewpoint 7 – Doonies Farm

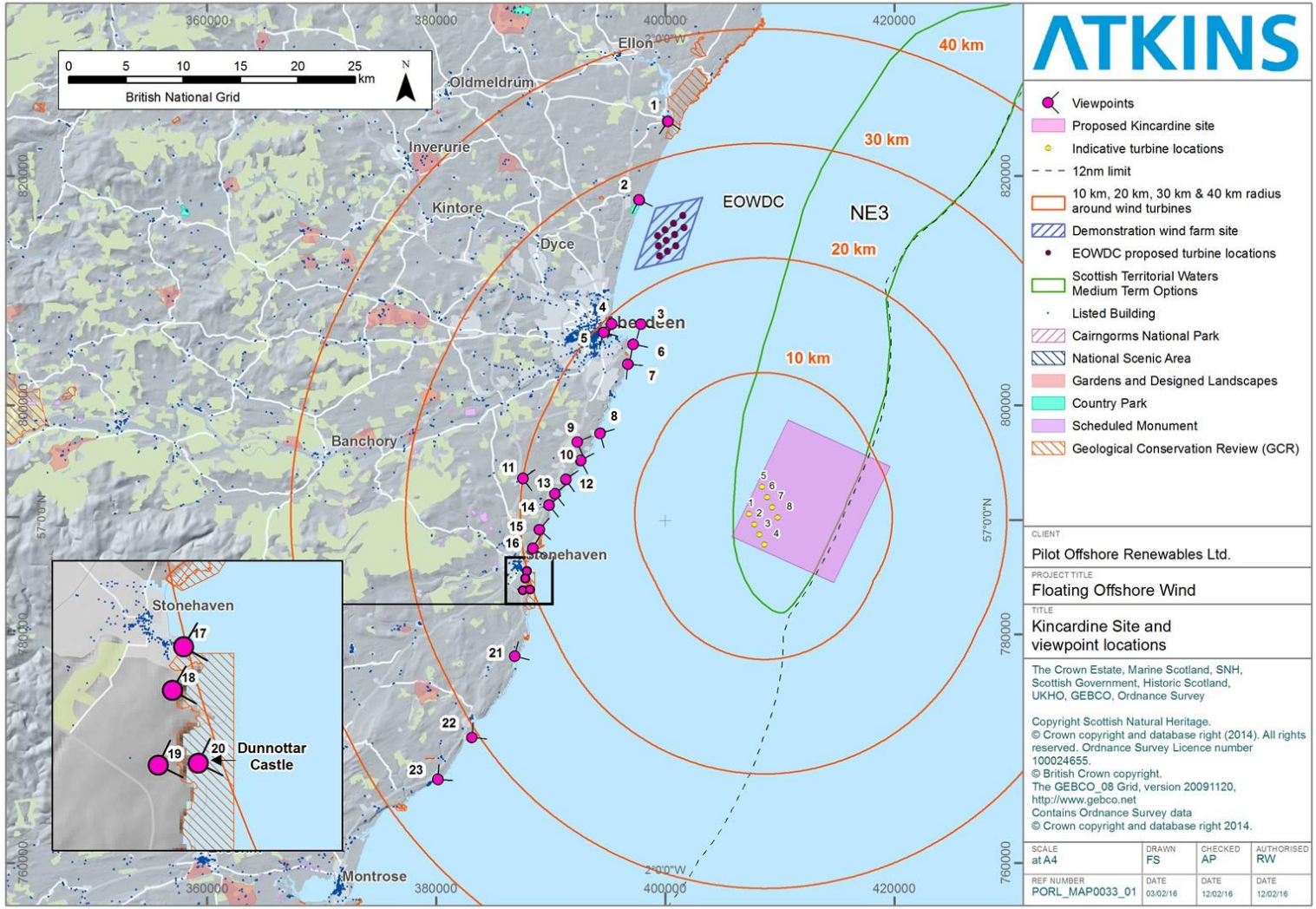

Figure 4-1 Viewpoints for the Project

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4.4.2.1. Operational Windfarm

In the Original ES the Significance of Impact to Dunnottar Castle and the visual receptors was determined to be Minor/Moderate and Moderate for Viewpoints 19 and 20 respectively. Whilst no responses during Public Consultation were received in disagreement with the judgements made regarding impacts to Dunnottar Castle, it was however suggested that not enough detail was given in the Original ES as to how conclusions were determined. As the castle is one of the most predominant tourist attraction in proximity to the Project and a Grade A Listed building additional information has been provided in this ES Addendum.

