Inch Cape Onshore Transmission Works

Regulation 11 Further Application Environmental Impact Assessment (EIA) Report

Volume 3 Technical Appendices

November 2021

Inch Cape
OFFSHORE LIMITED

SDIC
Red Rock Power Limited

ESB
Energy for generations

Inch Cape
OFFSHORE LIMITED

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Inch Cape Offshore Wind Farm

Onshore Transmission Works

Regulation 11 Further Application

Environmental Impact Assessment (EIA) Report

Volume 3: Technical Appendices

November 2021

Technical Appendices

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Inch Cape OFFSHORE LIMITED

Appendix 1A

Minister's Decision and Planning Conditions February 2019

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Robin Hutchison
CMS Cameron Mckenna Nabarro
Olswang LLP

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Our ref: CIN-ELN-001
22 February 2019

Dear Mr Hutchison

TOWN AND COUNTRY PLANNING (SCOTLAND) ACT 1997
APPLICATION FOR PLANNING PERMISSION IN PRINCIPLE FOR ONSHORE TRANSMISSION WORKS ASSOCIATED WITH THE INCH CAPE OFFSHORE WIND FARM COMPRISING THE CONSTRUCTION, OPERATION AND DECOMMISSIONING OF AN ONSHORE SUBSTATION, ELECTRICITY CABLES AND ASSOCIATED INFRASTRUCTURE REQUIRED TO EXPORT ELECTRICITY FROM THE INCH CAPE OFFSHORE WIND FARM TO THE NATIONAL ELECTRICITY TRANSMISSION SYSTEM. FORMER COCKENZIE POWER STATION SITE, PRESTONPANS, EAST LOTHIAN

1. This letter contains Scottish Ministers' decision on the above application submitted to East Lothian Council by Savills on behalf of Inch Cape Offshore Limited. The application was called in for Scottish Ministers' determination on 9 April 2018.

2. The application was considered by Ms Allison Coard MA MPhil MRTPI, a reporter appointed for that purpose on 2 October 2018. As part of this process a hearing was conducted. A copy of the reporter's report is enclosed.

Consideration by the Reporters'

3. The reporters' overall conclusions and recommendations are set out in Chapter 7.

Scottish Ministers' Decision

4. Scottish Ministers have carefully considered the report. They agree with the reporter's overall conclusions and recommendation and adopt them for the purpose of their own decision.

5. Accordingly, Scottish Ministers grant planning permission in principle subject to the attached conditions for proposed onshore transmission works associated with the Inch

Cape Offshore Wind Farm comprising the construction, operation and decommissioning of an onshore substation, electricity cables and associated infrastructure required to export electricity from the Inch Cape Offshore Wind Farm to the National Electricity Transmission System Former Cockenzie Power Station Site Prestonpans, East Lothian.

6. The foregoing decision of Scottish Ministers is final, subject to the right conferred by Sections 237 and 239 of the Town and Country Planning (Scotland) Act 1997 of any person aggrieved by the decision to apply to the Court of Session within 6 weeks of the date hereof. On any such application the Court may quash the decision if satisfied that it is not within the powers of the Act, or that the appellant's interests have been substantially prejudiced by a failure to comply with any requirements of the Act, or of the Tribunals and Inquiries Act 1992, or any orders, regulations or rules made under these Acts.

7. A copy of this letter and the report has been sent to East Lothian Council, Ian Gray MSP, Scottish Natural Heritage, Historic Environment Scotland, Cockenzie and Port Seton Community Council and Prestonpans Community Council. Those parties who lodged representations will receive a copy of this letter.

Yours sincerely

ELAINE RAMSAY

CONDITIONS ATTACHED TO THE GRANT OF PLANNING PERMISSION IN PRINCIPLE

1. The submission for approval of matters specified in conditions of this grant of planning permission in principle in accordance with the timescales and other limitations in section 59 of the Town and Country Planning (Scotland) Act 1997 (as amended) shall include details of the layout, siting, design and external appearance of the Onshore Substation, electricity cables and associated infrastructure, the means of access to them, the means of any enclosure of the boundaries of the site and landscaping (including landscape and visual mitigation) of the site in accordance with the matters listed below. No work shall begin until the written approval of the authority has been given, and the development shall be carried out in accordance with that approval.

a) Details of the finished ground levels and finished floor levels of the buildings

b) The total height of any building shall not exceed 12.3 metres from the finished ground levels, as approved. The finished ground level shall be no higher than the adjacent average road level of Edinburgh Road;

c) The proposed route of the temporary rerouted Coastal Path incorporating the John Muir Way within the northern section of the application site boundary;

d) Details of the proposed colour treatment of the Onshore Substation and any other landscape and visual mitigation (which shall include architectural mitigation) to be incorporated into its design and external appearance;

e) Details of all external lighting proposed;

f) Details of the area of the Onshore Substation, which is not to exceed 2.5ha in total as shown on the drawing titled "Maximum Onshore Substation Area" docketed to this planning permission in principle; and

g) The layout shall ensure that the Onshore Substation is located outside the area identified as "No Onshore Substation Development" on the drawing titled "Maximum Onshore Substation Area" docketed to this planning permission in principle, and the Onshore Substation shall be located within the area identified as "Onshore Substation Site" on the said drawing as close to the south-western boundary of the Application Site as can be accommodated by the approved landscaping (including landscape and visual mitigation).

h) Details of landscape and visual mitigation (including architectural mitigation) shall not be submitted for approval under this condition 1 without consultation first having been carried out with the Planning Authority, Scottish Natural Heritage, Cockenzie and Port Seton Community Council and Prestonpans Community Council.

In this condition, the Onshore Substation means all the electrical equipment, ancillary equipment and internal roads to be located within the perimeter security fence, as indicatively described in paragraph 41 of Chapter 5 (Project Description) of the Environmental Impact Assessment Report.

Reason: To ensure that the matters referred to are given full consideration in the interests of the visual amenity of the area and to accord with section 59 of the Town and Country Planning (Scotland) Act 1997, as amended by the Planning etc. (Scotland) Act 2006.)

2. The development hereby approved shall be undertaken in accordance with the Environmental Impact Assessment Report docketed to this planning permission in principle, except where altered by the approval of matters specified in the condition above (including the referenced drawing) or by the conditions below, or unless otherwise agreed with the Planning Authority in writing.

Reason: To ensure the reported likely environmental impacts of the development are not exceeded and the specified mitigation measures are fully implemented.

3. The development hereby approved shall be used solely in connection with the offshore Inch Cape Wind Farm to facilitate the transmission of electricity generated by that development to the grid and for no other purposes, unless otherwise agreed in writing with the Planning Authority.

In these conditions the "Inch Cape Wind Farm" means the offshore wind farm known as the Inch Cape Offshore Wind Farm, granted consent under section 36 of the Electricity Act 1989 by the Scottish Ministers on 10 October 2014, or successor offshore wind farms located within the site of that development.

Reason: To enable the Planning Authority to regulate and control the use of the land in the interests of the wider land use planning of the area.

4. Prior to the commencement of the development hereby approved and once details of the construction methodology is known, a Construction Environmental Management Plan (CEMP) shall be submitted to and approved in writing by the Planning Authority after consultation with SEPA and SNH, and shall address the following requirements:-

a) Confirmation of the methodology to be used in constructing the Development with particular regard to construction of the substation, any tunnelling activities and the method of constructing the cable trenches;

b) A construction dust management plan identifying mitigation measures during the construction phase of the Development specifically identifying measures to minimise impacts of fugitive dust emissions on sensitive receptors;

c) A construction noise management plan identifying mitigation measures during the construction phase of the Development specifically identifying measures to minimise impacts of construction noise on sensitive receptors; and

d) An assessment of vibration impact arising from construction works and the identification of any mitigation measures required to minimise impacts of construction vibration on sensitive receptors, taking account of BS5228-1:2009 and A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites.

e) Any pre-commencement survey work, as required to re-establish base-line conditions in respect to protected species and any areas sensitive to disturbance including associated mitigation measures, as agreed with and approved by the council in consultation with SNH.

The development shall thereafter be carried out in accordance with the approved CEMP unless otherwise approved in writing by the Planning Authority.

Reason: To ensure that the reported likely environmental impacts of the development are not exceeded and the mitigation measures are put in place.

5. Prior to the commencement of the development hereby approved, a Noise Impact Assessment for the operational phase of the Development shall be submitted to and approved in writing by the Planning Authority. The Noise Impact Assessment shall be based upon the detailed site layout approved pursuant to condition 1 and shall identify the location of noise emitting plant within the site and their accompanying noise emissions. The Noise Impact Assessment shall identify measures to ensure operational noise from the development does not give rise to new or materially different impacts to those assessed in Environmental Report, unless otherwise approved in writing by the Planning Authority.

Reason: In the interests of the amenity of nearby sensitive receptors.

6. Prior to the commencement of the development hereby approved, a Traffic Management Plan (TMP) for the construction phase of the development shall be submitted to and approved in writing by the Planning Authority. The TMP shall, unless otherwise approved in writing by the Planning Authority, include the following details:

a) A Method Statement detailing and controlling access routes to and from the site for large components and day-to-day deliveries/removals associated with the construction and decommissioning phases of the development. The Method Statement shall include a detailed swept path assessment of large component delivery routes, as well as frequencies and times of deliveries and arrangements for the removal of materials/plant from the site. The Method Statement shall also include details of any off-site mitigation works;

b) Details of access and management for the onshore cabling works including the potential for traffic management on Edinburgh Road;

c) Details of the proposed vehicular access onto the B1348 for large component deliveries, this should also include the reinstatement of the access once works are completed;

d) Wheel washing facilities shall be provided and maintained in working order during the period of construction and/or decommissioning of the site. All vehicles must use the wheel washing facilities to prevent deleterious materials being carried onto the public road on vehicle wheels.

e) The TMP shall also include vehicle tracking and swept path analysis for vehicles entering and exiting the site and details of the provision of visibility splays at all vehicular accesses. It shall also include details of any road closures and suitable alternative routes during the road closures.

f) A Green Travel Plan to include measures to minimise dependency on the private car to and from the construction compounds. The TMP shall also include vehicle tracking and swept path analysis for vehicles entering and exiting the site and details of the provision of visibility splays at all vehicular accesses. It shall also include details of any road closures and suitable alternative routes during the road closures.

The development shall thereafter be carried out in accordance with the approved TMP unless otherwise approved in writing by the Planning Authority.

Reason: In the interests of road safety and in the interest of the promotion of sustainable modes of transportation.

7. Prior to the commencement of the development hereby approved, a programme for monitoring the condition of the public roads to be used by construction traffic, prior to and immediately following the completion of the development, shall be submitted to and approved in writing by the Planning Authority. The public roads to be monitored shall be (i) the B1361/B6371, from the roundabout junction of the A198 at Meadowmill (just north of the railway) northwards to the B1348 Edinburgh Road and (ii) the B1348, Edinburgh Road from the junction East Lorimer Place to Appin Drive (Traffic signals).

Thereafter the approved programme of monitoring shall be implemented. Any remedial works shown by the monitoring as arising from the construction of the development, shall be undertaken by the applicant within 3 months of the completion of the final monitoring undertaken, unless an alternative means of securing the works is approved in writing by the Planning Authority.

Reason: To ensure that damage to the public road network resulting from the proposed development is rectified.

8. Within 24 months of the permanent cessation of generation at the offshore Inch Cape Wind Farm,confirmation shall be given in writing to the Planning Authority whether or not the development hereby approved continues to be required for electricity transmission purposes.

Where the development is not required for electricity transmission purposes beyond the operational period of the offshore Inch Cape Wind Farm, within 24 months of the permanent cessation of generation at the offshore Inch Cape Wind Farm, a decommissioning and site restoration plan (the 'Demolition and Restoration Scheme') shall be submitted to and approved in writing by the Planning Authority. The Demolition and Restoration Scheme shall have due regard to the Decommissioning Programme prepared in respect of the offshore Inch Cape Wind Farm and shall include details of:

i) The extent of substation and cable infrastructure to be removed and details of site restoration;

ii) Management and timing of works;

iii) Environmental management provisions; and

iv) A traffic management plan to address any traffic issues during the decommissioning period.

The Demolition and Restoration Scheme shall be implemented in its entirety, unless otherwise approved in writing by the Planning Authority.

Where the Development is required for electricity transmission purposes beyond the operational period of the offshore Inch Cape Wind Farm, within 24 months of the development no longer being required for electricity transmission purposes, a decommissioning and site restoration plan (the 'the Demolition and Restoration Scheme')

shall be prepared and shall be submitted to and approved in writing by the Planning Authority. The Demolition and Restoration Scheme shall include details of:

i) The extent of substation and cable infrastructure to be removed and details of site restoration;

ii) Management and timing of works;

iii) Environmental management provisions; and

iv) A traffic management plan to address any traffic issues during the decommissioning period.

The Demolition and Restoration Scheme shall be implemented in its entirety, unless otherwise approved by the Planning Authority in writing.

Reason: To ensure that the application site is satisfactorily restored in the interests of the amenity of the area.

9. Prior to the commencement of the development hereby approved, a site investigation shall be undertaken in order to establish the exact situation regarding ground conditions on the site and to identify any contaminated land.

In the event that the site investigations confirm the need for remedial works to treat the ground conditions so that the site is suitable for its intended use, details of the proposed remedial strategy shall be submitted to and approved in writing by the Planning Authority. Any such remedial works shall then be undertaken prior to the commencement of development in accordance with these approved details.

Reason: To ensure that the site is suitable for development, and that remedial measures have been undertaken where necessary to ensure that potential risks have been adequately addressed.

10. Development of the site shall not commence unless and until details of the finished ground levels, finished floor levels, confirmation of the presence of any culverted watercourses, the proposed Sustainable Urban Drainage Scheme, the proposed outfall and the finalised details of the use of any landscape bunds on the proposed site, as informed by the site investigation and designs approved under condition 1, have been submitted to and approved in writing by the Planning Authority, in consultation with SEPA. Thereafter the scheme should be completed in accordance with these details.

Reason: To enable the Planning Authority to control the development in the interests of the amenity of the development and of the wider environment

11. With the exception of construction work associated with the installation of the offshore export cables construction works associated with the Development shall be limited to 0700-1900 Monday to Friday and 0800-1300 on Saturdays, unless otherwise agreed in advance with the Planning Authority. Construction works associated with the installation of the offshore export cables are permitted outwith these hours following prior notification of such works to the Planning Authority at least seven days before the works are due to commence.

