Islay Offshore Wind Farm
Scoping Document
March 2010
Document Approval

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Date: 19 March 2010

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Date: 19 March 2010

Document Status: FINAL

This report should be referenced as:
Executive Summary

SSE Renewables Developments UK Limited (SSE Renewables) is proposing to develop the Islay Offshore Wind Farm, situated 13 km off the west coast of Islay.

The wind farm would have an installed capacity of around 690 MW, generating emission free electricity for approximately 732,660 homes.

This Scoping Document forms part of the consents process. The aim of the document is to inform stakeholders about the proposed development, the consents required and the planned approach to the Environmental Impact Assessment. For each environmental topic, baseline information is provided, the proposed scope of the assessment in terms of the studies and surveys to be undertaken is discussed and potential impacts of the project which require further investigation are identified, including potential mitigation and monitoring.

This Scoping Document also outlines the approach to cumulative assessment for each of the topic areas.

Detailed scopes of work for the Environmental Impact Assessment will be informed by stakeholder responses and prepared through detailed consultation with relevant consultees and subject specialists.

How to Have Your Say

SSE Renewables welcomes your comments on this Scoping Document, particularly information on data available, and advice on how best to involve stakeholders during the Environmental Impact Assessment process.

Comments can be emailed to:

IslayOffshoreWind@amec.com

Or letters sent to the following address:

Environmental Consents Manager

AMEC Power & Process Europe

Hexham Business Centre
St Matthew’s House
Haugh Lane
Hexham
Northumberland
NE46 3PU

This Scoping Document is also available on line at:

www.sse-islay.com
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<td>AA</td>
<td>Appropriate Assessment</td>
</tr>
<tr>
<td>AD</td>
<td>Air Defence</td>
</tr>
<tr>
<td>AIS</td>
<td>Automatic Identification System</td>
</tr>
<tr>
<td>Aggregate</td>
<td>Sand, gravel and rock suitable for use in the construction industry</td>
</tr>
<tr>
<td>ATC</td>
<td>Air Traffic Control</td>
</tr>
<tr>
<td>AONB</td>
<td>Area of Outstanding Natural Beauty</td>
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<td>AOS</td>
<td>Areas of Search</td>
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<td>Areas of Panoramic Quality</td>
<td>Areas of visual quality as selected by the local council Argyll and Bute</td>
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<td>ASFB</td>
<td>Association of Salmon Fishery Boards</td>
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<td>BAP</td>
<td>Biodiversity Action Plan</td>
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<tr>
<td>Benthic</td>
<td>Relating to the seabed</td>
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<td>Benthos</td>
<td>Animals living in or on the seabed</td>
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<tr>
<td>BERR</td>
<td>Department for Business, Enterprise and Regulatory Reform</td>
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<tr>
<td>BGS</td>
<td>British Geological Survey</td>
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<tr>
<td>Biogenic reef</td>
<td>A mound or raised area of seabed built by and predominately composed of organic material</td>
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<tr>
<td>Biomass</td>
<td>A renewable energy source derived from living or recently living organisms (e.g. wood, waste, and alcohol fuels)</td>
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<td>BTO</td>
<td>British Trust for Ornithology</td>
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<tr>
<td>CAA</td>
<td>Civil Aviation Authority</td>
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<tr>
<td>CEFAS</td>
<td>Centre for Environment, Fisheries and Aquaculture Science</td>
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<tr>
<td>Cetaceans</td>
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<td>CODA</td>
<td>Cetacean Offshore Distribution and Abundance in the European Atlantic</td>
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<td>COWRIE</td>
<td>Collaborative Offshore Wind Research into the Environment</td>
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<tr>
<td>CREEM</td>
<td>Centre for Research into Ecological and Environmental Modelling</td>
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<tr>
<td>DECC</td>
<td>Department of Energy and Climate Change</td>
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<tr>
<td>DETI</td>
<td>Department of Enterprise, Trade and Investment</td>
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<td>DSFB</td>
<td>District Salmon Fishery Board</td>
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Islay Offshore Wind Farm Project
Scoping Document