Dunnottar Castle is over 20km from the nearest turbine within the Development Area, and as shown in the wirelines and photomontages in Appendix D of the Original ES the turbines would be visible on the horizon on clear days. It is important to note is that the mitigation measures already considered such as the turbines being predominantly light grey in colour to blend in as much as possible with the colour of the sky in the UK will reduce the visibility of the turbines as much as possible. However, as noted in the Original ES the sensitivity of the Castle as a listed building is high, and the windfarm will be visible, it is therefore appropriate to fully assess the impact in line with the guidance provided by Historic Environment Scotland (SM986)[10] to the setting of Dunnottar Castle.

As shown in the baseline photograph from Dunnottar Castle the seascape is currently uninterrupted by any permanent structures. Therefore whilst the presence of the windfarm will interrupt the view from the castle to some degree on clear days, it should also be noted that there is regular vessel traffic along the coastline including within the field of view from Dunnottar Castle as described in Chapter 9 which would also cause much closer temporary disturbances to the field of view from the castle. Furthermore, vessel movements have been occurring for decades and will be considered by many visual receptors as a 'normal every day activity which is part of the view' from the castle. As a result, the turbines will not be the dominant disturbance to the view from the castle and due to the distance from the Development Area. It is considered that the turbines will also not change the view in such a way that would detract from the ability for tourists and visitors understanding or appreciating the historic importance of the castle. Furthermore, the fact the castle remains such a prominent tourist attraction along the Aberdeenshire coastline is testament to its historical significance which is able to absorb new developments such as the windfarm without eroding the key characteristics of the castle as an attraction.

4.4.2.2. Operational Windfarm – Night-time

Overview of Impact

As there is no offshore substation for the Project (the largest contributor to night-time visual impacts from offshore windfarm developments) the resulting visual impact from the Project will be caused by the navigational safety light system that is required for offshore structures as outlined within by the CAA and the IALA standards[11] .

Characterisation of Impact

Viewpoint 4 – Eastern Boulevard.

The initial assessment from this location concluded that the Project was not visible from this location, due to the Torry headland and buildings located within that area. Therefore, as the navigational lights will not be observable from this location the magnitude of effect will be negligible, and the sensitivity of the site and receptors is considered to be moderate/high respectively. Therefore the significance of impact is considered to be minor and minor/moderate.

Viewpoint 5 – East side of Castlehill.

The initial assessment from this location concluded that the Project was not visible from this location, due to the Torry headland and buildings located within that area. Therefore as the navigational lights will not be observable from this location the magnitude of effect will be negligible, and the sensitivity of the site and

[10] Managing Change in the Historic Environment – Setting available at https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=80b7c0a0-584b-4625-b1fd-a60b009c2549

[11] IALA Recommendation 0-139 (the Marking of Offshore Wind Farms)

receptors is considered to be low and moderate/high respectively. Therefore the significance of impact is considered to be negligible/minor and minor/moderate.

Viewpoint 6 – Torry Battery/Girdleness Point.

The Project is 18km from this viewpoint location and the navigational lights used for the lighting of the structures will be very dim at this distance and therefore the magnitude of effect from navigational lighting will be negligible in this currently lit environment (Girdleness Lighthouse, navigational buoys and shipping activity). The sensitivity of this viewpoint and receptors is considered to be low and moderate/high respectively, and therefore the significance of impact is considered to be negligible/minor and minor/moderate.

Viewpoint 7 – Doonies Farm

The Project is 18km from this viewpoint location and the navigational lights used for the lighting of the structures will be very dim at this distance and therefore the impact from navigational lighting will be minimal in this currently lit environment. Night-time lights will be observed from the Girdleness lighthouse and also the vessels located within the rig mooring zone approximately 3.5nm from the viewpoint. It is therefore judged that the magnitude of the effect of the Project at night on the viewpoint is low to negligible. The sensitivity of this viewpoint and receptors is considered to be moderate and moderate/high respectively, and therefore the significance of impact is considered to be minor and minor/moderate.