Reason: To safeguard the amenity of nearby residential properties

12. Prior to the commencement of the development hereby approved, a detailed Flood Risk Assessment (FRA) shall be submitted to and approved in writing by the Planning Authority in consultation with SEPA. The details shall take account of the site layout approved under condition 1 and shall identify mitigation measures required to protect the site as a minimum from the 1:1000 year flood event, unless otherwise approved in writing by the Planning Authority. All approved flood mitigation measures must be carried out in accordance with the approved details prior to the Development becoming operational.

Reason: To ensure the Development is appropriately protected against flood risk and does not give rise to increased flood risk elsewhere.

13. Prior to the commencement of development details of artwork to be provided on the site or at an alternative location away from the site shall be submitted to and approved by the Planning Authority and the artwork as approved shall be provided prior to the operation of the onshore substation, unless otherwise agreed in writing by the Planning Authority.

Reason: To ensure that artwork is provided in the interest of the visual amenity of the locality or the wider area.

14. No development shall take place until there has been submitted to and approved in writing by the Planning Authority a scheme of landscaping taking account of the detailed site layout and other details proposed or approved under the terms of condition 1. The scheme shall provide details of: the height and slopes of any mounding on or re-contouring of, the site; tree and shrub sizes, species, habitat, siting, planting distances and a programme of planting. The scheme shall include indications of all existing trees and hedgerows on the land and details of any to be retained, and measures for their protection in the course of development. It should also address long term management of the approved planting and boundary treatments.

In accordance with the approved scheme all planting, seeding or turfing shall be carried out in the first planting and seeding season following the occupation of the buildings or the completion of the development, whichever is the sooner, and managed in accordance with that scheme. Any trees or plants which within a period of five years from the completion of the development die, are removed or become seriously damaged or diseased shall be replaced in the next planting season with others of similar size and species, unless the Planning Authority gives written consent to any variation.

Reason: In order to ensure the implementation of a landscaping scheme to enhance the appearance of the development in the interests of the amenity of the area.

Advisory Notes

1. **Notice of the start of development:** The person carrying out the development must give advance notice in writing to the planning authority of the date when it is intended to start. Failure to do so is a breach of planning control. It could result in the planning authority taking enforcement action. (See sections 27A and 123(1) of the Town and Country Planning (Scotland) Act 1997 (as amended).)

2. **Notice of the completion of the development:** As soon as possible after it is finished, the person who completed the development must write to the planning authority to confirm

the position. (See section 27B of the Town and Country Planning (Scotland) Act 1997 (as amended).)

3. **Display of notice:** A notice must be displayed on or near the site while work is being carried out. The planning authority can provide more information about the form of that notice and where to display it. (See section 27C of the Town and Country Planning (Scotland) Act 1997 Act (as amended) and Schedule 7 to the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013.)

Appendix 2: Schedule of Plans

013 Location Plan

Layout Plan attached to condition one.

Environmental Impact Assessment: Description of Development (in so far as not superseded by parameters set out in the Indicative Layout plan above and by matters otherwise specified in conditions).

Appendix 3A

Inch Cape OnTW Scoping Progression from 2017-2021, (inc. cumulative considerations)

Appendix 3A: Inch Cape OnTW Scoping Progression from 2017-2021, (inc. cumulative considerations)

Technical Discipline	2017 Scoping Opinion – Element Scoped In?	2018 EIA2018 EIA Report – Significant Effect following mitigation?	Significant Effect (2018 Public Inquiry Conclusions)	Material Changes (Legislation, Policy, Baseline, Methodology)	Scoped in to 2021 Further Application EIA Report?
Ecology					
Ecology (Construction and Operation)					
Permanent Habitat Loss	No	N/A	No	No	No
Temporary Habitat Disturbance	Yes	No	No	No	No
Disturbance of Wildlife	Yes	No	No	No	No
Pollution of habitats	Yes	No	No	No	No
Killing and/or injury of locally occurring wildlife	No	N/A	No	No	No
Cumulative (Ecology/Ornithology)					
Cumulative Permanent Habitat Loss	No	N/A	No	No	No
Cumulative Temporary Habitat Disturbance	Yes	No	No	Yes	No
Cumulative Disturbance of Wildlife	Yes	No	No	Yes	No
Cumulative Killing and/or injury of locally occurring wildlife	No	No	No	Yes	No
Cumulative Pollution of Habitats	Yes	No	No	Yes	No
Impacts and Cumulative Impacts on Natura Sites (HRA)	Yes	No	No	Yes	No
Hydrology, Geology, Hydrogeology					
Construction					
Flooding of the works or Revised Application Site during construction (fluvial, wave or tidal)	Yes	No	No	No	No
Surface erosion due to wind or water (construction, decommissioning and operation)	No	N/A	No	No	No
Disturbance of subsurface: made ground (infilled colliery waste), possible demolition rubble/ historic foundations left following demolition of power station.	Yes	No	No	No	No
Residual contamination from power station (leaks and spills of hydrocarbons)	Yes	No	No	No	No

Technical Discipline	2017 Scoping Opinion – Element Scoped In?	2018 EIA2018 EIA Report – Significant Effect following mitigation?	Significant Effect (2018 Public Inquiry Conclusions)	Material Changes (Legislation, Policy, Baseline, Methodology)	Scoped in to 2021 Further Application EIA Report?
Destabilisation of coal mine workings and release of gases from mine workings	Yes	No	No	No	No
Effects of dredging or other works in inter-tidal zone on possibly contaminated sediments.	Yes	No	No	No	No
Disposal of waste from welfare facilities	Yes	No	No	No	No
Flooding of property off-site as a consequence of development	Yes	No	No	No	No
Operational					
Flooding of the Revised Application Site fluvial, wave or tidal)	Yes	No	No	No	No
Impact on subsurface infrastructure and off-site areas from historical contamination.	Yes	No	No	No	No
Pollution of private water supplies	Maybe	No	No	No	No
Impact on off-site areas and infrastructure from historical contamination	Yes	No	No	No	No
Decommissioning					
The potential effects will be similar to, and no worse than, those experienced at the Construction stage.	Yes	No	No	No	No
Cumulative					
Concurrent groundwater impacts with adjacent operational substation – pollution of private water supplies	Maybe	No	No	No	No
Concurrent groundwater impacts with adjacent operational substation – impact from historical contamination	Maybe	No	No		No
Landscape and Visual					
Impacts on local visual amenity and landscape including the coast and nearby recreational areas.	Yes	Yes	Yes	No	No
Landscape and visual impact on residents	Yes	Yes	Yes	No	No
Impacts on local landscape designations.	Yes	No	No	Yes	Yes
Landscape and Visual Impact on people engaged in outdoor recreation	Yes	Yes	No	No	No
Cumulative	Yes	No	No	Yes	Yes

Technical Discipline	2017 Scoping Opinion – Element Scoped In?	2018 EIA2018 EIA Report – Significant Effect following mitigation?	Significant Effect (2018 Public Inquiry Conclusions)	Material Changes (Legislation, Policy, Baseline, Methodology)	Scoped in to 2021 Further Application EIA Report?
Cultural Heritage					
Direct Impacts	No	N/A	No	No	No
Setting Effects	Yes	No	No	No	No
Cumulative					
Setting effects	Yes	No	No	Yes	No
Noise and Vibration					
Construction Traffic	Yes	No	No	No	No
Construction Vibration	Yes	No	No	No	No
Operational Sound and cumulative noise	Yes	No	No	Yes	No
Operational Vibration	No	N/A	No	No	No
Traffic and Transport					
Impact of Construction Traffic upon severance, driver delay, pedestrian delay, pedestrian amenity, accidents and safety and hazardous loads	Yes	No	No	No	No
Impact of abnormal indivisible loads	Yes	No	No	No	No
Cumulative					
Impact of Construction Traffic upon severance, driver delay, pedestrian delay, pedestrian amenity, accidents and safety and hazardous loads cumulatively with the Blindwells development.	Yes	No	No	Yes	No
Impact of operational and maintenance traffic	No	N/A	No	Yes	No
Impact of decommissioning traffic including cumulative impact	Yes	No	No	No	No
Socio economic, LandUse and Tourism					
Onshore Substation: impacts of construction, operation and maintenance and decommissioning – expenditure, employment and economic activity, land use, public access and recreation and tourism	Yes	No	No	Yes	No

Technical Discipline	2017 Scoping Opinion – Element Scoped In?	2018 EIA2018 EIA Report – Significant Effect following mitigation?	Significant Effect (2018 Public Inquiry Conclusions)	Material Changes (Legislation, Policy, Baseline, Methodology)	Scoped in to 2021 Further Application EIA Report?
Landfall and Onshore export cable: impacts of construction, operation and maintenance and decommissioning – expenditure, employment and economic activity, land use, public access and recreation and tourism	Yes	No	No	Yes	No
Air Quality					
Disamenity effects resulting from deposited Fugitive Dust from construction and decommissioning activities	Yes	No	No	No	No
Health effects due to release of suspended particulate matter from construction and decommissioning activities and vehicular movements	Yes	No	No	No	No
Health effects due to release of combustion pollutants from construction and decommissioning activities and vehicular movements	Yes	No	No	No	No
Dis-amenity or health effects resulting from deposited fugitive dust, combustion or other airborne pollutants from operational activities, and cumulative impacts of the same	No	N/A	No	No	no
Cumulative					
Disamenity effects resulting from deposited Fugitive Dust from construction activities	Yes	No	No	Yes	No
Health effects due to release of suspended particulate matter from construction and decommissioning activities and vehicular movements	Yes	No	No	Yes	No
Health effects due to release of combustion pollutants from construction and decommissioning activities and vehicular movements	Yes	No	No	Yes	No

Appendix 3B

ELC Scoping Opinion OnTW 2021

Inch Cape Onshore Transmission Works: EIA Scoping Opinion

The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 – Scoping Opinion under Regulation 17

Planning Service

Development: Communities

East Lothian Council

John Muir House

Haddington

East Lothian

EH41 3HA

27 September 2021

Acronyms, Abbreviations and defined terms	
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EIA Regulations	Town and Country Planning (Environmental Impact Assessment)(Scotland) 2017
ELC	East Lothian Council
EIAR	Environmental Impact Assessment Report
ICOL	Inch Cape Offshore Limited
IAQM	Institute of Air Quality Management
LVIA	Landscape and Visual Impact Assessment
OnTW	Onshore Transmission Works
ELLDP	East Lothian Local Development Plan 2018
S36 consent	Consent under Section 36 of the Electricity Act 1989
SEPA	Scottish Environment Protection Agency
SLA	Special Landscape Area
SNH	Scottish Natural Heritage (now NatureScot)
SPA	Special Protection Area, part of the Natura 2000 series
SSSI	Site of Special Scientific Interest

1. Introduction

1.1 Inch Cape Offshore Limited (ICOL) propose to construct a windfarm off the Angus coast, with connection to the national grid at Cockenzie, in East Lothian. The onshore works comprise "Onshore transmission works associated with the Inch Cape Offshore Wind Farm comprising the construction, operation and decom- missioning of an onshore substation, electricity cables and associated infrastructure required to export electricity from the Inch Cape Offshore Wind Farm to the National Electricity Transmission System, Former Cockenzie Power Station Site, Prestonpans, East Lothian, EH32 0JA". The site extends to an area of approximately 12 hectares however, it is expected that the land take for the substation will be around 3.5 hectares.

1.2 Scottish Ministers granted planning permission in principle for these onshore transmission works (OnTW) subject to 14 planning conditions, several of which require the submission of further applications for Approval of Matters Specified in Conditions (AMSC) prior to commencement of development (East Lothian planning application reference 18/00189/PPM, available from links at www.eastlothian.gov.uk/planning) . ICOL now wish to make an application under Regulation 11 of the Town and Country Planning (Development Management Procedure)(Scotland)Regulations 2013. In accordance with Section 59 of the Town and Country Planning (Scotland) Act 1997 (as amended), Regulation 11 applications must be made within 3 years of the date of the permission in principle. This is an application for the same development where planning permission has been granted and the time limit for implementation has not expired. If granted this would have the effect of extending the time for submission of the AMSCs beyond February 2022.

1.3 The previous application was accompanied by an EIA Report ("the original EIAR"). ICOL state in their Scoping Request that they are volunteering to submit an EIA Report (EIAR) with this further application (the "new EIAR") to allow the Council to be satisfied that any reasoned conclusions on the significant environmental effects of the application taken into account current knowledge and methods of assessment. The Scoping Request has been made under Regulation 17 of those regulations. This Scoping Opinion is therefore given under the terms of those regulations only. ICOL made its Scoping Request to East Lothian Council on 23 August 2021, and the Scoping Opinion was therefore due for issue on or before 27 September 2021.

1.4 The EIA Regulations require that the planning authority consult the 'consultation bodies' before issuing a Scoping Opinion. These are: any adjoining planning authority, where the development is likely to affect land in their area (Marine Scotland were consulted); NatureScot, Scottish Water (SW), Scottish Environment Protection Agency (SEPA), and Historic Environment Scotland. No other public body was considered likely to have such an interest and accordingly no other public body was consulted. Internally, consultation was also carried out with relevant departments within East Lothian Council.

1.5 This is the Scoping Opinion adopted by East Lothian Council as to the scope and information to be provided in support of a proposed application for OnTW as described in the Scoping Request made by ICOL to ELC on 23 August 2021. If there is a material change in circumstances prior to decision on the related application, information not mentioned in the Scoping Opinion may require to be included. The issuing of this Scoping Opinion also does not

prevent the planning authority from requesting further information at a later stage as set out in section 17 (11) of the EIA Regulations.

1.6 No indication of the likely success of an application for planning permission for the proposed development is implied in the expression of this opinion.

2. General Environment Statement (ES) Issues

Onshore/offshore ES

2.1 The Inchcape project will broadly comprise two parts. These are the main offshore works to be consented by Scottish Ministers, and the associated/ancillary onshore works to be consented by ELC. It is the Council's view that the onshore and offshore works are an integral part of the main project, which consists of the offshore Inch Cape Wind Farm and the onshore transmission works. Approval should therefore only be considered once the EIA for the whole project has been carried out. The offshore works, as varied, were accompanied by EIA information where required. These offshore works now have consent, subject to any remaining discharging of conditions.

2.2 The EIA information for the offshore works is therefore complete, barring any further work required to discharge conditions. This information must be made available for reference by members of the public and/or decision maker during the period of consultation and decision on this application. Clear reference should therefore be made within the submitted EIAR as to where this information can be found.

Description of development

2.1. The EIA regulations require that a description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, biodiversity, land, soil (including erosion, compaction, sealing), water, air, climate (including greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage including architectural and archaeological aspects, and landscape.