DTI                Department of Trade and Industry  
EC                 European Community  
ECU                Energy Consents Unit (Scottish Government)  
EDAP               Economic Development Action Plan  
EIA                Environmental Impact Assessment  
EMF                Electromagnetic Field  
EPS                European Protected Species  
ES                 Environmental Statement  
ETSU               Energy Technology Support Unit  
EU                 European Union  
FEPA               Food and Environment Protection Act  
FLO                Fisheries Liaison Officer  
FRS                Fisheries Research Services  
GPS                Global Positioning System  
GRT                Gross Registered Tonnes  
HIA                Highlands and Islands Airports  
HIE                Highlands and Islands Enterprises  
HVDC               High Voltage Direct Current  
HWDT               Hebridean Whale and Dolphin Trust  
ICES               International Council for the Exploration of the Seas  
IEEM               Institute of Ecology and Environmental Management  
IFG                Inshore Fisheries Group  
IMO                International Maritime Organisation  
ISLES              Irish Scottish Links on Energy Study  
IUCN               International Union for the Conservation of Nature  
JNCC               Joint Nature Conservation Committee  
JNAPC              Joint Nautical Archaeological Policy Committee  
km                 kilometre  
Landscape designation Area of land given designated status by a local authority or government due to its perceived particular landscape qualities such as scenic value or landscape character  
LAT                Lowest Astronomical Tide  
LIMPET             Land Installed Marine Power Energy Transformer  
LNR                Local Nature Reserve  

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<td>Landscape / Seascape and Visual Impact Assessment</td>
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<tr>
<td>m</td>
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<td>MARPOL</td>
<td>Regulations set under the Marine Pollution Convention</td>
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<td>MCA</td>
<td>Maritime and Coastguard Agency</td>
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<td>MCEU</td>
<td>Marine Consents and Environment Unit</td>
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<tr>
<td>MFA</td>
<td>Marine and Fisheries Agency</td>
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<tr>
<td>MGN</td>
<td>Marine Guidance Note</td>
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<td>MMMP</td>
<td>Marine Mammal Monitoring Protocol</td>
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<td>MOD</td>
<td>Ministry of Defence</td>
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<tr>
<td>MPA</td>
<td>Marine Protected Area</td>
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<tr>
<td>ms$^{-1}$</td>
<td>metres per second</td>
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<tr>
<td>MW</td>
<td>MegaWatt (one million watts)</td>
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<td>NATS</td>
<td>National Air Traffic Services</td>
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<tr>
<td>Nm</td>
<td>Nautical mile (1Nm = 1,852 m)</td>
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<td>NMRS</td>
<td>National Monuments Record of Scotland</td>
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<td>NRA</td>
<td>National Nature Reserve</td>
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<tr>
<td>NSA</td>
<td>National Scenic Area</td>
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<tr>
<td>OSPAR</td>
<td>Oslo Paris Convention signed in 1992 by EU member states for the protection of the marine environment of the North East Atlantic.</td>
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<tr>
<td>PEXA</td>
<td>Practice and Exercise Area (Military)</td>
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<tr>
<td>Photomontage</td>
<td>Computer generated images of a wind farm accurately located and overlaid onto scanned photographs of an existing view, used to illustrate a predicted view of the proposed development</td>
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<td>RAF</td>
<td>Royal Air Force</td>
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<td>RAMSAR site</td>
<td>Wetland site of international importance for the conservation of birds</td>
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<td>RAP</td>
<td>Renewable Action Plan</td>
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<tr>
<td>REAP</td>
<td>Renewable Energy Action Plan</td>
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<td>Receptors</td>
<td>Landscape or seascape resource or type of viewer(s) that will experience an effect on the landscape or the viewer(s) visual amenity arising from the proposed development</td>
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<td>RSPB</td>
<td>Royal Society for the Protection of Birds</td>
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<td>RYA Scotland</td>
<td>Royal Yachting Association (Scotland)</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<td>SAC</td>
<td>Special Area of Conservation</td>
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<td>Scottish Association for Marine Science</td>
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<td>SCANS</td>
<td>Small Cetacean Abundance in the North Sea</td>
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<td>Scottish Environment Protection Agency</td>
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<td>SEA</td>
<td>Strategic Environmental Assessment</td>
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<td>Seabird</td>
<td>Bird which only comes to shore to breed</td>
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<td>SMRU</td>
<td>Sea Mammal Research Unit</td>
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<td>Statutory Nature Conservation Agency</td>
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<td>Scottish Natural Heritage</td>
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<td>Special Protection Area</td>
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<td>Scottish and Southern Energy</td>
</tr>
<tr>
<td>SSSI</td>
<td>Site of Special Scientific Interest</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>UKHO</td>
<td>United Kingdom Hydrographic Office</td>
</tr>
<tr>
<td>VHF</td>
<td>Very High Frequency</td>
</tr>
<tr>
<td>WSI</td>
<td>Written Scheme of Investigation</td>
</tr>
<tr>
<td>ZTV</td>
<td>Zone of Theoretical Visibility</td>
</tr>
</tbody>
</table>
1. INTRODUCTION