Table 4-1 Results of the impact assessment for the identified viewpoints and receptors through identification of sensitivity, magnitude of effect and the resultant significance of impact

Impact	Viewpoint	Landscape/ Seascape Receptors	Sensitivity of Viewpoint Sensitivity of Receptors	Magnitude of Effect	Significance of Impact
Night time lighting of offshore structures for safe navigation (vessels and aviation)	4 Eastern Boulevard Aberdeen	Seascape	Moderate	Negligible • Limited visibility of offshore lights due to distance • Large number of lights from inshore vessel underway or at anchor. • No offshore substation	Minor
		Visitors/ Walkers	Moderate/High		Minor/Moderate
	5 East side of Castlehill	Landscape	Low		Negligible/Minor
		Residents	Moderate/High		Minor/Moderate
	6 Torry Battery/Girdleness Point	Seascape	Low		Negligible/Minor
		Visitors/ Walkers	Moderate to High		Minor/Moderate
	7 Doonies Farm	Seascape	Moderate		Minor
		Visitors/ Walkers	Moderate to High		Minor/Moderate

4.5. Cumulative Impacts

4.5.1. Other Proposed Windfarms – EOWDC

Section 11.6.2 of the Original ES provided a list of the other offshore windfarms in the vicinity of the Project, and stated that the EOWDC had been considered during the initial impact assessment as mutual viewpoints were considered and it assumed that they EOWDC would be present during the operational phase of the Kincardine Offshore Wind Farm. As requested as part of the public consultation, a wireline and photomontage has been produced for Viewpoint 2 Balmedie Beach including both the EOWDC and the Project as the viewpoint closest to the EOWDC site. The wireline and photomontage can be found in Appendix A.

Overview of Impact

This cumulative assessment from Balmedie Beach has only considered the operational phase of the developments as this is what was considered in the EOWDC Environmental Impact Assessment[12] (Vattenfall, 2011) as the phase which would have the most potentially significant effects due to the duration of this stage compared to installation, decommissioning and maintenance. Further, only Viewpoints 1 and 2 have been assessed as the remainder of the Viewpoints are south of the Project and therefore both wind farms would not be visible from these locations.

Characterisation of Impact

The EOWDC development is composed of 11 wind turbines with a maximum nacelle height of 120m above LAT, with a maximum height to blade tip of 195m. From Balmedie Beach, all EOWDC turbines will be visible due to the proximity of the beach to the development (2km) and a result the significance of the impact was considered Major in the EOWDC ES. From Balmedie Beach looking towards the Project as shown in Appendix A, a large proportion of the EOWDC turbines (eight of the 11) are visible, and on the horizon the wireline also shows that all eight of the Kincardine Offshore Wind Farm turbines will also be visible on clear days. Due to the distance offshore and from Balmedie Beach (29km) it is not anticipated that the Project will be visible from this viewpoint during cloudy/overcast conditions. As described in the Original ES the significance of impact at Viewpoint 2 was considered Minor/Moderate.

As the significance of impact was considered Major for the EOWDC to Balmedie Beach and visual receptors, the cumulative significance of impact is also considered to be major despite the limited additional impact the Project will have on the seascape. Likewise from Viewpoint 1 Newburgh, the significance of impact is considered to be major for the EOWDC, and therefore the cumulative significance of impact will also be major for this location and receptors.

4.5.2. Aberdeen Harbour Port Expansion, Nigg Bay – Night time

Overview of Impact

Consultation responses requested that the cumulative visual impact of the Project and the Aberdeen Harbour Expansion at Nigg Bay due to night-time lighting should also be considered. However, no night-time cumulative visual assessment can be made as information on the lighting of the Aberdeen Harbour Expansion at Nigg Bay was not available for an in-combination assessment. It should however be noted as Aberdeen Harbour Expansion at Nigg Bay is located at one of the viewpoints (Torry battery) where the likely additional impact from the Project is considered to be negligible due to the large number of light sources that would be expected within a safe port working environment (directional tower lights, navigation aids and building lighting).

4.5.3. Sequential Cumulative Impacts

As a result of the major significance of impact of the cumulative assessment for the Project and the EOWDC, sequential cumulative effects (i.e. those seen by the travelling public) from the A90 trunk road are also predicted to occur as the visibility of turbines will be extended along the coastline on occasions when both windfarms are visible to tourists and residents.

[12] Vattenfall (2011) European Offshore Wind Deployment Centre Environmental Statement available at http://www.vattenfall.co.uk/en/file/EOWDC-consent-vol2.pdf_18477873.pdf

4.6. Mitigation

Mitigation was discussed in Section 11.5 of the Original ES and stated that no further mitigation is planned or required, this remains unchanged. Furthermore, no mitigation was considered in the EOWDC ES.