2.2. The ER should include a description of the likely significant effects of the development on the environment resulting from:

- the construction and existence of the development including decommissioning
- the use of natural resources in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources
- the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste
- risks to human health, cultural heritage or the environment for example due to accidents or disasters
- cumulative effects with other existing or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources
- the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change

- the technologies and substances used

Qualifications

2.4 The developer must ensure that the ER is prepared by competent experts. The ER should be accompanied by a statement outlining the relevant qualifications and experience of those involved in preparing the study.

Administrative issues

2.5 Developers should be aware that on receipt of a planning application, the Council will require to make the new EIAR available for public viewing and also to place it on its website. The document should therefore be submitted in a suitable electronic format, preferably as a pdf, as well as in hard copy. If the ER is less than 10MB it should be submitted as one document. If not, it would be helpful if it is split into parts of less than 10MB each, with the parts clearly labelled so it is obvious what each contains. If the EIAR contains any confidential information, such as the location of breeding sites of rare birds, this should be submitted as a separate document and clearly marked as confidential. The Council must comply with data protection legislation, and therefore no personal information that the Council is unable to publish should be included in the EIAR. This includes photographs of people who would be recognisable from the photograph.

2.6 In any related application for planning consent, the developer should clearly state whether any part of the EIAR (such as the mitigation, construction methods, &c) forms part of the application for consent.

2.7 For the hard copy, diagrams and photographic material should be reproduced at the appropriate size. It would be appreciated however if any large sections of text are presented on portrait A4 sheets without the use of columns. Paragraphs should be numbered.

2.8 Scottish Government Planning Circular 1/2017[1] notes that the Non-Technical summary is particularly important for ensuring the public can comment fully on the EIAR. It should set out the main findings of the EIA report in accessible, plain English. It should be noted that the average reading age in Scotland is 11 years[2]; as this is an average many people will be below this level. This proposal is located close to some of the most deprived areas of East Lothian, including areas within the most deprived 20% of areas of Scotland according to the Scottish Index of Multiple Deprivation[3]; low reading age is linked to social deprivation. It is therefore particularly important that care is taken over language used in the Non-Technical summary.

[1] Available at http://www.gov.scot/Resource/0051/00518122.pdf

[2] Scottish Health Council, see http://www.scottishhealthcouncil.org/patient__public_participation/participation_toolkit/written_information.aspx#.WZ7rxmeWyLg

[3] Scottish Index of Multiple Deprivation, see mapping at http://simd.scot/2016/

3. Description of the development

3.1. The EIA regulations require a description of the development comprising information on the site, design, size and other relevant features of the development. The description should be repeated in the new EIAR and not be done by reference to the original EIAR or planning application. The main characteristics of the operational phase of the development should be set out, including likely maintenance activity, landscaping and lighting. An estimate of residues and emissions should be included. This should include noise and vibration, any emissions to air, light, heat, pollutants, electro-magnetic field emissions, including construction, operational, and as far as possible decommissioning phases, as in the original application.

3.2. The description should include information on the offshore element, either within the EIAR for the onshore works or by reference to a publicly available EIAR for the offshore works.

3.3. The expected lifetime of the development should be included along with a Decommissioning Statement.

3.4. SEPA give general advice Scoping with regard to what should be included in the description. This advice is included within Appendix 1 and any relevant information noted there should be included in the description.

4. Reasonable Alternatives

4.1. The EIA regulations require a description of the reasonable alternatives studied by the developer, relevant to the proposed project, and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of environmental effects. The alternatives should cover any alternatives to the project as a whole, for example any other locations within the UK or elsewhere that were considered. As this is a Regulation 11 application, it is unlikely that there is any reasonable alternative considered, however, if any other alternatives were studied, this information should be included.

5. Baseline

5.1. The EIA regulations require a description of the relevant aspects of the current state of the environment (the baseline scenario) and an outline of its likely evolution without the project, as far as is reasonably foreseeable using relevant available information and scientific knowledge. The Scoping Report notes that ICOL have considered the contents of the 2018 EIAR alongside a review of the current baseline environment, legislation, policies, guidance and current assessment methods to consider any changes that may have occurred since then. Where changes have happened, their experts have considered where issues should be scoped into the new assessment.

6. Likely significant effects

6.1. The description of the likely significant effects should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long term, permanent and temporary, positive and negative effects of the development. The description should take into account the environmental protection objectives established at European Union or Member State level which are relevant to the project, in particular those relevant to protection of Natura 2000 sites.

6.2. The Decision Notice for the original planning application 18/00189/PPM adopted the findings of the Scottish Government's Report of the call-in inquiry. The Reporter (here and where noted below, 'the Reporter' refers to the Reporter to this Inquiry) states that "aside from landscape and visual impact I have identified no other significant environmental effects". As

the proposal has not change, the only aspects that would require to be reported in the new EIAR are:

(a) landscape and visual effects; and
(b) any impacts on receptors where there have been changes in the baseline or methods of assessment such that there are likely to be significant effects.

6.3. The original EIAR included information on topics other than landscape and visual effects. This was because it had been thought that there could be a significant effect on other receptors, however further study through EIA showed there was not, which has been accepted by the Reporter as above. The original EIAR therefore includes the detailed information that now allows for some issues to be scoped out. For some aspects where cumulative impact with the onshore works related to the Seagreen 1A windfarm was a potential issue, information available in the EIAR for the onshore works related to Seagreen 1A has allowed issues to be Scoped out. The new EIAR should include a brief list of issues which have been Scoped out to show that they have been considered, and a reference to where the more detailed explanation of the reason can be found. This will allow the EIAR to focus on the significant effects of the proposal.

6.4. The Scoping Report submitted by ICOL considers changes to policy and legislation and the baseline. This has been taken into account. This Scoping Opinion considers the EIA factors set out in legislation with regard to whether or not information is required in the new EIAR.

Population and human health

6.5. The original EIAR considered noise and vibration impacts from construction and traffic movements. Operational sound was also scoped in. Embedded mitigation includes a noise barrier and control of construction activities through a CEMP to ensure noise levels meet the required threshold limits during construction. Further mitigation is provided through a Construction Noise Management Plan and Noise Impact Assessment being agreed, leading to Condition 4c and Condition 5 being attached to planning permission in principle.

6.6. Assessment showed the adopted noise and vibration limits were not expected to be exceeded for construction or from additional traffic. For the operational phases, embedded mitigation includes enclosures around some of the components to provide noise attenuation, as well as a Landscape Mitigation plan, which includes the use of earth bunds. Predicted noise levels were generally below background levels, but were predicted to be no more than 5dB above background, and were not significant. The Reporter agreed with this conclusion. Cumulative assessment was also undertaken with developments at Blindwells, Longniddry South and change of use of a former gas holder to car wash on Edinburgh Road, and no significant effects were found.

6.7. Since the original application, a proposal for a substation related to Seagreen 1A has come forward. The Council is satisfied that the cumulative impact assessment for noise can be scoped out of the EIAR as:

- The cumulative assessment for the EIAR would repeat the methodology and conclusions of the Seagreen noise chapter;

- The operational noise from the ICOL site is subject to Planning Condition 5 (decision notice attached) which state that the 35dB LAr,Tr limit would apply to the cumulative assessment for the operational noise from the ICOL site and the Seagreen site

6.8. No other impacts on population are expected to be significant and this topic can be scoped out.

Biodiversity

6.9. Through the Scoping process for the original EIAR both ELC and SNH (now NatureScot) considered the site and locality in general had negligible to low biological value and ecological sensitivity. The 2018 EIA therefore focussed on potential impacts on habitat and qualifying species of the Firth of Forth SPA and the Outer Firth of Forth and St Andrews Bay Complex SPA and any other relevant European Sites. The SEA was accompanied by Habitats Regulation Appraisal which concluded no adverse effect on any European site, alone or in combination with other plans or projects. Therefore, the effect on European Sites was not considered significant. The same was found for cumulative impacts of disturbance to either subtidal or terrestrial habitats and hence no cumulative effects of habitat disturbance between the Offshore transmission works and the OnTW. The Reporter on the original application agreed that taking into account embedded mitigation which was secured by condition there would be no significant effects on biodiversity.

6.10. ICOLs review has not identified any change to the assessment methodology as a result of policy and legislation review. The embedded mitigation will remain in place. ICOL consider that with regard to biodiversity on the site, there are "no significant data gaps, and that comprehensive contemporary and background ecological baseline data are sufficient to complete this assessment" (Scoping Report para 36). ICOL considers there are no significant additional developments that need to be taken into account for the cumulative or in combination assessment. They consider there is no material change to the baseline, and no change is required to the 2018 EIAR impact assessment sensitivity criteria. No significant effects were identified in the 2018 EIA Report and this conclusion has not change (Scoping Report para 42). The cumulative position has been reviewed with regard to the Seagreen 1A substation. The residual cumulative effects are limited in terms of space and time, and not considered significant for habitats, protected species or birds. The only phase where concurrent activities are potentially more of a risk of causing a cumulative effect is during construction, where there is a potential disturbance of birds. Either the time of disturbance would be longer, or the space disturbed would be greater. However the effect is not considered significant (Scoping Report para 50) as the birds are habituated to sources of disturbance, construction activity for both projects is temporary, and fencing off the construction area could reduce disturbance from other sources (walkers, cyclists &c).

6.11. The Scoping Report concludes that based on review and site walkover, the findings of the original EIAR remain valid and that no significant environmental effects on biodiversity would arise from the project.

6.12. NatureScot state that provided the HRA results remain valid they are content that ecological effects are scoped out. The Council considers that the HRA remains valid as long as nothing has significantly changed on site, for example habitat, or behaviour patterns of the qualifying interests, or the nature of the development. The Council agrees that neither the biodiversity baseline nor the proposal have changed. Although the Outer Firth of Forth and St Andrews Bay

Complex is now designated SPA this was a proposed SPA at the time, so was treated in the same way as a designated site, so makes no difference with regards to the conclusions of the HRA.

6.13. As the conclusions of the HRA remain valid an there are no other significant effects impacts on Biodiversity can be Scoped out.

Land and soil

6.14. ICOL note that no objections were raised at Inquiry with regard to geology or hydrogeology. The Reporter did not identify any significant issues with regard to land or soil. The Reporter noted that mitigation (implementing a Construction Environmental Management Plan, site investigation to inform the detailed site design, and use of construction drainage systems, and a Sustainable Drainage System) is included to remove or mitigate impacts including disturbance of potentially contaminated soils, and that with this mitigation no significant effects from construction or operation are identified.

6.15. Since the previous Scoping Opinion, the Council has designated Local Geodiversity Sites through the ELLDP. This includes Cockenzie and Port Seton Local Geodiversity Site to the northeast of the application site and Prestonpans Local Geodiversity Site to the SW. These sites are outwith the application site and the Reporter did not consider there would be a significant effect on these sites. There will be no change in the impact of the proposal on these sites. Further assessment is therefore not needed.

6.16. The Council's contaminated land officer is satisfied with the conclusion that the topic related to contaminated land issues can be scoped out of further assessment. The conditions relating to contaminated land for the existing application would be relevant to any new application submitted.

6.17. Impacts on land and soil are scoped out.

Water

6.18. SEPA state that that with respect to flood risk, they accept the Flood Risk Assessment is still valid. However, due to the ongoing cyber-attack which they suffered, their advice is based on limited information that is accessible to them. They therefore recommend that the Council's local flood office is contacted with regards to this application. The Council's flood officer has been consulted and notes having reviewed the documents that "the Bankton Adit (culverted watercourse) is not mentioned. However, there is a requirement for a Flood Risk Assessment to be submitted in any future detailed planning application. Also, the Reporter's Recommended Condition 10 states that prior to any development any culverted watercourses shall have to be located. We are comfortable with such a condition which also includes the provision of SuDS Design details. Any proposed buildings will also be subject to current projections for sea level rise and the Report confirms that this is the case." The Council therefore accepts that flood risk is scoped out of EIA though further flood risk information may be required.

6.19. SEPA include details of regulatory requirements and good practice advice in their response, which is included in Appendix 1 below. They have no further comment on private water supplies and do not expect their advice on injection of pulverised fuel ash or other materials below the groundwater table to be required in this case. SEPA do not draw attention to

anything specific in their Standing Advice on Scoping which has not been included; their advice is included in Appendix 1 and should be considered.

6.20. The Reporter for the original application noted that SEPA had raised concerns over the proposed gravity outfall to the Firth of Forth, but that with mitigation of requiring further details of the outfall and of the proposed Sustainable Urban Drainage scheme, significant effects would be avoided. This condition would remain on the revised application.

6.21. Marine Scotland have not responded to consultation.

6.22. Scottish Water have responded stating that there is currently sufficient capacity in the Castle Moffat Water Treatment Works to service the development. However, further investigations may be required to be carried out once a formal application has been submitted to them. There is currently sufficient capacity for a foul only connection in the Edinburgh PFI Waste Water Treatment works to service the development. However, further investigations may be required to be carried out once a formal application is submitted to them. The applicant should be aware that Scottish Water is unable to reserve capacity at their water and/or waste water treatment works for the proposed development. Once a formal connection application is submitted to Scottish Water after full planning permission has been granted, they will review the availability of capacity at that time and advise the applicant accordingly. According to Scottish Water's records, the development proposals impact on existing Scottish Water assets.

6.23. The applicant must identify any potential conflicts with Scottish Water assets and contact our Asset Impact Team via our Customer Portal to apply for a diversion. Scottish Water note that a review of their records indicates there are no Scottish Water drinking water catchments or water abstraction sources, which are designated as Drinking Water Protected Areas under the Water Framework Directive, in the area that may be affected by the proposed activity.

6.24. Scottish Water further note that for reasons of sustainability and to protect their customers from potential future sewer flooding, they will not accept any surface water connections into their combined sewer system. There may be limited exceptional circumstances where they would allow such a connection for brownfield sites only, however this will require significant justification from the customer taking account of various factors including legal, physical and technical challenges. In order to avoid costs and delays where a surface water discharge to our combined sewer system is anticipated, Scottish Water states that the developer should contact them at the earliest opportunity with strong evidence to support he intended drainage plan prior to making a connection request. Scottish Water provide general notes which are included at Appendix 3 and should be referred to for advice. However Scottish Water do not request that any further assessment or information is given in the new EIAR.

6.25. No other effects on water have been identified and therefore impacts on water can be Scoped out.

Air

6.26. Potential air quality impacts reported in the original EIAR related to the construction stage as no direct effects were expected in the operational stage. The original EIAR considered amenity impacts from dust, health effects from construction and decommissioning and vehicle movements, health effects from release of combustion pollutants, and cumulative impacts of dust, combustion or other airborne particles. For dust, potential receptors included nearby residential areas. Embedded mitigation included a dust management plan. Cumulative

impacts with Blindwells residential development were considered. The original EIAR concluded that with the dust management plan and good practice mitigation measures there would be no significant effects.