1.1. Background Information

In February 2009 The Crown Estate awarded an exclusivity agreement to SSE Renewables' parent Airtricity Holdings (UK) Limited, (now know as SSE Renewables Holdings (UK) Limited) for the development of the proposed Islay Offshore Wind Farm (Exclusivity Agreement). SSE Renewables Holdings (UK) Limited has also been awarded an exclusivity agreement for the proposed Kintyre Offshore Wind Farm off the west coast of Kintyre. AMEC Power and Process Europe is providing technical support for both projects. SSE Renewables Holdings (UK) Limited is proposing to develop the wind farms through its subsidiary SSE Renewables.

The proposed Islay Offshore Wind Farm is located 13 km off the west coast of Islay. Figure 1-1 shows the location of the proposed wind farm. The current, indicative turbine layout is based on 138 x 5 MW turbines which would provide an installed capacity of 690 MW. The turbine layout and size will undergo an iterative design process as the Environmental Impact Assessment (EIA) progresses.

The proposed Islay Offshore Wind Farm would generate emission free electricity for approximately 732,660 homes (www.ofgem.gov.uk).\(^1\)

1.2. Aims of this Document

As required under The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 and The Electricity Works (Environmental Impact Assessment) (Scotland) Amendment Regulations 2008, this Scoping Document forms a request for a scoping opinion.

The key aims of this document are to:

- Set out the overall approach to the Environmental Impact Assessment (EIA)
- For each of the relevant environmental topics, to provide available baseline information, identify the relevant assessment methodology, potential impacts at all stages of development and potential mitigation measures
- Indicate the proposed content and structure of the Environmental Statement (ES)
- Invite comments on the above

The document is divided into four sections:

- Section 1 which describes the aims of this document
- Section 2 which describes the proposed development
- Section 3 which outlines the consents required for the proposed development and relevant environmental legislation
- Sections 4 – 6 which provide information on the studies to be undertaken for the EIA on the physical, biological and human environments respectively. These sections also provide information on the proposed approach to assessing cumulative impacts

\(^1\) Based on household consumption of 3,300 kilowatthours a year
UK Offshore Development

Figure: 1.1
Islay Offshore Wind Farm
Site Boundary and Indicative Turbine Layout

File: ISY_EGIS_SiteBoundary_01_v05
Rev: 5 Date: 11/03/10 By: KB Checked: KW
Scale: 1:570,000 A4
Datum: WGS 1984 Projection: UTM Zone 29N

This product has been derived in part from material obtained from the UK Hydrographic Office with permission of the controller of Her Majesty's Stationary Office and UK Hydrographic Office (www.ukho.gov.uk). NOT TO BE USED FOR NAVIGATION © British Crown and SeaZone Solutions Ltd, 2009. All rights reserved. Data Licence No. 122009.005 © AMEC Power & Process Europe 2010

Legend
- Islay Offshore Wind Farm Proposed Site Boundary
- Indicative Turbine Layout
- Territorial Waters Boundary (UK)
- Territorial Waters Boundary (IR)
- (Irish Naval Service, Coastal and Marine Resources Centre 2010)
1.3. **SSE Renewables**

SSE Renewables is the renewable energy development division of SSE (Scottish and Southern Energy). It is responsible for the development and construction of the SSE group’s renewable energy projects across Great Britain, Ireland and continental Europe, including offshore and onshore wind farms, hydro, marine, biomass, and solar projects.

SSE is the leading generator of renewable energy in the UK, with over 2,200 MW of renewable electricity generation capacity (wind, hydro, and biomass), and a portfolio of over 14,000 MW of renewable energy projects in construction, with consent or in development across the division.

SSE is currently constructing two of Europe’s largest wind farms, a 350 MW onshore wind farm, Clyde, located in the Upper Clyde Valley in Scotland and a 504 MW offshore wind farm, Greater Gabbard, located off the Suffolk coast of England.