However, mitigation of the visual impacts of the windfarm at night-time was not included in the Original ES and therefore the following information has been included in this ES Addendum. As the night-time lighting for the turbines and sub-structures is based around the requirement for visibility for safe navigation, there is limited mitigation that can be applied to the lighting systems used for the structures as visibility is required for 360 degrees around each structure. It should be noted that the lighting requirements to allow vessels and aircraft to see the structures is defined by candle power output, rather than distance and therefore the light effect will vary depending the ambient lighting condition each night. It should also be noted that poor weather conditions due to low cloud, fog, rain or snow will significantly reduce the visibility of the WTGs and floating sub-structures during night time periods.

4.7. Summary and Residual Impacts

As no further mitigation measures are available, the residual impacts remain the same as identified during the original impact assessment as presented in Section 11.7 of the Original ES. The results of the additional elements considered as part of the SLVIA in this ES Addendum are summarised below.

Table 4-2 Summary of identified impacts of the Project to seascapes, landscapes, viewpoints and visual receptors - Development Area, night-time

Impact	Receptor	Residual Impact Significance
Operation and Maintenance		
Operational windfarm – Night-time	Viewpoint 4 Eastern Boulevard Aberdeen	Minor
	Visitors/ walkers	Minor/Moderate
	Viewpoint 5 East side of Castlehill	Negligible/Minor
	Residents	Minor/Moderate
	Viewpoint 6 Torry Battery/Girdleness Point	Negligible/Minor
	Visitors/ walkers	Minor/Moderate
	Viewpoint 7 Doonies Farm	Minor
	Visitors/ walkers	Minor/Moderate

Table 4-3 Summary of identified cumulative impacts of the Project and the EOWDC to seascapes, landscapes, viewpoints and visual receptors (operation and maintenance)

Impact	Receptor	Residual Impact Significance
Operational windfarm – Cumulative impact assessment with EOWDC	Viewpoint 1 Newburgh (carpark to links)	Major
	Visitors/Walkers/Residents	Major
	Viewpoint 2 Balmedie Beach (access to beach)	Major
	Visitors/Walkers/Residents	Major

5. Socio- Economics

5.1. Introduction and Stakeholder Responses

This section of the ES Addendum presents additional information to address the responses provided during the consultation period.

5.2. Baseline Environment

The baseline environment was defined in Section 13.2 of the Original ES and remains unchanged.

5.3. Assessment Methodology

The assessment methodology for the socio economic chapter is contained within Section 13.2 of the Original ES and remains unchanged.

5.4. Impact Assessment

5.4.1. Employment and Economic

Direct Employment

To address the consultation responses regarding employment potential the following further considerations are provided. KOWL will operate its operational and maintenance base from Aberdeen and therefore it will employ a number of people within Aberdeen City and Shire. This will include a number of trained offshore windfarm engineers to undertake maintenance on the offshore structures and also the support staff onshore (office team). Additionally a crew transfer vessel will be required to take the engineers out to the offshore windfarm and it is currently expected that this will be based in Aberdeen also.

The design and location of the facilities is in preparation. It will consist of an office, warehouse and substation. It will form the base for the operation and control of the Project. It will consist of an office for up to 10 people to operate and manage the Project, an operations base for the offshore maintenance teams with showers, changing rooms and briefing rooms, a small workshop and warehouse for spares for the turbine and substructure. The offshore facilities will be sized for a maximum crew of 12 technicians and up to three vessel crew.

The office staff will be locally based and consist of a project manager and necessary technical and administrative staff to control and manage the operation. The core team will be augmented by specialist contactors, many of whom will be supplied by local companies with offshore experience gained in the Oil and Gas industry. The turbine manufacturer and offshore contractors will supply the technicians responsible for turbine and substructure maintenance. It is likely that most of the technicians will be locally based, augmented by specialists as required. Given the depth of skills in offshore and marine activities contained in the Oil and Gas industry it is likely that most of the skills required to maintain the Project can be sourced locally. Furthermore vessels for maintenance of the Project will be sourced locally and owners will supply the crews for the vessels.