6.27. The Inquiry Reporter agreed that the potential effects associated with the release of dust during construction and vehicular emissions during both construction and operation of the OnTW are 'not significant' with the adoption of a range of good practice mitigation measures and that the potential short term interactive effects with Blindwells New Settlement of general disturbance and nuisance were not significant with mitigation. The embedded mitigation was secured by Condition 4 requiring a CEMP which covers air quality and dust, and Condition 6 which required a traffic management plan.

6.28. Since the application was made, an application (21/00290/PPM) has been made for a substation related to Seagreen 1A offshore windfarm. The Scoping Report states that the baseline in terms of receptors has not materially altered, while baseline air quality has improved, though longer term predictions may need to take into account the aberration caused by Covid-19 lockdowns. Air quality assessment methodology guidance remains similar. The Scoping Report states that cumulative impacts will not be significant.

6.29. The Councils Senior EHO agrees that there are no significant effects which are not covered by condition. Impacts on Air can therefore be Scoped out.

Cultural Heritage

6.30. Direct effects on cultural heritage were scoped out of the original EIAR as the construction of Cockenzie Power Station on the site had removed any receptors. Indirect or 'setting' effects were Scoped in. A minor adverse impact was found on Cockenzie Harbour, as there are direct views to the west with no screening from buildings or vegetation. However, the original EIAR considered the main focus of the historic harbour was internal or out to sea, and with embedded mitigation, much of the inter-visibility was removed. The original EIA therefore found there was no significant residual effects on setting on any of the identified receptors. Cumulative effects with Blindwells were considered however no significant interactions were found.

6.31. The Reporter agreed with Historic Environment Scotland that the Prestonpans Battlefield should be a highly sensitive receptor. However, the Reporter considered that the overall assessment that the proposal would not obscure or prevent an appreciation of features of landscape which add to the interpretation or appreciation of the battlefield remained valid, and there would be no significant adverse effect on the battlefield. The Reporter was satisfied that the site did not form part of the historic setting of Cockenzie harbour and the focus of its setting was contained within the immediate harbour area and sea frontage. The reporter did not dispute the findings of the EIAR that effects on other cultural heritage assets in the area were negligible, and that subject to appropriate mitigation and given the proposal does not affect any listed building and is not with[in] the Conservation Area, found no conflict with the statutory protection afforded to listed buildings and conservation areas. The Scoping Report notes that the ELLDP 2018 has now been adopted, however policy and legislation regarding cultural heritage remains largely unchanged. Embedded mitigation includes screening of the substation with vegetation and where appropriate, bunds. The Scoping Report does not identify any new archaeological or cultural heritage receptors.

6.32. The Scoping Report notes that embedded Landscape Mitigation proposed in Chapter 8 of the EIA report as transposed into Conditions 1 and 14 of the planning permission in principle is relevant. The EIAR for the Seagreen application

6.33. The Scoping Report has reviewed cumulative impact taking into account the application (21/00290/PPM) for a substation related to Seagreen 1A offshore windfarm. The EIAR for the Seagreen substation found that there was a neutral effect cumulatively on the setting of archaeological and cultural heritage assets associated with Preston Links Colliery, and a low to negligible impact on the setting of Cockenzie Harbour. The Council accepted this conclusion, noting in the report on the application with regard to cultural heritage and archaeology that "During the construction phase no likely significant effects have been identified in the absence of mitigation, therefore no mitigation is required. During the operation phase no likely significant effects have been identified."

6.34. HES have not responded. The Council's cultural heritage adviser has no comment. The Council agrees that effects on the cultural heritage can be scoped out.

Material assets

6.35. ELC Roads consider that the baseline has not changed with respect to physical changes or policy. They note that since submission of the 2018 EIA report a planning application has been received for Seagreen 1A offshore windfarms onshore substation, and that the change to the cumulative position is reflected in the Scoping Report. The baseline in terms of traffic flows and road network was discussed with the applicant's consultant prior to preparation of the Scoping Report. Those discussions are reflected and expanded upon at some length in Chapter 11 of the Scoping Report. The Council agrees with the conclusion that the baseline position set out in the 2018 EIA report remains robust and does not require re-assessment. There are no changes to the traffic and transport aspects of the development compared with the previous submission. The Council therefore concurs with the statement in the Scoping Report that 'conclusions regarding the effect of the OnTW on traffic and transport reported in the 2018 EIA Report do not require amendment".

6.36. With regard to cumulative impacts, a full assessment has been provided within the Scoping Report that considers the cumulative impact of the proposed Seagreen 1A works (in addition to the previously considered development at Blindwells). The Council agrees with the conclusions that peak cumulative traffic flows will not have a significant residual effect on severance, driver delay, pedestrian amenity, pedestrian delay and accidents and safety. There are no significant effects on receptors and no addition mitigation is required above and beyond embedded mitigation which is detailed Section 11.4 of the 2018 EIA Report.

6.37. Scottish waters water and drainage system is considered under 'water'.

6.38. No other significant effects on material assets have been identified and material assets are scoped out.

Landscape and Visual

6.39. Landscape and visual effects were considered to be significant and this should be reported in the new EIAR. NatureScot responded reiterating their previous Scoping advice (See Appendix A). This should be taken into account.

6.40. The submitted scoping opinion makes reference to Ash 1998 Landscape character area study. The EIAR should be updated to take account of the new NatureScot landscape character study. Details are available on their website Landscape Character Assessment in Scotland. Section 47 of the submitted Scoping Report refers to the landscape designation of Areas of Great Landscape Value. As previously advised this has now been superseded by Special Landscape areas (SLA). The SLAs have been adopted in ELLDP. The EIAR should take account of this.

6.41. The main changes to the baseline since 2018, in terms of cumulative landscape and visual impact are the proposals to develop a substation to the southwest of the ICOL substation site. The details of the proposed development for Seagreen 1A substation and ancillary electric works can be viewed on ELC planning portal using planning reference 21/00290/PPM. ELCs landscape officer provided comments on this application, including a conceptual landscape plan to help mitigate for the significant landscape and visual impact of the in combination developments. Subject to agreement from all parties, the community, the developers and ELC, the landscape officer believes that planting the existing and proposed earth bunding on both sites will help provide mitigation for the adjacent development. The landscape officer states that bunding and landscape planting could be achieved outwith the redline boundary of the Seagreen 1A site (see Figure 1 below and Appendix 2). The proposed mitigation would be on land managed by ELC and the landscape officer believes there is provisional agreement on this from ELC Amenity Services.

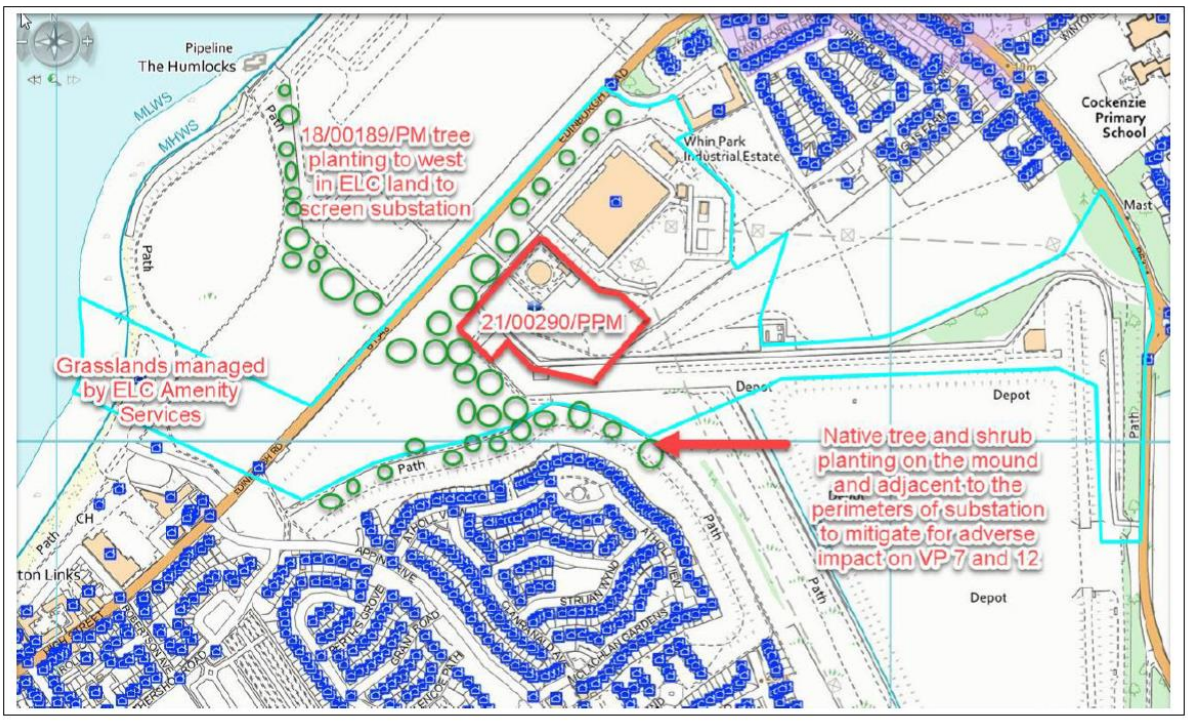

Figure 1 ELC Proposed Mitigation Seagreen 1A.

6.42. The Scoping Report Appendix 8A Figure 8.2 Landscape Designation shows agreed viewpoints (these were agreed by email communications with Mary Fisher, CMLI of Stephenson Halliday)

4, 5, 6, 10 and 11 to be included in an updated LVIA study. Cumulative in combination views with the adjacent substation development 21/00290/PPM views are included for the aforementioned viewpoints in the EIAR.

6.43. Effects on Landscape effects are considered significant and are scoped in.

Climatic factors

6.44. The Scoping Report for the original application did not request that climate emissions be considered in the EIAR. Since then, the Scottish Government and East Lothian Council have declared a climate emergency, the UK has signed the Paris Agreement, and the Scottish Government has introduced new targets for reductions of climate forcing gases. The IPCC has published Assessment Report 6: The Physical Science Basis, which makes it clear that the world will have to make deeper cuts, faster, than was previously thought. The Council has consulted on Climate Evolution, a plan intended to ensure the major area of development around Tranent/Prestonpans/Cockenzie Port Seton and Longniddry can become a national example of climate friendly development. This site falls within the Climate Evolution Area. It is likely a decision will be taken on this draft strategy before the submission of the Regulation 11 application.

6.45. Climate overall is a worldwide receptor, on which any proposal however locally significant is likely to have a negligible effect. However, the receptor is sensitive in that it has already exceeded a threshold where change is inevitable. Addressing climate change is likely to require many actions that are a very small proportion of the overall action needed.

6.46. It is likely the works will have some emissions of climate forcing gas in construction. The EIAR should include information on the climate impacts of the proposal, in construction, operation and decommissioning. This should include:

- What the most important climate change mitigation issues are for the development, considering circular economy, use of materials and what happens to them after use, soil and vegetation removal or disturbance, and traffic and transport emissions.
- Any alternatives to how or where the proposal is constructed and how this would affect the emissions
- How the proposal aligns with the East Lothian Climate Change Strategy, the Scottish Government Climate Change Strategy including the Update, and Scottish emission reduction targets.

6.47. Therefore, although the project overall (including the offshore windfarm) is expected to reduce climate change emissions, the climate forcing emissions of the onshore works should be included in the new EIAR. Any proposals for mitigating greenhouse gas emissions should be included.

6.48. Effects on climate are potentially significant and are scoped in.

7. Mitigation and Monitoring

7.1. A description of any measures envisaged preventing, reducing and where possible offset any significant adverse effects on the environment should be given. This should include the table

of embedded mitigation, and any mitigation proposed for landscape and visual or climate related effects. A monitoring plan for mitigation measures should also be included.

8. Information gaps

8.1. An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant or appellant in compiling the required information should be given, including any data that has not been available.

Appendix 1 – Relevant responses in detail

LANDSCAPE AND VISUAL

East Lothian Council Landscape Officer

The submitted scoping opinion makes reference to Ash 1998 Landscape character area (LCA) study. I am not clear if the Nature Scot LCA study 2019 now supersedes Ash 1998. If this is the case then we would recommend that the ES should be updated to take account of the Nature Scot LCA, the details of which are available on their website ; Landscape Character Assessment in Scotland | NatureScot

Section 47 of the submitted scoping opinion, refers to the landscape designation of AGLV. As previously advised this has now been superseded by Special Landscape areas (SLA). The SLA have been adopted in ELLDP. We would recommend that the ES should be updated to take account of this.

The main changes to the baseline since 2018, in terms of cumulative landscape and visual impact are the proposals to develop a substation to the southwest of the ICOL substation site. The details of the proposed development for Seagreen 1A substation and ancillary electric works can be viewed on ELC planning portal using planning reference 21/00290/PPM.

I have attached a copy of landscape comments on adjacent substation development 21/00290/PPM for your information. In particular we draw your attention to Figure 11, which shows a conceptual landscape plan to help mitigate for the significant landscape and visual impact of the in combination developments. Please see attached jpeg titled : Mitigation planting out with site. Subject to agreement from all parties, the community, the developers and ELC, we believe that planting the existing and proposed earth bunding on both sites will help provide mitigation for the adjacent development.

I refer to attached jpeg titled: landscape mitigation 1 of 2 and 2 of 2 [Appendix 2]. [Redacted] and [redacted] have the background on what was discussed and agreed at a management level. The general gist of the agreement is that the bunding and landscape planting could be achieved out with the redline boundary of the site. [we would strongly recommend that you consult ELC Amenity Services] regarding previous agreements to provide 4m high mounds, to be planted with trees and shrubs to the west of the redline boundary. The proposed landscape mitigation will be on land managed by ELC. The previous LVIA generated visuals of these proposals at one year and in year fifteen post construction.

We refer to Appendix 8A, Figure 8.2 landscape designation in the submitted scoping opinion. This plan shows the agreed viewpoints (these were agreed by email communications with [redacted] CMLI of Stephenson Halliday) 4, 5, 6, 10 and 11 to be included in an updated LVIA study. We require that cumulative in combination with the adjacent substation development 21/00290/PPM views are included for the aforementioned viewpoints in the ES.

NatureScot's Landscape and Visual Advice 2018

We broadly welcome the proposed scope of the LVIA. We met on site with Red Rock Power Limited and John Flannery, landscape consultant, to discuss the project and certain aspects of the LVIA.