SSE’s offshore wind portfolio continues to expand. It is a partner in two consortia to develop awards from The Crown Estate for the UK Offshore Wind Round 3 process, including the largest award, the 9,000 MW Dogger Bank zone.

1.4. **AMEC Power and Process Europe**

AMEC Power and Process Europe (AMEC) has been commissioned by SSE Renewables to act as the EIA Project Manager and Consents Coordinator for the proposed Islay Offshore Wind Farm. AMEC has a demonstrable track record in the offshore wind industry. AMEC has successfully delivered consent for a Crown Estate Round 1 site, Lynn Offshore Wind Farm off the east coast of England, and is currently in the advanced stages of the consent process for two Round 2 offshore wind farms in the Greater Wash, also off the east coast of England, with consent applications submitted for both projects.

1.5. **The Crown Estate**

The Crown Estate owns the majority of seabed within the 12 nautical mile (Nm) territorial limit of United Kingdom (UK) waters. Recently the Energy Act 2004 vested rights to The Crown Estate to license the generation of renewable energy on the continental shelf within the Renewable Energy Zone out to 200 Nm.

The Crown Estate awarded an Exclusivity Agreement in February 2009 for the development of the proposed Islay Offshore Wind Farm. The grant of a lease will be subject to the outcome of the Scottish Government Strategic Environmental Assessment (SEA).

In line with the exclusivity agreement, The Crown Estate leads the West Coast Developers Group which includes The Crown Estate, SSE Renewables (proposing the Islay and Kintyre Offshore Wind Farms) and ScottishPower Renewables (proposing the Argyll Array Offshore Wind Farm off Tiree). The purpose of the group is to promote a coordinated approach to cumulative assessment and collaboration between the developers.

1.6. **The Need for Offshore Wind in Scotland**

The Climate Change (Scotland) Act 2009 received Royal Assent in August 2009. The Act commits Scotland to a world-leading greenhouse gas emission reduction target of 42% of 1990 levels by 2020. This compares with the UK Government target of a 34% reduction by 2020, with an intention to increase this to 42% if targets are met, and the European Union’s (EU) current commitment to a reduction of 20% of 1990 levels by 2020 (www.decc.gov.uk).

Scotland is currently committed to achieve a headline target of 20% of total Scottish energy use coming from renewable sources by 2020. Specific targets include 50% of the electricity demand, 10% renewable transport and 11% of the heat demand (Scottish Government, 2009a).
Following consultation, the Scottish Government published a Renewables Action Plan (RAP) in July 2009. This sets out a framework for action in the specific area of renewable energy. The key objectives of the action plan are:

- To establish Scotland as a UK and EU leader in the field
- To ensure maximum returns for Scotland’s domestic economy
- To meet Scotland’s targets for energy from renewables, and for emissions reductions, to 2020 and beyond

With an estimated 25% of Europe’s offshore wind resource, the benefits for Scotland in exploiting this resource are significant. Jobs are already being created in engineering and planning. Technology is being developed using experience from 40 years in the offshore oil and gas industry and direct financial benefit is coming into communities from the generation and sale of renewable electricity (Scottish Government, 2009b).

The need to maximise economic opportunities from renewables is recognised in the draft Argyll and Bute Renewable Energy Action Plan (REAP) – 2010 to 2013 which aligns with the Council’s Economic Development Action Plan (EDAP) 2010 to 2013 (Argyll and Bute Council, 2010). The REAP sets out the key actions required to further develop renewable energy sectors and secure benefits for the communities of Argyll and Bute.

1.7. Scope of the Environmental Impact Assessment (EIA)

As wind energy technology is likely to advance significantly during the development process, the Environmental Statement (ES) should provide enough environmental information to allow for this in the consent. The EIA for the proposed Islay Offshore Wind Farm will therefore be carried out following the principles described as the ‘Rochdale Envelope’ with assessments based on the most likely realistic worst case scenario(s). This approach should give flexibility to the developer to cope with the changing market and provide security for consenting bodies that the maximum environmental impact of the project has been assessed.

The EIA will cover the offshore aspects of the Islay development only i.e. the offshore wind farm, inter-array cables and offshore substations. The cable route and grid connection point for the development are not yet known and will depend on the outcome of strategic discussions on grid reinforcements.