Work to identify opportunities to promote local supply chain and employment opportunities is currently being undertaken and a large number of local firms form part of the KOWL development group (ship management companies, mooring specialists, survey companies and local consultants). KOWL has also been in discussions with Scottish Enterprise in regard to undertaking a number of events in conjunction with its Tier 1 contractor to publicise the project and to introduce smaller Tier 2 and 3 suppliers to the programme to provide them with an understanding of opportunities that will be available during the CAPEX and OPEX phases and to provide them with introduction to KOWL and the Tier 1 contractors. This should assist local companies to access opportunities in both the CAPEX and OPEX phase of the development.

KOWL will work with the key contractors selected to undertake the onshore and offshore work to encourage them to engage with local businesses to maximise the local content. The Project will seek to maximise access

to the knowledge and experience of the Oil and Gas sector and apply this to the Kincardine project, both in the construction phase and the operational phase.

KOWL has maintained a continuous dialogue with AREG (Aberdeen Renewable Energy Group) since inception and will aim to work with AREG, Scottish Enterprise and the Council to publicise the Kincardine programme, to promote local content and employment opportunities. The knowledge of the local Oil and Gas, Marine and Electrical supply chain in the construction and operation of floating offshore structures and their experience in operating offshore electrical and mechanical equipment should create a number of opportunities for the local supply chain.

Apprenticeships and Education

As KOWL are only a demonstrator development, rather than a large offshore windfarm there will be limited opportunities to take on apprenticeships directly as part of the Project development. However, this will be considered going forward as the Project develops.

KOWL will work with its key contractors and encourage them to offer opportunities for school leavers through apprenticeships. KOWL would expect that these companies would have such programmes and will work with them to see how they could assist in these initiatives. For example, recent discussions with a potential vessel supplier has indicated a preference for locally based staff and revealed that they have developed an apprenticeship scheme for their company. They are keen to work with their clients to provide more opportunities.

As KOWL are only a demonstrator development, rather than a large offshore windfarm and there will be limited opportunities to produce an educational program. However, KOWL would be committed to local engagement and are currently looking to install an information point at a local venue to outline the project and technology behind the scheme. Furthermore, as a demonstration project for floating wind, KOWL will provide a base for understanding the performance of floating systems and will seek to disseminate the results of any programme that it undertakes and to share this information. As part of this programme there may be opportunities to work with schools in Aberdeen City to provide knowledge and experience of offshore wind.

As a demonstrator development KOWL will seek to maximise the learning from the programme and to develop the knowledge and skills required to progress the development of large scale floating offshore windfarms in Scotland, the UK and internationally. To this end the project will seek to work with industry and academia to maximise the learning from the demonstration programme. KOWL will collaborate with them to undertake suitable research and development programmes and in particular to provide a platform for offshore monitoring of the environmental impact and performance of the system, and potentially the testing of new technology.

KOWL has always sought to maintain a dialogue with local universities and has offered them the opportunity to collaborate with the Project to maximise the value of the experience and to facilitate future floating offshore wind developments. KOWL would encourage these organisations to work with the local supply chain to maximise the knowledge and experience which can be gained, not only from the KOWL programme but the other programmes which will take place in NE Scotland – at Aberdeen and Peterhead – to develop knowledge and expertise which provides future opportunities for Aberdeen companies in the emerging global market for floating offshore wind.

Economic

To address the consultation responses regarding the economic impact on commercial fisheries, the following further considerations are provided. The impact on fishing has been assessed via the fish landings data and the potential impact on fishing has been quantified in terms of the overall fish landings and the possible reduction in fishing grounds. This has been assessed as Minor and KOWL plan to further reduce this impact by a number of measures planned as part of the project:

1. Use of local fishing vessels to act as guard boats during the construction period;
2. Employing a fishing liaison officer from the local fishing community to act as a point of contact between KOWL and the Scottish Fishing Federation; and
3. Input into the new Fishing community fund that is being set up as part of the Marine Scotland initiative to support the local fishing communities.

5.4.2. Tourism and Recreation

In the Original ES it was stated that the Project is expected to have a negligible impact on tourism and recreation in the local area. The distance of the Development Area from the shore and very limited onshore development element means there is no significant impact on existing tourism and recreation uses and users in the local area. Dunnottar Castle at Stonehaven is the most predominant tourist attraction in any proximity to the Project and its operation and use will be negligibly affected by the development.

In response to the consultation comments further consideration has been given to this to provide additional justification for this negligible impact. A range of academic and industry studies have looked at how offshore renewables interact with tourism. A 2008 study by the Scottish Government[13] looked at the interactions between offshore and onshore renewables and highlights how the interactions are complex but finds that wind turbines have a minimal impact on the tourism industry. Despite this, there are negative consequences of establishing wind farms near to visitor economy assets. The report highlights several points which need to be considered to ensure that any adverse local impacts on tourism are minimised. We summarise what is known about these in the table below.