At the site meeting we highlighted the visual prominence of the site in a key location between the Cockenzie and Prestonpans communities and the potential for the development to have adverse impacts on the local amenity of existing open spaces and also including the accessible points on the coastal fringes and from the Edinburgh Road.

We advised that, in order to reduce landscape and visual impacts, the siting and design approach for the proposed infrastructure, including its various buildings should be strongly design led and informed closely by careful landscape and visual assessment and consideration of placemaking. The design relationship of building proposals to existing and surrounding built form and the sequential experience along the Edinburgh Road was also discussed. We highlighted the importance of clear communication in the EIA of the scale, massing and principles of external treatment of the buildings, and advised that these matters should be clearly communicated in sufficient detail in submitted drawings and supporting visualisations. We also proposed that due to the nature and location of the proposal, we consider that a design statement document outlining these matters should support any application.

In observing the very slow growth rates of existing trees and woodlands on and around the site, we emphasised the need to be realistic in the LVIA and supporting visualisations about growth rates, and therefore the role of woodland planting as a form of landscape and visual impact mitigation. We advised that detailed specifications for the establishment and long term management should be put forward in the EIA, if planting as mitigation is to be utilised.

We also discussed aspects of integration of the proposal into the landscape and the issues of visual screening of built form, particularly from the west, including views from closer public spaces and from along the coastal edge of Prestonpans. We highlighted sensitivities in views from these locations, including the John Muir Way, and the potential role of the existing mounding on Preston Links, and on the Cockenzie side, to integrate or screen built form. Opportunities for off-site mitigation through modification and enhancement of surrounding landforms, planting and open spaces could usefully be explored. Given the recently improved change of setting/ amenity for the community open space at Preston Links (since removal of the power station) we also highlighted the importance of ensuring the proposals seek to maintain positive amenity for this important and strategically located open space. The potential for linear bunding, security fencing, lighting and planting strips around the works to impact adversely and contrast with the distinctive rounded mounds and clustered planting of Preston Links was noted.

With regards the proposed viewpoints we discussed these in general terms. Given the changed location of the proposal compared with the previous proposal for these works we suggest that a re-

appraisal of the submitted viewpoints will be necessary. We advise that selection of appropriate viewpoints should be based on identified likely significant impacts, which should be ascertained from study of refined draft layout proposals which have been modelled and appraised through more detailed ZTVs and specific wirelines of proposed built form. We highlighted at the site meeting that on the basis of draft layout proposals shown, viewpoints from further distances from the south may no longer be needed due to the role of intervening structures and vegetation. We suggested that further attention should be paid towards potential impacts from more open locations including the existing open spaces around the site and paths and publically accessible locations on the edge of Prestonpans.

We would be happy to advise further on viewpoint selection, or any other aspect of the LVIA, if this is required.

SEPA – response

Thank you for consulting SEPA on the above Scoping opinion.

Thank you for also providing us with a copy of our response (dated 9 August 2017) which we made to an earlier scoping consultation. We did not have access to this following the cyber-attack which we were subject to last year. We are subsequently unable to confirm if we were consulted on the 2018 Environmental Impact Assessment (EIA). However, we have reviewed the information provided with this consultation and have the following comments to make. Please also refer to our Standard Scoping advice attached, we understand that many aspects may be able to be scoped out of any future EIA and justification for doing so should be provided.

Flood risk

With respect to flood risk, we have reviewed the Scoping Report dated August 2021 and accept the Flood Risk Assessment (FRA) undertaken for the EIA report in 2018 is still valid. If consulted on any further application to extend the period of time, based on the information provided, we would have no objection on flood risk grounds.

Due to the ongoing Cyber Attack, our advice is based on the current (limited) information which is accessible to us. Our responses are therefore based on less detailed flood maps and in the absence of historic flood information, flood defence assets, flood studies and site history. We would strongly recommend that your local authority flood officer is contacted with regards to this application as they will hold more detailed information which SEPA is currently unable to access.

Private water supplies

Section 7.2 of the 2018 'Physical Environment Chapter 7 Hydrology, Geology and Hydrogeology' document indicates that *'ELC has confirmed that there are no private water supplies within a two kilometre radius of the Application Site'.* As such we have no further comments to make on this.

Mine Stability

The 2018 Coal Mining Risk Assessment (Appendix 7B) indicates that the 'Application Site is at Low Risk' as the shallowest worked coal seam is at depths in excess of 50 m. Paragraph 115 of Chapter 7 (2018) indicates that the 'potential magnitude of impact is assessed as Negligible' from coal mine workings. On this basis we would not expect that our standard planning advice on the injection of pulverised fuel ash (PFA) or other materials below the groundwater table will be required in this case.

Impacts to the water environment

We understand that Scottish Water have no further objection subject to the advice provided on precautions to protect drinking water and Scottish Water assets during development, which we previously raised. They have also confirmed there are no Scottish Water drinking water catchments or water abstraction sources, which are designated as Drinking Water Protected Areas under the Water Framework Directive, that may be affected by the development.

Details of regulatory requirements and good practice advice for the applicant can be found in the Regulations section of our website.

SEPA standard Scoping Comments
Appendix 1: Detailed scoping requirements

This appendix sets out our scoping information requirements. There may be opportunities to scope out some of the issues below depending on the site. Evidence must be provided in the submission to support why an issue is not relevant for this site in order **to avoid delay and potential objection.**

If there is a delay between scoping and the submission of the application then please refer to our website for our latest information requirements as they are regularly updated; current best practice must be followed.

We would welcome the opportunity to comment on the draft submission. As we can process files of a maximum size of only 25MB the submission must be divided into appropriately named sections of less than 25MB each.

1. Site layout
1.1. All maps must be based on an adequate scale with which to assess the information. This could range from OS 1: 10,000 to a more detailed scale in more sensitive locations. Each of the maps below must detail all proposed upgraded, temporary and permanent site infrastructure. This includes all tracks, excavations, buildings, borrow pits, pipelines, cabling, site compounds, laydown areas, storage areas and any other built elements. Existing built infrastructure must be re-used or upgraded wherever possible. The layout should be designed to minimise the extent of new works on previously undisturbed ground. For example, a layout which makes use of lots of spurs or loops is unlikely to be acceptable. Cabling must be laid in ground already disturbed such as verges. A comparison of the environmental effects of alternative locations of infrastructure elements, such as tracks, may be required.

2. Engineering activities which may have adverse effects on the water environment
2.1. The site layout must be designed to avoid impacts upon the water environment. Where activities such as watercourse crossings, watercourse diversions or other engineering

activities in or impacting on the water environment cannot be avoided then the submission must include justification of this and a map showing:

a) All proposed temporary or permanent infrastructure overlain with all lochs and watercourses.

b) A minimum buffer of 50m around each loch or watercourse. If this minimum buffer cannot be achieved each breach must be numbered on a plan with an associated photograph of the location, dimensions of the loch or watercourse and drawings of what is proposed in terms of engineering works.

c) Detailed layout of all proposed mitigation including all cut off drains, location, number and size of settlement ponds. 2.2. If water abstractions or dewatering are proposed, a table of volumes and timings of groundwater abstractions and related mitigation measures must be provided.

2.3. Further advice and our best practice guidance are available within the water engineering section of our website. Guidance on the design of water crossings can be found in our Construction of River Crossings Good Practice Guide.
2.4. Refer to our flood risk Standing Advice for advice on flood risk. Watercourse crossings must be designed to accommodate the 0.5% Annual Exceedance Probability (AEP) flows, or information provided to justify smaller structures. If it is thought that the development could result in an increased risk of flooding to a nearby receptor then a Flood Risk Assessment must be submitted in support of the planning application. Our Technical flood risk guidance for stakeholders outlines the information we require to be submitted as part of a Flood Risk Assessment. Please also refer to Controlled Activities Regulations (CAR) Flood Risk Standing Advice for Engineering, Discharge and Impoundment Activities.

3. Disturbance and re-use of excavated peat and other carbon rich soils

3.1. Scottish Planning Policy states (Paragraph 205) that "Where peat and other carbon rich soils are present, applicants must assess the likely effects of development on carbon dioxide (CO2) emissions. Where peatland is drained or otherwise disturbed, there is liable to be a release of CO2 to the atmosphere. Developments must aim to minimise this release."

3.2. The planning submission must a) demonstrate how the layout has been designed to minimise disturbance of peat and consequential release of CO2 and b) outline the preventative/mitigation measures to avoid significant drying or oxidation of peat through, for example, the construction of access tracks, drainage channels, cable trenches, or the storage and re-use of excavated peat. There is often less environmental impact from localised temporary storage and reuse rather than movement to large central peat storage areas.

3.3. The submission must include:

a) A detailed map of peat depths (this must be to full depth and follow the survey requirement of the Scottish Government's Guidance on Developments on Peatland - Peatland Survey (2017)) with all the built elements (including peat storage areas) overlain to demonstrate how the development avoids areas of deep peat and other sensitive receptors such as Groundwater Dependent Terrestrial Ecosystems.

b) A table which details the quantities of acrotelmic, catotelmic and amorphous peat which will be excavated for each element and where it will be re-used during reinstatement. Details of the proposed widths and depths of peat to be re-used and how it will be kept wet permanently must be included. 3.4. To avoid delay and potential objection proposals must be in accordance with Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and Minimisation of Waste and our Developments on Peat and Off-Site uses of Waste Peat.

3.5. Dependent upon the volumes of peat likely to be encountered and the scale of the development, applicants must consider whether a full Peat Management Plan (as detailed in the above guidance) is required or whether the above information would be best submitted as part of the schedule of mitigation.

3.6. Please note we do not validate carbon balance assessments except where requested to by Scottish Government in exceptional circumstances. Our advice on the minimisation of peat disturbance and peatland restoration may need to be taken into account when you consider such assessments.

4. Disruption to Groundwater Dependent Terrestrial Ecosystems (GWDTE)
4.1. GWDTE are protected under the Water Framework Directive and therefore the layout and design of the development must avoid impact on such areas. The following information must be included in the submission:

a) A map demonstrating that all GWDTE are outwith a 100m radius of all excavations shallower than 1m and outwith 250m of all excavations deeper than 1m and proposed groundwater abstractions. If micro-siting is to be considered as a mitigation measure the distance of survey needs to be extended by the proposed maximum extent of micro-siting. The survey needs to extend beyond the site boundary where the distances require it.

b) If the minimum buffers above cannot be achieved, a detailed site specific qualitative and/or quantitative risk assessment will be required. We are likely to seek conditions securing appropriate mitigation for all GWDTE affected. 4.2. Please refer to Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems for further advice and the minimum information we require to be submitted.

5. Existing groundwater abstractions
5.1. Excavations and other construction works can disrupt groundwater flow and impact on existing groundwater abstractions. The submission must include:

a) A map demonstrating that all existing groundwater abstractions are outwith a 100m radius of all excavations shallower than 1m and outwith 250m of all excavations deeper than 1m and proposed groundwater abstractions. If micro-siting is to be considered as a mitigation measure the distance of survey needs to be extended by the proposed maximum extent of micro-siting. The survey needs to extend beyond the site boundary where the distances require it.

b) If the minimum buffers above cannot be achieved, a detailed site specific qualitative and/or quantitative risk assessment will be required. We are likely to seek conditions securing appropriate mitigation for all existing groundwater abstractions affected.

5.2. Please refer to Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems for further advice on the minimum information we require to be submitted.
6. Forest removal and forest waste 6.1. Key holing must be used wherever possible as large scale felling can result in large amounts of waste material and in a peak release of nutrients which can affect local water quality. The supporting information should refer to the current Forest Plan if one exists and measures should comply with the Plan where possible.

6.2. Clear felling may be acceptable only in cases where planting took place on deep peat and it is proposed through a Habitat Management Plan to reinstate peat-forming habitats. The submission must include:
a) A map demarcating the areas to be subject to different felling techniques.
b) Photography of general timber condition in each of these areas.

c) A table of approximate volumes of timber which will be removed from site and volumes, sizes of chips or brash and depths that will be re-used on site.

d) A plan showing how and where any timber residues will be re-used for ecological benefit within that area, supported by a Habitat Management Plan. Further guidance on this can be found in Use of Trees Cleared to Facilitate Development on Afforested Land – Joint Guidance from SEPA, SNH and FCS.

7. Borrow pits 7.1. Scottish Planning Policy states (Paragraph 243) that “Borrow pits should only be permitted if there are significant environmental or economic benefits compared to obtaining material from local quarries, they are time-limited; tied to a particular project and appropriate reclamation measures are in place.” The submission must provide sufficient information to address this policy statement.

7.2. In accordance with Paragraphs 52 to 57 of Planning Advice Note 50 Controlling the Environmental Effects of Surface Mineral Workings (PAN 50) a Site Management Plan should be submitted in support of any application.

7.3. The following information should also be submitted for each borrow pit:

a) A map showing the location, size, depths and dimensions.

b) A map showing any stocks of rock, overburden, soils and temporary and permanent infrastructure including tracks, buildings, oil storage, pipes and drainage, overlain with all lochs and watercourses to a distance of 250 metres. You need to demonstrate that a site specific proportionate buffer can be achieved. On this map, a site-specific buffer must be drawn around each loch or watercourse proportionate to the depth of excavations and at least 10m from access tracks. If this minimum buffer cannot be achieved each breach must be numbered on a plan with an associated photograph of the location, dimensions of the loch or watercourse, drawings of what is proposed in terms of engineering works.

c) You need to provide a justification for the proposed location of borrow pits and evidence of the suitability of the material to be excavated for the proposed use, including any risk of pollution caused by degradation of the rock.

d) A ground investigation report giving existing seasonally highest water table including sections showing the maximum area, depth and profile of working in relation to the water table.

e) A site map showing cut-off drains, silt management devices and settlement lagoons to manage surface water and dewatering discharge. Cut-off drains must be installed to maximise diversion of water from entering quarry works.

f) A site map showing proposed water abstractions with details of the volumes and timings of abstractions.

g) A site map showing the location of pollution prevention measures such as spill kits, oil interceptors, drainage associated with welfare facilities, recycling and bin storage and vehicle washing areas. The drawing notes should include a commitment to check these daily.

h) A site map showing where soils and overburden will be stored including details of the heights and dimensions of each store, how long the material will be stored for and how soils will be kept fit for restoration purposes. Where the development will result in the disturbance of peat or other carbon rich soils then the submission must also include a detailed map of peat depths (this must be to full depth and follow the survey requirement of the Scottish Government's Guidance on Developments on Peatland - Peatland Survey (2017)) with all the built elements and excavation areas overlain so it can clearly be seen how the development minimises disturbance of peat and the consequential release of CO2.

i) Sections and plans detailing how restoration will be progressed including the phasing, profiles, depths and types of material to be used.

j) Details of how the rock will be processed in order to produce a grade of rock that will not cause siltation problems during its end use on tracks, trenches and other hardstanding.