1.8. Approach to Cumulative and In-Combination Assessment

Discussions with key stakeholders on potential cumulative and in-combination impacts for the three proposed west coast wind farm sites, Islay, Kintyre and Argyll Array, have already been initiated via the Cumulative Effects Discussion Document (Royal Haskoning 2009) and the Cumulative Study Report – Ornithology (AMEC, 2010). A Cumulative Study Report - Marine Mammals is in preparation and will be sent to stakeholders for review.

The aims of these documents are to:

- Demonstrate the commitment of the West Coast Developers Group to addressing potential cumulative impacts early and effectively
- Identify potentially sensitive bird and marine mammal species at an early stage using a robust and auditable methodology
- Identify potential impacts which need to be addressed cumulatively
- Propose potential issues to be ‘scoped out’ of the cumulative assessment
- Outline a possible approach to cumulative assessment in terms of the approach, methodology and level of information required
Comments received from stakeholders on the Cumulative Effects Discussion Document and the Cumulative Study Report – Ornithology have been incorporated into the relevant subject areas of this Scoping Document.

One of the questions asked during the cumulative effects consultation process was how the terms ‘cumulative’ and ‘in-combination’ should be used.

Within the Cumulative Effects Discussion Document, it was suggested that the term ‘cumulative’ should be used for impacts of the wind farm with other wind farms, and the term ‘in-combination’ should be used for impacts of the wind farm with other different activities, e.g. sea disposal.

During the consultation process, a number of stakeholders advised that this differentiation is an artificial one. Scottish Natural Heritage (SNH), in their correspondence of 14 December 2009, commented that the two terms are used interchangeably by them in respect of onshore wind farms.

The terms arise from the following legislation:

- Schedule 3 of the Electricity Works EIA (Scotland) Regulations 2000 requires that the potential for cumulative effect should be considered and, where appropriate, assessed
- The Conservation (Natural Habitats, & c.) Regulations 1994 require that an Appropriate Assessment (AA) must be conducted in respect of any plan or project which is not directly connected with the management of the site for conservation purposes and which is likely to have a significant effect on a European site either alone or in-combination with other plans or projects

In line with legislation, and following stakeholder comments, for the purposes of the EIA it is proposed that the term ‘cumulative’ will be used to refer to impacts of the proposed Islay Offshore Wind Farm with all existing and reasonably foreseeable developments. The term ‘in-combination’ will only be used when considering the effects of the proposals with other plans or projects on European sites.

1.9. Consultation

1.9.1. Pre-scoping Consultation

Consultation with relevant stakeholders has been ongoing since early 2009. In most cases, this has comprised a meeting or letter to introduce the project. For those areas where survey work has started, detailed consultation on survey methods has been undertaken: the scope of the Landscape / Seascape and Visual Impact Assessment (LSVIA) has been agreed in discussion with Argyll and Bute Council and SNH; the methodology for bird and marine mammal boat-based surveys has been agreed through consultation with SNH and the Royal Society for the Protection of Birds (RSPB).

Comments raised during consultation for each of the environmental topics are detailed within the relevant sections of the Scoping Document. Consultation with relevant stakeholders will continue throughout the project.

1.9.2. Consultees

In October 2009, the Cumulative Effects Discussion Document (Royal Haskoning, 2009) was sent to the stakeholders listed in Table 1-1 for comment.

This Scoping Document is being sent to the organisations listed in both Table 1-1 and Table 1-2. Suggestions of additional groups, organisations or individuals who should be consulted would be welcome.
### Table 1-1 Consultees in receipt of the Cumulative Effects Discussion Document and this Scoping Document

<table>
<thead>
<tr>
<th>Consultees in receipt of the Cumulative Effects Discussion Document</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Argyll and Bute Council</td>
<td>National Air Traffic Services</td>
</tr>
<tr>
<td>British Trust for Ornithology</td>
<td>Natural England</td>
</tr>
<tr>
<td>Chamber of Shipping</td>
<td>Northern Ireland Environment Agency</td>
</tr>
<tr>
<td>Civil Aviation Authority</td>
<td>Northern Lighthouse Board</td>
</tr>
<tr>
<td>Health and Safety Executive</td>
<td>Royal Society for the Protection of Birds (Scotland)</td>
</tr>
<tr>
<td>Highlands and Islands Airports</td>
<td>Scottish Environment Protection Agency</td>
</tr>
<tr>
<td>Historic Scotland</td>
<td>Scottish Fishermen’s Federation</td>
</tr>
<tr>
<td>Joint Nature Conservation Committee</td>
<td>Scottish Government Energy Consents Unit</td>
</tr>
<tr>
<td>Marine Scotland</td>
<td>Scottish Inshore Fisheries Groups</td>
</tr>
<tr>
<td>Maritime and Coastguard Agency</td>
<td>Scottish Natural Heritage</td>
</tr>
<tr>
<td>Ministry of Defence / Defence Estates</td>
<td></td>
</tr>
</tbody>
</table>