Table 5-1 Supporting information for negligible impact of the Project on tourism

Key Points	Comment
The number of tourists travelling past en route to elsewhere	In 2013 visitors spent over £220 million and 2.5 million nights in the region. There were 441,000 overnight trips made to Aberdeenshire by both domestic and international visitors, with 3.8 million tourist day visits[14]. Tourism is an important growth sector in Aberdeenshire. The stretch of coast where the wind farm will be visible is not a large focus for tourist activity, locally, regionally or nationally nor a gateway for many tourists. Due to the distance of the scheme to the shore and the existing number of vessels and other sea based craft, there is likely to be little impact upon tourists, accommodation or any growth in the tourism industry locally.
The views from accommodation in the area	
The relative scale of tourism impact i.e. local and national	
The potential positives associated with the development	There are several positives associated with energy security, technology innovation, employment and energy sector growth which have also been considered in connection with as well as separate to the visitor economy profile.
The views of tourist organisations i.e. local tourist businesses or Visit Scotland.	Open and transparent consultation is very important to this and the team have sought to involve the local community and other tourism and recreation stakeholders from a very early stage of the project and this process will continue to occur as the project progresses. Several relevant tourism bodies including Sports Scotland and Visit Scotland were engaged through the planning process.

There have been more recent studies on how the renewables industry interacts with the local labour market[15], visitor economy assets (e.g. historical buildings[16]) and tourism employment[17]. These reports highlight the complex dynamics between tourism and offshore renewables. Transferring the key elements of these studies

[13] http://www.gov.scot/Publications/2008/03/07113507/1
[14] Aberdeenshire Profile January 2015, available at: https://www.aberdeenshire.gov.uk/media/4705/aberdeenshireprofile2015.pdf (accessed August 2015)
[15] OECD/Martinez-Fernandez. C, Hinojosa C, Miranda G., "Green jobs and skills: the local labour market implications of addressing climate change", 8 February 2010, working document, CFE/LEED, OECD, www.oecd.org/dataoecd/54/43/44683169.pdf?contentId=44683170
[16] Sullivan, Robert G., et al. "Offshore Wind Turbine Visibility and Visual Impact Threshold Distances." Environmental Practice 15.01 (2013): 33-49.
[17] Biggar Economics (2016) Wind Farms and Tourism Trends in Scotland A Research Report July2016

to what is known about the Kincardine Offshore Windfarm suggests that the scheme is likely to have little impact upon employment in tourism or the activity of the tourism sector in the study area.

There is also the potential for the Project to have a positive impact on tourism in the area as the Project will provide a technical tourist attraction for a number of technical groups and institutions from around the UK and World. As one of the first offshore floating offshore windfarm demonstrators this will likely attract interested and a requirement to undertaken offshore visits to the Development Area during the lifetime of the Project. This additional tourism will generate revenue for the local area through a number of methods:

- Transport and accommodation with the local area
- Additional people visiting the Aberdeen City area
- Placing Aberdeen on the world map for offshore renewables
- Vessel hire and support
- Tourist centre

Additional tourism interest will be generated by the KOWL visitor centre that will be placed within the near vicinity of the cable landing area and this will attract a number of additional visitors to the area. Examples of this exist in Scotland already, with the Whitelee Windfarm visitor centre being a significant contributor to the local economy through job creation and the number of visitors to the area surrounding the windfarm development and acts as an educational centre for school children from the surrounding area.

For full details of the visual impacts of the development in terms of visual amenity for tourism and recreation refer to Chapter 11 and Chapter 15 of the Original ES for impacts on any other related marine uses, including recreational boating.

5.5. Mitigation

Mitigation was discussed in Section 13.5 of the Original ES which stated that no further mitigation is planned or required, this remains unchanged.

5.6. Cumulative Impacts

Cumulative impacts were discussed in Section 13.6 of the Original ES and remains unchanged.

5.7. Summary and Residual Impacts

A summary of the environmental impact assessment was provided in Section 13.7 of the Original ES. The conclusions in the Original ES remain unchanged as the additional information provided in this addendum is in support of the original conclusions provided.

Appendices

Appendix A. Visualisations

Appendix B. HRA Addendum

Appendix C. Permanent (and Temporary) Deposits

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