8. Pollution prevention and environmental management 8.1. One of our key interests in relation to developments is pollution prevention measures during the periods of construction, operation, maintenance, demolition and restoration.

8.2. A schedule of mitigation supported by the above site specific maps and plans must be submitted. These must include reference to best practice pollution prevention and construction techniques (for example, limiting the maximum area to be stripped of soils at any one time) and regulatory requirements. They should set out the daily responsibilities of ECOWs, how site inspections will be recorded and acted upon and proposals for a planning monitoring enforcement officer. Please refer to Guidance for Pollution Prevention (GPPs).

9. Life extension, repowering and decommissioning 9.1. Proposals for life extension, repowering and/or decommissioning must demonstrate accordance with SEPA Guidance on the life extension and decommissioning of onshore wind farms. Table 1 of the guidance provides a hierarchical framework of environmental impact based upon the principles of sustainable resource use, effective mitigation of environmental risk (including climate change) and optimisation of long term ecological restoration. The submission must demonstrate how the hierarchy of environmental impact has been applied, within the context of latest knowledge and best practice, including justification for not selecting lower impact options when life extension is not proposed.

9.2. The submission needs to demonstrate that there will be no discarding of materials that are likely to be classified as waste as any such proposals would be unacceptable under waste management licensing. Further guidance on this may be found in the document Is it waste - Understanding the definition of waste.

Appendix 2 – Mitigation mounding and planting in ELC managed land, agreed in principle (2018) with ELC Amenity Services Manager

90 A Landscape Mitigation Plan for the Onshore Substation has been developed as shown on *Figure 8.6*. Earth mounding up to four metres above existing ground level will be created within the perimeter of the Application Site. These are intended to help screen the Onshore Substation and to relate to the existing adjacent landforms on Preston Links. Parts of these mounds within the Application Site will be planted with a mix of mainly native species reflecting tree and shrub species identified in the surrounding area during field surveys as well as species considered to be fast growing and suitable for the site conditions.

91 It is intended, that where possible, the landscape mitigation will be implemented in advance of the main OnTW construction works, to provide early screening to this stage of the OnTW as well as to ensure that planted material can become established as early as possible to achieve the intended landscape and visual mitigation.

92 The photomontages presented on *Figures 8.7 to 8.17* illustrate the proposed earth mounding and planting which form the embedded mitigation at Year One of the operational phase and Year 15 of the operational phase of the OnTW. It is recognised that prevailing site conditions may limit or slow the development of plant stock and this is reflected in the scale of planting shown on visualisations.

93 Woodland and shrub planting will be feathered (0.75 m - 1 m) stock, planted at one metre spacing to form a dense vegetation belt. The following species are proposed for structure planting around the perimeter of the Onshore Substation.

Tree Species Mix

- Sycamore - *Acer pseuodplatanus*;
- Alder - *Alnus glutinosa*;
- Hornbeam - *Carpinus betulus*;
- Black Pine - *Pinus nigra*;
- Dwarf Pine - *Pinus mugo*;
- Goat Willow - *Salix caprea*;
- Rowan - *Sorbus aucuparia*; and
- Scots Pine - *Pinus sylvestris*.

Shrub Species Mix:

- Hawthorn - *Crateagus monogyna*;
- Broom - *Cytisys scoparius*;
- Gorse - *Ulex europaea*;
- Dog Rose - *Rosa canina*; and
- Sea Buckthorn - *Hippophae rhamnoides*.

94 As noted in *Section 8.5.2*, existing areas of mature vegetation within and immediately adjacent to the Application Site will be protected during the construction phase of the OnTW and retained in order to augment the screening that will be provided by the landscape mitigation, as shown on the Landscape Analysis plan (*Figure 8.5*).

95 The LVIA has been carried out on the basis of the landscape mitigation, including retention of existing vegetation wherever possible, all being carried out as described above.

Appendix 3 – Scottish Waters General Notes

Scottish Water asset plans can be obtained from our appointed asset plan providers:

Site Investigation Services (UK) Ltd
Tel: 0333 123 1223
Email: sw@sisplan.co.uk
www.sisplan.co.uk

Scottish Water's current minimum level of service for water pressure is 1.0 bar or 10m head at the customer's boundary internal outlet. Any property which cannot be adequately serviced from the available pressure may require private pumping arrangements to be installed, subject to compliance with Water Byelaws. If the developer wishes to enquire about Scottish Water's procedure for checking the water pressure in the area, then they should write to the Customer Connections department at the above address.

If the connection to the public sewer and/or water main requires to be laid through land out-with public ownership, the developer must provide evidence of formal approval from the affected landowner(s) by way of a deed of servitude.

Scottish Water may only vest new water or waste water infrastructure which is to be laid through land out with public ownership where a Deed of Servitude has been obtained in our favour by the developer.

The developer should also be aware that Scottish Water requires land title to the area of land where a pumping station and/or SUDS proposed to vest in Scottish Water is constructed.

Please find information on how to submit application to Scottish Water at our Customer Portal.

Next Steps:

All Proposed Developments

All proposed developments require to submit a Pre-Development Enquiry (PDE) Form to be submitted directly to Scottish Water via our Customer Portal prior to any formal Technical Application being submitted. This will allow us to fully appraise the proposals.

Where it is confirmed through the PDE process that mitigation works are necessary to support a development, the cost of these works is to be met by the developer, which Scottish Water can contribute towards through Reasonable Cost Contribution regulations.

Non Domestic/Commercial Property:

Since the introduction of the Water Services (Scotland) Act 2005 in April 2008 the water industry in Scotland has opened to market competition for non-domestic customers. All Non-domestic Household customers now require a Licensed Provider to act on their behalf for new water and waste water connections. Further details can be obtained at www.scotlandontap.gov.uk/

Trade Effluent Discharge from Non Dom Property:

Certain discharges from non-domestic premises may constitute a trade effluent in terms of the Sewerage (Scotland) Act 1968. Trade effluent arises from activities including; manufacturing, production and engineering; vehicle, plant and equipment washing, waste and leachate management. It covers both large and small premises, including activities such as car washing and launderettes. Activities not covered include hotels, caravan sites or restaurants.

If you are in any doubt as to whether the discharge from your premises is likely to be trade effluent, please contact us on 0800 778 0778 or email TEQ@scottishwater.co.uk using the subject “Is this Trade Effluent?". Discharges that are deemed to be trade effluent need to apply separately for permission to discharge to the sewerage system. The forms and application guidance notes can be found here.

Trade effluent must never be discharged into surface water drainage systems as these are solely for draining rainfall run off.

For food services establishments, Scottish Water recommends a suitably sized grease trap is fitted within the food preparation areas, so the development complies with Standard 3.7 a) of the Building

Standards Technical Handbook and for best management and housekeeping practices to be followed which prevent food waste, fat oil and grease from being disposed into sinks and drains.

The Waste (Scotland) Regulations which require all non-rural food businesses, producing more than 50kg of food waste per week, to segregate that waste for separate collection. The regulations also ban the use of food waste disposal units that dispose of food waste to the public sewer. Further information can be found at www.resourceefficientscotland.com [the Council could not access this website].

Appendix 3C

ELC Response to Scoping Opinion Queries

Section of Scoping Opinion	ELC Scoping Comment	ICOL Observation	ELC Response
Para 2.5	Requirement for hard copies of EIA Report	In the interests of sustainability and minimising climate forcing emissions, ICOL would like to avoid printing copies of the EIA Report unless necessary. As the most recent Covid-19 Regulations advise, the requirement for printed copies of EIAs is suspended until the end of March 2022.	We would seek hard copies in accordance with regulations are in force at the time of application. However, we would appreciate having one hard copy if possible as a working copy (we have found looking at visuals on site on a laptop is not always ideal).
Para 3.3	Requirement for a Decommissioning Statement	The requirement for a Decommissioning Statement is specified in condition 8 of the existing planning permission in principle (PPP). There is also reference to decommissioning in condition 6. ICOL does not therefore propose to submit a Decommissioning Statement with the Regulation 11 application, in the expectation that this will again be required by condition on any new PPP.	The Town and Country Planning (EIA) Scotland Regulations 2017 include at Schedule 4 in the description of the development: 1. A description of the development, including in particular: (a) a description of the location of the development; (b) a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases; Section 5 requires: 5. A description of the likely significant effects of the development on the environment resulting from, inter alia: (a) the construction and existence of the development, including, where relevant, demolition works. I have consulted with Keith Dingwall, Planning Service Manager on whether information on decommissioning should be included in the EIA Report, and he responded that he notes that the Reporter and Scottish Ministers were happy to impose a condition requiring decommissioning,

			without it being assessed through the EIA. Given this is for a renewal, and that we are applying the same Regulations, we accept that it does not require to be assessed in the main EIA Report.
Para 6.41	Reference to the Seagreen 1A substation application and link to documents	No EIA Report documents relating to this application (now permission) are available on the Council's website except for the planning permission, officer report, PAC report and planning statement. Can EIA Report documents be made available to ICOL if necessary to allow completion of its EIA Report?	The information is being available on the Council's website using the reference 21/00290/PPM.
Para 6.41	ELC landscape officer comments upon the Seagreen 1A application, with associated reference to Figure 1.	Commentary in this paragraph focuses on the Seagreen 1A application, with a summary of ELC Landscape Officer comments on that application (see also comments on Appendix 1 below). Except for context, the relevance of these comments to the ICOL proposed Regulation 11 application are unclear. For example, ICOL is unaware of any 'provisional agreement' with ELC Amenity Services as referenced in the final line of this paragraph – it is understood this relates to the Seagreen 1A proposal. The ICOL PPP is subject to several conditions, condition 1 of which requires the submission of further details of the substation, including location height and colour. Specifically condition 1(h) relates to landscape and visual mitigation, which must first be discussed with ELC and other stakeholders before submission for approval. ICOL is currently working on detailed designs for the substation and this will then feed into detailed landscape mitigation proposals. Further to the previous	These planting proposals relate to ICOL (and Seagreen). As stated in the Scoping Opinion, "subject to agreement from all parties, the community, the developers and ELC, the landscape officer believes that planting the existing and proposed earth bunding on both sites will help provide mitigation for the adjacent development." Following the public inquiry for the original application, Redrock and Marie Adkins and her team including Lindsay Guthrie CMLI from SLR worked with East Lothian to draft landscape mitigation. This included landscape mitigation on East Lothian Council land to the south west adjacent to the red line boundary to provide mitigation for the ICOL substation. There are two adjacent developments for electricity substations, within the same landscape area, and how they are treated is important in terms of the setting and context of the landscape. The landscape mitigation for these proposals should work together.

		discussions on landscaping and colour scheme requirements, final designs will be discussed with ELC and others, prior to submission, in the expectation that a similar conditioned requirement for such consultation will form part of any Regulation 11 planning permission.	This is relevant for cumulative landscape assessment and mitigation of the significant effects of these proposals.
Figure 1	Contents of Figure 1	This Figure is called 'ELC Proposed Mitigation – Seagreen 1A'. It is unclear what relevance this has for the ICOL Scoping Request, except to provide context for the landscape proposals associated with the Seagreen 1A PPP. However it is unclear if this plan forms part of the Seagreen 1A PPP as the documents associated with that PPP are no longer available on ELCs website. ICOL understands that Figure 1 and the commentary in para 6.41 and Appendix 1 have been included in the ELC Scoping Opinion for context only. The reference within Figure 1 to tree planting relating to permission 18/00189/PM (the ICOL PPP) is unclear. The location of this planting does not reflect that approved by the ICOL PPP, all of which is within the planning boundary. Further details of this landscape mitigation require to be finalised as required by condition 1(h) of the ICOL PPP (species, details of mounding, maintenance etc). If Regulation 11 planning permission is granted, ICOL would expect a similar requirement for this 'front-end' consultation prior to the submission of these landscape proposals. It is noted that the EIA Report for the ICOL Regulation 11 application will contain an assessment of the cumulative impacts associated with the now approved	See above. This diagram has been included with the intention that the developers of both sites (Inch Cape and Seagreen) and East Lothian Council work together for an appropriate solution for landscape mitigation. The cumulative assessment should include information on Seagreen as far as this is publicly available. The case officer will upload the information to the website once the condition has been signed off and if it is available at the time of application, it should be included.

		Seagreen 1A application, through reference to the plans approved by that PPP. To the best of our knowledge, Figure 1 does not form part of that PPP. Clarification of these points is requested.	
Appendix 1	Sets out ELC landscape officer comments on Scoping Request	Much of the commentary here is repeated within the main body of the Scoping Opinion itself, notably paragraph 6.41. A significant amount of commentary relates to the ELC Landscape Officer comments on the Seagreen 1A application. A number of referenced documents in this Appendix are missing from the Scoping Opinion e.g. reference to Figure 11 in the 4th paragraph; references to jpeg landscape mitigation 1 of 2 and 2 of 2 etc. There are references to undated discussions and agreements at 'management level' within the 5th paragraph. ICOL is unaware of what this relates to, or its relevance to the Regulation 11 Scoping Request. The statement that '*proposed landscape mitigation will be on land managed by ELC*' in the 5th paragraph is incorrect. As noted in the earlier commentary on paragraph 6.41, the landscape mitigation required for the ICOL substation will be delivered within the red line planning boundary that forms part of the existing PPP, and this is the same boundary that will be used for the Regulation 11 application. The details of that landscape mitigation will be discussed with ELC and others prior to submission of details, as required by condition 1(h) of the PPP.	See above for comments on why the Landscape Officers comments are relevant. Figure 11 referred to in the Landscape Officers comments is Figure 1 reproduced in the Scoping Opinion, which the Landscape Officer also attached as a jpeg, so that is also 'jpeg landscape mitigation'. Jpeg landscape mitigation 1 of 2 and 2 of 2 is the mitigation set out in Appendix 2 of the Scoping Opinion.
Appendix 2	Mitigation mounding and planting	The purpose of Appendix 2 in terms of the Regulation 11 Scoping Opinion is unclear. Appendix 2 is referenced in paragraph 6.41 in the context of commentary on the	See comments on paragraph 6.41 above. The tree species mix is also relevant.