### Table 1-2 Consultees in receipt of this Scoping Document

<table>
<thead>
<tr>
<th>Consultees in receipt of this Scoping Document</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3G</td>
<td>Marine Safety Forum</td>
</tr>
<tr>
<td>Association of British Ports</td>
<td>Moyle District Council (Northern Ireland)</td>
</tr>
<tr>
<td>Association of Salmon Fishery Boards</td>
<td>Mull Aquaculture and Fisheries Association</td>
</tr>
<tr>
<td>BAA</td>
<td>National Parks and Wildlife Service (Republic of Ireland)</td>
</tr>
<tr>
<td>British Sub Aqua Club</td>
<td>New Under Ten Metre Fishermen’s Association</td>
</tr>
<tr>
<td>British Telecom Network Radio Protection</td>
<td>O2</td>
</tr>
<tr>
<td>Cable and Wireless</td>
<td>Ofcom</td>
</tr>
<tr>
<td>Campbeltown Sailing Club</td>
<td>Orange</td>
</tr>
<tr>
<td>Castle Transmission International</td>
<td>Royal National Lifeboat Institute</td>
</tr>
<tr>
<td>Clyde Cruising Club</td>
<td>Royal Yachting Association (Scotland)</td>
</tr>
<tr>
<td>Clyde Fishermen’s Association</td>
<td>Scallop Association</td>
</tr>
<tr>
<td>Clyde Inshore Fisheries Group</td>
<td>Scottish Enterprise</td>
</tr>
<tr>
<td>Clyde Maritime Rescue Co-Ordination Centre</td>
<td>Scottish Canoe Association</td>
</tr>
<tr>
<td>Council for Nature Conservation and Countryside (Northern Ireland)</td>
<td>Scottish Creelers and Divers Association</td>
</tr>
<tr>
<td>Department of Environment (Northern Ireland)</td>
<td>Scottish Pelagic Fishermen’s Association</td>
</tr>
<tr>
<td>Department of Enterprise, Trade and Investment - Energy Division (Northern Ireland)</td>
<td>Scottish Surfing Federation</td>
</tr>
<tr>
<td>Donegal County Council (Republic of Ireland)</td>
<td>Scottish Water</td>
</tr>
<tr>
<td>Federation of Highlands and Islands Fishermen</td>
<td>Scottish Wildlife Trust</td>
</tr>
<tr>
<td>Friends of the Earth Scotland</td>
<td>Scottish Whitefish Producers Organisation</td>
</tr>
<tr>
<td>Department of Communications, Energy and Natural Resources (Republic of Ireland)</td>
<td>Sea Mammal Research Unit</td>
</tr>
</tbody>
</table>

(continued)
1.9.3. Public Exhibitions

Public exhibitions will be held on Islay following submission of this Scoping Document and at intervals during the project development process. Project details will be provided through information boards and project handout sheets. SSE Renewables and AMEC Power and Process Europe representatives will be on hand to answer any questions.

1.10. Reports Commissioned to Date

A number of reports to inform the early stages of project development have been commissioned. These include:

- Metoc (2009) Kintyre and Islay Offshore Wind Farms - Metocean and Geology Desk Study
- AMEC (in prep.) Cumulative Study Report – Marine Mammals

Information from these documents is provided within the relevant sections of this Scoping Document.
2. PROJECT DESCRIPTION

The proposed Islay Offshore Wind Farm is located 13 km west of Islay. The proposed project would comprise:

- Offshore turbines and their foundations
- Interconnecting cables between turbines
- Potentially up to two offshore substations and their foundations
- A connection to the National Grid

Water depth within the site generally ranges from 30 m to 50 m; however there are shoal areas which run northeast to southwest where water depth reduces to 15 m above Lowest Astronomical Tide (LAT). Mean tidal range is 1 m, with predicted spring current speeds of approximately 1.75 ms\(^{-1}\). Seabed sediments at the site are gravelly, becoming slightly more sandy in the northern areas. Data from the British Geology Survey (BGS) indicate Quartenary sediments of variable thicknesses over Dalradian metasediments, and in the southeastern corner of the site there is a granitic intrusion (Metoc, 2009).