		Seagreen 1A application, not the ICOL Scoping Request. Although the source and date of Appendix 2 is unclear, it does seem to relate to the ICOL site and specifically the extant PPP. It also correctly notes that the ICOL landscape mitigation will take place '*within the perimeter of the Application Site'.* Appendix 2 sets out a suggested species mix for trees and shrubs for the ICOL mitigation. ICOL will have regard to this when preparing the submissions required by condition 1(h) and Condition 14, and will consult on these further with ELC and others in advance. Confirmation is sought that the purpose of Appendix 2 is to highlight the tree and species mix ELC would like to see ICOL develop for the detailed landscape mitigation required under condition 1(h) and Condition 14, and likely to again be required as part of any Regulation 11 approval.	

Appendix 3D

Statement of Qualifications and Relevant Experience for the 2021 EIA Technical Specialists

Appendix 3D Statement of Qualifications and Relevant Experience for the EIA Technical Specialists (2021 EIA Report)

Discipline	Consultant	Company	Qualifications	Experience
Planning	Simon Herriot	Savills Ltd.	BSc (Hons) Town and Regional Planning MRTPI Savills Ltd.	Simon is a qualified town planner with 20 years' experience of work in local government and private practice. Since 2002, Simon has worked in the planning consultancy sector servicing clients throughout the UK on a wide range of planning projects. He has contributed to and managed numerous EIAs and is active across all elements of the planning spectrum from initial site feasibility studies and development plan submissions through to the submission of planning applications and appeals.
Landscape and Visual	Lindsey Guthrie	SLR Consulting	SLR Consulting MA (Hons) Geography MPhil Landscape Architecture CMLI	Lindsey has over 30 years' professional experience in the public and private sector in both the UK and overseas. She has specialised in Environmental Impact Assessment (EIA) and in particular, landscape and visual impact assessment (LVIA). Principal relevant projects include management of EIAs for several wind farm developments, and provision of specialist LVIA input to many wind farm developments throughout the UK, including single turbine developments as well as large scale wind farms consisting of over 70 turbines. Lindsey has also managed part of SLR's Landscape Team carrying out the LVIA for National Grid's North West Coast Connections project and prepared and presented evidence at over 15 public inquiries into wind farm developments and prepared Written Submissions for three Appeals. Provided policy advice in respect of the environmental impacts of on and offshore wind farm development to the Environment and Heritage Service in Northern Ireland and managed the landscape and seascape assessment for the Strategic Assessment of Offshore Windfarms for the Department of Trade and Industry (DTI). Lindsey has also managed other large multi-disciplinary EIAs, and provided specialist LVIA and landscape design input to contaminated land and waste management projects and prepared and presented evidence at several public inquires.

Discipline	Consultant	Company	Qualifications	Experience
	Mary Fisher	Stephenson Halliday	CMLI MA Landscape Architecture BSc (Hons) Combined Studies (primary subjects - Chemistry, Mathematics)	Mary has over 20 years' professional experience as a Landscape Architect. She has co-authored IEMA guidance relating to the integration of design and EIA, and Landscape Institute guidance on the use of visualisations and contributed to guidance regarding residential visual amenity assessment. Mary specialises in providing landscape and visual impact assessments and is an experienced expert witness, having provided support to Inquiry witnesses for much of her career and acted as an expert witness herself in relation to wind projects, residential development, and solar farms. Mary has prior experience relating to onshore substations for offshore wind farms – including Seagreen (Tealing substation) and Hornsea 3 and she has worked on major infrastructure projects including Sizewell C, Heathrow West and A1 dualling. Her work also encompasses EIA management and EIA due diligence for large scale housing and commercial sites.
Climatic Factors	Tom Dearing	RPS	CEnv MIEMA BA (Hons) Geography MSc Environmental Consultancy	Tom has 11 years' experience of undertaking climate change assessment in EIA for a variety of developments, including several nationally significant infrastructure projects in the energy, transport and waste sectors. Tom also undertakes lifecycle assessment and GHG emissions verification, advises corporate clients on net zero carbon strategy, and prepares GHG permit applications. Tom has delivered expert witness evidence to a number of public inquiries in the UK and Ireland.

Appendix 7A

2021 Offshore Carbon Balance Assessment

Appendix 7A 2021 Offshore Carbon Balance Assessment

Introduction

This document is **Appendix 7.1** to **Chapter 7: Climatic Factors** of the 2021 Regulation 11 Further Application OnTW Environmental Impact Assessment (EIA) Report. Its purpose is to update the information previously provided in Appendix 8A: Carbon Balance Assessment of the 2018 EIA Report for Inch Cape Offshore Wind Farm[1].

Appendix 8A set out the estimated total annual electricity generation of the offshore wind turbines, the carbon savings that would result from displacing the equivalent amount of fossil-fuelled electricity generation, and the carbon cost of constructing, operating and decommissioning the wind farm.

Although Appendix 8A encompassed the offshore works (i.e. the wind farm itself) rather than focusing specifically on the onshore transmission works that are the subject of the present planning application, this information remains relevant and indeed essential to consider in the context of the assessment of climatic factors in Chapter 7 because the purpose of the onshore transmission works is to enable the climate change benefits of the wind farm to be realised.

Due to the time that has passed since Appendix 8A was written, some data sources such as greenhouse gas emission factors ('GHG factors', which relate an activity to a rate of GHG emissions) have changed or new information has been published. The data presented in the appendix has therefore been reviewed and updated here, where applicable and relevant to the assessment of impacts in Chapter 7.

The same structure and methodological approach adopted for Appendix 8A has been retained in this update. The updated information is presented below under the headings used in Appendix 8A. This document should be read together with that appendix.

Scope

The scope and approach have not changed. However, the anticipated installed export capacity of the offshore wind farm has increased from 700 MW to 1,080 MW, as consented via an Electricity Act 1989 section 36C variation granted on 22 July 2021. All calculations presented here are for 1,080 MW installed capacity.

Potential Electricity Generation Produced by the Development

Appendix 8A used data published by BEIS concerning existing offshore wind farms to estimate the likely annual electricity generation of the proposed development. DUKES 2021[2] provides an updated five-year average capacity factor for existing offshore wind farms to 2020 of 39.9%. With this and the increased installed capacity of 1,080 MW, the electricity generated is estimated to be

[1] Appendix_8A_Carbon_Balance_Assessment_RevA.pdf (inchcapewind.com)

[2] BEIS, 2021: Digest of UK Energy Statistics (DUKES), data table 6.1.1 (the same figure can also be calculated from data table 6.5). [Online] Available: https://www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes, accessed 01/11/21

3,874,859 MWh/annum. Over a 25 year operating lifetime this would be 94,371 GWh; over 50 years, 188,743 GWh.

The annual generation would be equivalent to around 9.5% of the total 40,681 GWh generated from offshore wind in the UK in 2020[3]. Or put another way, the wind farm's installed capacity of a little over 1 GW would be equivalent to around 10% of total installed offshore wind capacity in 2020[4] and would provide 3.3% of the new capacity needed to meet the policy target of 40 GW by 2030 set in the Energy White Paper 2020.

In terms of household electricity consumption, the power generated by proposed development would be equivalent to the average annual consumption of just over one million Scottish households, which is around 36% of total households as measured by their 'domestic MPAN' metering point[5]. The increase compared to the figures in Appendix 8A is largely due to the power upgrade from 700 MW to 1,080 MW, as the household numbers and average electricity consumption have not changed much since the appendix was written.

Equivalent Fuel Use *and* Potential CO_2 Emission Savings Produced by the Development

CO_2 savings

Appendix 8A discussed CO_2 savings in terms of electricity generation from coal, gas and the UK's fossil-fuel mix that would be displaced by the proposed wind farm, using BEIS data from 2016 for the baseline.

Since then, substantial further progress has been made in phasing coal-fired generation out of the UK mix and this is planned to cease entirely by October 2024[6]. Oil and other fossil fuelled electricity generation is a very minor proportion of the grid mix. This update to the CO_2 savings calculation is therefore given only for gas-fired generation as the relevant marginal source displaced.

The average thermal efficiency of combined cycle gas turbine (CCGT) power stations in the UK in 2020 was reported by BEIS as 48.3% on a gross calorific value (GCV) basis and with a load factor of only 35.4%[7], indicative of a large amount of installed capacity unused and/or intermittent operation for plants, which can reduce efficiency. A typical recently built CCGT can achieve up to around 55% thermal efficiency on an NCV basis if operating steadily, and future H-class designs are expected to exceed 60%. A net efficiency value of 55% is used in this calculation as being neither excessively conservative nor optimistic for carbon savings achieved by displacing a marginal gas plant. Based on this and a

[3] *Ibid*, data table 6.4

[4] *Ibid*

[5] BEIS, 2020: Sub-national electricity consumption statistics 2005 to 2019 [Online] Available: https://www.gov.uk/government/statistical-data-sets/regional-and-local-authority-electricity-consumption-statistics (accessed 01/11/21)

[6] Statement by Energy and Climate Change Minister Anne-Marie Trevelyan, 20 June 2021 [Online] Available: https://www.gov.uk/government/news/end-to-coal-power-brought-forward-to-october-2024 (accessed 02/11/21)

[7] BEIS, 2021: Digest of UK Energy Statistics (DUKES), data table 5.10. [Online] Available: https://www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes, accessed 01/11/21

carbon intensity of 0.20297 tCO_2e/MWh (NCV) for natural gas fuel[8], 0.3690 tCO_2e/MWh of GHG emissions would be avoided by displaced gas-fired generation.

The total GHG emissions displaced by operation of the offshore wind farm would therefore be 1,429,964 tCO_2e/annum, or 35.7 $MtCO_2e$ over 25 years if there were no reduction in this baseline (e.g. through implementing carbon capture and storage).

CO_2 costs

Appendix 8A referenced a published Environmental Product Declaration (EPD, the output of a lifecycle analysis study – an LCA) as evidence of the typical carbon costs of constructing, operating and decommissioning an offshore wind turbine array. This was expressed in terms of grams of gCO_2e per kWh generated over the lifetime of wind farm operation. There are some limitations to this approach, notably that (i) GHG emissions from the manufacturing supply chain and construction activity will differ depending on the technology provider and site, and (ii) there are inbuilt assumptions about the capacity factor and total lifetime electricity generation, which are also affected by site- and project-specific factors. Nevertheless, this provides an acceptable method for estimation of likely CO_2 costs of a wind turbine array prior to a specific manufacturer and turbine model being selected.

Further EPDs and published LCA studies of offshore turbines have been reviewed for this update[9]. These indicate a typical carbon intensity of 8–14 gCO_2e/kWh. The EPD cited in Appendix 8A indicated 13.95 gCO_2e/kWh, and as that lies within the updated range (at the conservative end), the value has been retained.

Because the functional unit of the EPDs/LCA studies is gCO_2e/kWh of lifetime electricity generation, not per kW of installed capacity, the scaling of this to total CO_2 costs expressed as $MtCO_2e$ for the proposed development in Table 8A.7 of Appendix 8A is incorrect: such a calculation cannot be undertaken from the available information. This has therefore not been updated.

Backup generation

Appendix 8A noted that with an increasing market share of intermittent renewable generation, backup or peaking power generators will be required. Since that was written, large-scale battery storage has become feasible and is being deployed, and future storage of renewable electricity as hydrogen is a key plank of current energy and climate change policy. Backup generation is therefore likely to come from a variety of sources: continued flexible use of CCGT (and some OCGT), dedicated flexible generators and energy storage whether in batteries or as hydrogen.

Battery storage and electrolysis for hydrogen production, storage and use would have low to zero GHG emissions in use, although carrying an embodied carbon cost. Appendix 8A did not calculate additional

[8] Defra and BEIS, 2021: UK Government GHG Conversion Factors for Company Reporting [Online] Available: https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021 (accessed 04/05/21)

[9] NREL, 2013 (as updated in 2021): Life Cycle Assessment Harmonization [Online] Available: https://www.nrel.gov/analysis/life-cycle-assessment.html (accessed 27/10/21)

Bhandari, R., Kumar, B. and Mayer, F., 2020: Life cycle greenhouse gas emission from wind farms in reference to turbine sizes and capacity factors. *Journal of Cleaner Production* 277.

Bonou, A., Laurent, A. and Olsen, S.I., 2016: Life cycle assessment of onshore and offshore wind energy-from theory to application. *Applied Energy* 180, pp. 327-337.

Weinzettel, J. et al, 2009: Life cycle assessment of a floating offshore wind turbine. *Renewable Energy* 34(3) pp 742-747.

GHG emissions from any fossil-fuelled backup generation as being attributable to the proposed development. This approach is retained, as such emissions would have occurred in the baseline of gas-fired generation without the development (albeit at somewhat higher efficiency), and low-carbon backup options are increasingly likely to be deployed.

Potential CO_2 Emissions Savings Produced by the Development in the Context of Scottish Emissions

Total GHG emissions in Scotland in 2019 were 45.87 $MtCO_2e$ (excluding international aviation and shipping)[10]. The proposed development's annual GHG emissions saving from displacing gas-fired generation, of 1.43 $MtCO_2e$, would be equivalent to 3.1% of the Scotland total in 2019[11].

[10] BEIS, 2021: National Air Emissions Inventory. Greenhouse Gas Inventories for England, Scotland, Wales & Northern Ireland: 1990-2019 [Online] Available: https://uk-air.defra.gov.uk/reports/cat09/2106240841_DA_GHGI_1990-2019_Final_Issue1.2.xlsx (accessed 02/11/21)

[11] As set out above, the calculation of total carbon cost in Table A8.7 was incorrect and this cannot be derived for the proposed development from the EPD data, so this is not included in the calculation of savings in the context of total Scotland emissions.

Appendix 7B

2018 Carbon Balance Review
(Appendix 8A of the 2018 OWF EIA Report)

Contents

List of Tables

8A 2018 Carbon Balance Review

8A.1 Introduction

8A.1.1 Scope

1 This appendix presents research and calculations relating to the potential energy generated and carbon dioxide (CO_2) emissions savings arising from the Development. The results of the calculations and information provided in this document are presented within the context of electricity consumption within the UK and Scotland, and CO_2 emission savings are reported within the context of Scottish CO_2 emissions.

2 The research and calculations presented within this document are based on an example export capacity of 700 MW (which reflects Inch Cape Offshore Limited's (ICOL's) grid connection offer). Results are generally presented as average annual figures although it is noted that generation output from the Development will vary annually due to wind conditions. Benefits will accrue over the operational life of the Development. It is anticipated that the operational life of the Development will be up to 50 years. Figures are presented in 5-year increments from 25 years to 50 years.

3 The calculations present CO_2 emissions savings from energy generation from the Development. An indicative assessment of CO_2 costs arising from construction, operations and decommissioning of the Development is included.

4 As site-specific data for capacity factor is not currently available, the electricity generated has been calculated using an offshore UK capacity factor derived from the average of the last five years of published figures provided by the Department for Business, Energy and Industrial Strategy (BEIS, 2017), previously, the Department of Energy and Climate Change (DECC).

5 The following information is also presented on the basis of the above scope assumptions:

- The potential equivalent number of Scottish and UK households that could be powered by the wind farm.
- The amount of coal, gas and fossil fuels used to produce the equivalent amount of power generated by the wind farm.
- The potential CO_2 emissions savings of the wind farm over coal-fired, gas-fired and fossil fuel mix electricity generation.

8A.2 Potential Electricity Generation Produced by the Development

6 The potential electricity generation of a wind farm is calculated using the total capacity of the wind farm, the time over which generation occurs and the predicted capacity factor[1].

7 Capacity factors for onshore and offshore wind farms show a good correlation with the UK average wind speed (BEIS, 2017) and therefore, exhibit considerable annual variation. In the absence of a site-specific capacity factor figure for the Development, an average figure for capacity factor, based on published information, is considered to be more representative than a single annual figure. As such, the annual figures for offshore UK wind capacity factors have been obtained from BEIS for years 2012 through to 2016 (BEIS, 2017), as shown in Table 8A.1, from these figures, an average figure of 37.9% was calculated.

Table 8A.1: BEIS published offshore UK capacity factors 2012-2016 and calculated average (%)

2012	2013	2014	2015	2016	Average
35.8	39.1	37.3	41.5	36	37.9

8 The following tables provide the potential electricity generation figures for the Development based on the average capacity factor shown in Table 8A.1.

Table 8A.2: Potential electricity generation produced by the Development - Annual

Capacity Factor	Export Capacity (MW)
37.9	700
Potential Electricity Generated (MWh/year)	
2,324,028	

[1] The potential generation figures presented in the calculations undertaken here are based on a commonly used industry formula which multiplies the total MW capacity of the wind farm by the time over which generation occurs and the capacity factor. Methodology available from Renewable UK, 2018.

Table 8A.3: Potential electricity generation produced by the Development - Lifetime

Operational Life	Potential electricity generated in operational period (GWh)
25 years	58,100
30 years	69,720
35 years	81,341
40 years	92,961
45 years	104,581
50 years	116,201

8A.2.1 Potential Electricity Generation Produced by the Development in the Context of Offshore Renewables

9 In relation to the Development contribution to electricity generated by offshore renewables in general; in 2016 offshore wind generated a total of 16,406 GWh (BEIS, 2017) of electricity in the UK. In the context of this, the potential annual electricity generation produced by the Development (2,324 GWh) would be equivalent to 14% of the 2016 total offshore wind generation in the UK.

8A.2.2 Potential Electricity Generation Produced by the Development in the Context of Scottish and UK Electricity Consumption

10 BEIS produces a range of statistics detailing electricity consumption across the UK. The average domestic electricity consumption in Scotland, was 3, 635 kWh (BEIS, 2018) in 2016, compared to a UK average figure of 3, 781 kWh in 2016. The electricity generated by the Development will enter the National Grid network, and therefore cannot be tracked to the individual consumer, but the electricity will supply demand for the UK and has a grid connection point at Cockenzie in East Lothian.

11 According to the calculated potential generation figures provided in Table 8A.2, the table below provides the equivalent number of household that may be powered per year by the Development.

Table 8A.4: Potential number of households equivalent powered by Inch Cape Offshore Wind Farm

Capacity Factor (%)	Potential Electricity Generated (MWh/year)	**2016 Average Domestic Consumption per household (kWh)** Scotland	**2016 Average Domestic Consumption per household (kWh)** UK	**Potential number of households equivalent powered per year** (based on average Scottish consumption)	**Potential number of households equivalent powered per year** (based on average UK consumption)
37.9	2,324,028	3,635	3,781	639,347	614,660

12 Based on these calculations, the potential electricity generated by the Development will be equivalent to the domestic electricity demand of approximately 640,000 and 615,000 (BEIS, 2018) households based on Scottish and UK domestic consumption respectively, assuming a capacity factor of 37.9% and that the average consumption per household has not changed since 2016.

13 Within Scotland, the number of domestic meter point administration numbers (MPANs) in 2016 was 2,781,000 (BEIS, 2018). The figures for Scotland provided in Table 8A.4 reveal that the proposed development could provide the equivalent of 25% of households in Scotland, assuming the housing level has remained constant.

14 Within the UK, the number of domestic MPANs in 2016 was 28,093,932 (BEIS, 2018). The figures for the UK, provided in Table 8A.4, reveal that the Development could provide the equivalent of 2.2% of households in the UK, assuming the housing level has remained constant.

8A.3 Equivalent Fuel Use

15 Every unit of electricity produced by a wind farm development displaces a unit of electricity which would otherwise have been produced by a conventional (coal or gas) power station and therefore, presents carbon savings. It is the output from coal-fired and gas-fired plant that is adjusted to meet the electricity demand on the system; therefore, wind power replaces the output of these power stations as these are the most flexible plant on the system (wind-generated electricity does not replace electricity from other renewables sources or nuclear power stations). The calculations below use a historical series of published figures from BEIS (formerly DECC) for annual fuel used and electricity generated for 2007 through to 2016 (BEIS, 2017). They also use a conversion factor of 0.085985 which converts alternative units (e.g. GWh) into the common unit of energy for comparing and aggregating fuels, i.e. tonne of oil equivalent (toe).

8A.3.1 Coal

16 Based on the BEIS figures (BEIS, 2017) for fuel use 2007-2016, the average amount of coal used to produce a GWh of electricity is 240 toe [i.e. 0.240 thousand toe (ttoe)][2]. Using this average figure and the potential annual generation figure for the Development shown in Table 8A.4, it can be calculated that the Development has the potential to replace approximately 557,766 toe (557.77 ttoe) of coal. To place this into context, in 2016, 7,040 ttoe of coal was used to produce 31,000 GWh of electricity for the UK; the Development, therefore, has the potential to replace the equivalent of approximately 8% of this annual coal usage in 2016.

8A.3.2 Gas

17 The historical series of published figures from BEIS for 2007-2016 also report on gas used for electricity generation. Using these figures, the average amount of gas used to produce a GWh of electricity is 184 toe [i.e. 0.184 ttoe]. Using this average figure and the potential annual generation figure from the Development shown in Table 8A.4, it can be calculated that the Development has the potential to replace the equivalent of approximately 427,621 toe (427.62 ttoe) of gas. Again, to place this into context, in 2016, 25,000 ttoe of gas was used to produce 143,000 GWh of electricity; therefore, the Development has the potential to replace the equivalent of approximately 1.7% of this annual gas usage.

8A.4 Potential CO_2 Emission Savings Produced by the Development

8A.4.1 CO_2 Savings

18 The amount of CO_2 emissions produced during energy production varies with the type of fuel used; therefore, the potential CO_2 savings from the Development depends on the type of fuel it replaces.

19 The wind farm CO_2 emissions savings over other types of generation (i.e. coal-fired, gas-fired, fossil-fuel mix) is calculated by multiplying the energy output of the Wind Farm by the emissions factor of the other type of generation.

20 CO_2 emissions from power stations vary by type of fuel used. In addition, the emissions for different types of electricity generation show annual variations. DECC publishes the annual estimated emissions (tCO_2/GWh) from electricity generation for different fuel types in their annual Digest of UK Energy Statistics (BEIS, 2017). Although the annual variations are fairly small, the average CO_2 emissions for gas, coal and the fossil fuel mix for years 2014-2016, sourced from the 2017 Digest, have been calculated. These average emissions figures (0.911 tCO_2/MWh, 0.376 tCO_2/MWh and 0.584 tCO_2/MWh for coal, gas and all fossil fuels respectively) are known as the emissions factor for that fuel type and are used in the following calculations.

[2] The calculation for this figure was based on dividing the annual amount of fuel used in ttoe (using the conversion factor to convert from GWh to ttoe) by the total annual electricity generation (GWh) of that fuel.

21 Using the above emissions factors and the potential generation produced by the Development shown in Table 8A.4, the potential CO_2 emissions savings from the Development electricity generation are calculated and shown in Table 8A.5 over a range of operational periods.

Table 8A.5: Potential CO_2 emissions savings produced from the Development

Potential Electricity Generated (MWh/year)	Potential annual CO_2 emissions savings over coal-fired generation (tCO_2/year)	Potential annual CO_2 emissions savings over gas-fired generation (tCO_2/year)	Potential annual CO_2 emissions savings over fossil fuel mix generation (tCO_2/year)
2,324,028	2,117,189	873,834	1,357,232
Operational Life	**Potential CO_2 emissions savings from electricity generation over coal-fired generation ($MtCO_2$)**	**Potential CO_2 emissions savings from electricity generation over gas-fired generation ($MtCO_2$)**	**Potential CO_2 emissions savings from electricity generation over fossil fuel mix generation ($MtCO_2$)**
25 years	52.92	21.85	33.93
30 years	63.52	26.22	33.93
35 years	74.10	30.58	47.50
40 years	84.69	34.95	54.29
45 years	95.27	39.32	61.10
50 years	105.86	43.69	67.86

22 Using the BEIS average capacity factor (37.9% for the inclusive period of 2012 to 2017), the Development has the potential to produce CO_2 emissions savings of 2,117,189 tCO_2 per year (i.e. 2.11 million tCO_2 [$MtCO_2$]), 873,834 tCO_2 per year (i.e. 0.87 MtCO2) and 1,357,232 tCO_2 (1.36 Mt CO_2) per year over coal-fired, gas-fired and fossil fuel mix electricity generation respectively.

8A.4.2 CO_2 Costs

23 CO_2 emissions will arise from the manufacture of Wind Turbine Generators (WTGs) and other components, and from construction, operations and decommissioning of the Development. At this stage of the Development, many of the specific elements that will result in emissions are not yet defined. These include WTG make and model, substructure and foundation type and therefore material selection, and installation methods which will affect vessel selection. Operations and maintenance requirements and support locations are also not yet defined. It is only possible at this stage to provide an indicative assessment of CO_2 emissions that will arise from construction, operations and decommissioning of the

Development based on published data. A 2010 climate declaration (EPD, 2013) in relation to Vattenfall's Nordic Wind Farms (including Horns Rev and Lillgrund) provides verified results from a life cycle assessment (LCA) performed as basis for an EPD (Environmental Product Declaration), in accordance with ISO 14025 (Vattenfall, 2010). The declaration shows the emissions of greenhouse gases, expressed as CO_2-equivalents as shown in Table 8A.6.

Table 8A.6: Emissions of greenhouse gases, expressed as CO_2-equivalents

	Grams CO_2 equivalent per KWh
Oils used in plant	0.23
Operations	0.16
Construction, reinvestments and decommissioning	13.56
Total	**13.95**

24 CO_2 costs for the Development have been estimated on this basis. Table 8A.7 below summarises the savings, costs and net savings of CO_2 over a range of operational periods based on savings from a fossil fuel mix as per Table 8A.6.

Table 8A.7: Potential CO_2 emissions savings produced from the Development

Operational Life	**Potential CO_2 emissions savings from electricity generation over fossil fuel mix generation ($MtCO_2$)**	**Potential CO_2 costs from Development ($MtCO_2$)**	**Net CO_2 emissions savings from Development based on fossil fuel mix ($MtCO_2$)**
25 years	33.93	0.81	33.12
30 years	40.72	0.97	39.75
35 years	47.50	1.13	46.37
40 years	54.29	1.30	52.99
45 years	61.10	1.46	59.64
50 years	67.86	1.62	66.24

25 Based on this scenario, the time taken to payback the CO_2 costs of the Development through offsetting emissions from a fossil fuel mixed generation would be approximately 14 months[3].

8A.4.3 Backup Generation

26 Wind generated electricity is inherently variable and may require backup power from other forms of generation in order to manage the supply to the consumer. The extra capacity needed for backup power generation is estimated at 5 % of the rated wind farm capacity if all the wind power schemes within the UK contribute more than 20 % of the total supply to the National Grid (Dale *et al.* 2004 cited in Nayak *et al.* 2010). If fossil fuel provides the backup, there will be carbon emissions associated with this back up.

27 It is likely that the contribution from UK wind energy sources will increase to more than 20% of the total supply of the National Grid during the assumed lifetime of the Development. As such, backup power generation may be required at some point in the future depending on how and when this Development and other projects progress to construction and operation. The emissions associated with backup have not been taken into consideration within the calculations made above.

8A.4.4 Potential CO_2 Emissions Savings Produced by the Development in the Context of Scottish Emissions

28 To place the above CO_2 emissions savings calculations into context, the potential CO_2 emissions savings produced by the Development and presented in Table 8A.7 can be compared to the latest published figures for CO_2 emissions at a Scottish national level. These published estimates reveal that the total CO_2 emissions estimate for Scotland in 2014 was 46.7 $MtCO_2$ (Scottish Government, 2016).

29 As such, based on the annual generation figures using the average BEIS capacity factor, the expected annual CO_2 emission savings from the Development could account for the equivalent of between approximately 1.8% (over gas-fired generation), 2.9% (over fossil fuel mix generation) to 4.5% (over coal-fired generation) of the total CO_2 emissions estimate for Scotland in 2014, assuming that gas-fired, coal-fired and fossil fuel mix generation are replaced alone.

30 Furthermore, as the Scotland figure of 46.7 $MtCO_2$ includes transport, industrial and commercial, as well as agricultural CO_2 emissions; when examining the CO_2 emissions estimates for domestic electricity usage for Scotland in 2015 (9.865 $MtCO_2$[4]), the expected

[3] Based on the Development offsetting 1, 357, 232 tCO_2/year over fossil fuel missed generation and the Development cost being 1.6 $MtCO_2$ over the 50 year lifetime. Calculated as follows: 1,357,232/12 months = 113,102.667 tCO_2/month over fossil fuel missed generation. 1.62 $MtCO_2$/113,102.667 tCO_2/month = 14.3 months.

[4] The emissions associated with domestic electricity consumption have been estimated using an average UK factor for the relevant year in terms of kt CO_2 per GWh. This average allocates equal shares of coal, gas, oil and renewable powered generation to all the domestic electricity consumers and is derived from the UK inventory for 2015. Available online from: https://www.gov.uk/government/collections/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics (last accessed 22/03/2018)

annual CO_2 emission savings from the Development could account for the equivalent of between approximately 8.8% (over gas-fired generation), 13% (over fossil fuel mix generation) to 21.2% (over coal-fired generation) of the total CO_2 emissions estimate for Scotland in 2015, assuming that gas-fired, coal-fired or fossil fuel mix generation are replaced alone.

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