Boundary co-ordinates for the site are listed in Table 2-1.

### Table 2-1 Coordinates for the proposed Islay site

<table>
<thead>
<tr>
<th>Boundary</th>
<th>Latitude (WGS84, DDM)</th>
<th>Longitude (WGS84, DDM), west if negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>55° 50.9619'</td>
<td>-6° 42.3601'</td>
</tr>
<tr>
<td>B</td>
<td>55° 50.8293'</td>
<td>-6° 40.2328'</td>
</tr>
<tr>
<td>C</td>
<td>55° 42.1612'</td>
<td>-6° 44.1810'</td>
</tr>
<tr>
<td>D</td>
<td>55° 42.5255'</td>
<td>-6° 48.8538'</td>
</tr>
<tr>
<td>E</td>
<td>55° 45.4189'</td>
<td>-6° 50.7909'</td>
</tr>
<tr>
<td>F</td>
<td>55° 48.5281'</td>
<td>-6° 46.3265'</td>
</tr>
</tbody>
</table>

2.1. Site Selection

The selection phase for the Islay site began with a comprehensive screening exercise for potential offshore wind farm locations off the west coast of Scotland. This included initial consultation with SNH, the RSPB and Argyll and Bute Council. Potential sites were then assessed in terms of viability, ability to achieve consent and constructability.

Project viability was considered in terms of:

- Expected energy yield: The Islay site is exposed to the extremes of the north east Atlantic wave climate and therefore has good wind resource potential
- Water depth: Current installation techniques are economically viable in water depths of 50 m or less
- Grid connection: It is understood that a coastal renewable energy hub at Hunterston, North Ayrshire, is being considered within the Great Britain Transmissions Investment Options Study (ENSG, 2009)
- Strategic setting: The coastal waters west of Islay were identified by a Scottish Government Report (IES, 2006) as having offshore wind resource potential
- Economics: Financial modelling shows the site to be economically feasible
A pre-feasibility and screening exercise was then undertaken to assess potential environmental constraints at the Islay location. This examined, at a high level, the range of environmental issues that are further addressed in this EIA Scoping Document. Following the screening exercise the decision was taken to proceed with the proposed development of an offshore wind farm at the Islay site. The environmental screening information was then used in the successful bid to The Crown Estate for the Exclusivity Agreement to the site.

### 2.2. Grid Connection

To support the expansion of the renewables sector and to meet the 2020 renewable energy targets, electricity transmission networks will require significant upgrading and extension in Scotland. Several projects have investigated options for grid improvements which are expected to involve the placement of new subsea cables. Potential developments include the installation of a new High Voltage Direct Current (HVDC) cable route from Hunterston to Deeside, northwest England, and a Western Isles connection linking mainland Scotland to Lewis via a cable route across The Minch. The Irish Scottish Links on Energy Study (ISLES) project is also ongoing, investigating the feasibility of an offshore transmission electricity grid around the west coast of Scotland, the north and east coasts of Northern Ireland, the Irish Sea and the west coast of Ireland. Final transmission upgrade options have not yet been confirmed but may affect the chosen grid connection point for the proposed Islay Offshore Wind Farm.

Grid connection cable routing is not yet known and is heavily dependent on onshore connection availability. Cables are not within the remit of this Scoping Document.

### 2.3. Turbine Design and Layout

The exact specification for the turbines would be determined once more information becomes available on site conditions. Choice of turbine would also depend on market availability.

The colour and finish of the towers would be agreed with the appropriate authorities but is likely to be pale grey with a semi-matt finish. Guidelines currently require the superstructure to be painted ‘Submarine Grey’ (Colour code: RAL 7035) with a yellow band on the lower part of the turbines / foundations for increased visibility to shipping. Navigation and aviation lighting would also be required.

At present there are insufficient data to site each turbine precisely. Turbine layouts would be decided once data are available on the wind resource of the site, the nature of the seabed and any siting constraints, e.g. wrecks, protected habitats etc. It is proposed that the EIA will be carried out for indicative layouts which represent the worst realistic case scenario to allow later modifications as necessary.

### 2.4. Foundation Design

Foundation design would depend on the nature of the seabed. The substructure should be one that could be installed quickly and efficiently and exist for the operational life of the wind farm with minimum maintenance.

A detailed study to identify the physical parameters of the site would allow turbine sizes, foundation types and likely installation methodologies to be ascertained. A number of options for foundation type and installation methods would be presented in the ES.

### 2.5. Electrical Layout

Turbines would be electrically connected to each other and offshore substations via inter-array cable circuits. Offshore substations would house transformer(s), associated switchgear equipment, accommodation and possibly a helipad.
2.6. Project Construction

Construction is expected to be over a three year period. A mobilisation and supply base has not yet been identified and some components could be delivered directly to the site by sea from their places of manufacture. Marine plant would include jack-up platforms or self-elevating vessels, tugs, barges, cable-laying vessels and other support craft.

2.7. Project Operation and Maintenance

Once commissioned, the wind farm would operate for 25 years with the possibility of repowering the site for a further period. Computers would control individual wind turbines and would be monitored from a central shore-based location. Access to turbines would be by boat or helicopter.

2.8. Project Decommissioning

Provision for the decommissioning of offshore installations is given in Chapter 3 of the Energy Act 2004. This states that the Secretary of State may require a person who is responsible for an offshore energy installation to provide a decommissioning programme setting out decommissioning measures and expenditure for approval. For sites in Scottish Territorial Waters, the Secretary of State must consult with Scottish Ministers before approving such a programme. Decommissioning impacts will be considered in the EIA.
3. LEGISLATIVE FRAMEWORK

This section sets out the legal framework for the proposed Islay Offshore Wind Farm, including the lease, consents and licences required for the project. Relevant European and national legislation is also discussed.

3.1. The Crown Estate Lease

The Exclusivity Agreement for the development of the proposed Islay Offshore Wind Farm in Scottish Territorial Waters provides the right of occupation of an area for the purpose of placing structures on, or passing cables over, Crown Estate land.

3.2. Consents and Licences Required

Currently, the following primary consents would be required for the wind turbines, inter-array cables and offshore substations:

- A consent under Section 36 of the Electricity Act 1989 for the construction and operation of the wind farm
- A consent under Section 34 of the Coast Protection Act 1949 (CPA) (although under the provisions of the Energy Act 2004, it is not strictly necessary to make an application under Section 34 for those elements that fall within the definition of a ‘renewable energy installation’)
- A Marine Construction Licence under Section 5 of the Food and Environment Protection Act 1985 (FEPA)

If material arising from foundation excavation requires disposal outside the site, a disposal licence under Section 5 of FEPA would be required.

Under Section 95 of the Energy Act 2004, the Secretary of State, in consultation with Scottish Ministers, may issue a notice declaring specified areas to be designated as safety zones. Such safety zones would be intended to secure the safety of individuals and vessels in and around the wind farm and the safety of the wind farm itself. The need for safety zones would be assessed during the development of the project.

Applications for all consents listed would currently be via the Scottish Government’s Energy Consents Unit (ECU).

With the introduction of the Marine (Scotland) Act, Marine Scotland (a new Scottish Government Body created by merging the Fisheries Research Services, the Scottish Fisheries Protection Agency and the Scottish Government Marine Directorate) will be the single licensing point of contact and will licence the deposit of objects on the seabed, replacing the need for a FEPA licence or a CPA consent. A licence under the Electricity Act Section 36 via the ECU will still be required. It is expected that the application for the proposed Islay Offshore Wind Farm would be under the new consenting regime.

3.2.1. The Marine (Scotland) Act

The Marine (Scotland) Bill was passed by Holyrood on 4 February 2010 and received Royal Assent on 10 March 2010 becoming the Marine (Scotland) Act 2010. The Act aims to provide a framework for the sustainable management of the seas around Scotland.

The Marine (Scotland) Act introduces:

- Marine planning: a new statutory marine planning system to sustainably manage the increasing, and often conflicting, demands on our seas
3.2.2. Proposed Site Designation under the Marine (Scotland) Act

Under the legislation, a network of Marine Protected Areas (MPA) is proposed across UK seas with the intention of delivering an ecologically coherent network of sites. Within Scottish territorial waters, MPAs will be designated under the Marine (Scotland) Act. Between 12 Nm and 200 Nm, MPAs will be designated via the UK Marine and Coastal Access Act, 2009. Once boundaries have been put forward, stakeholders will be consulted and potential management issues discussed.

3.3. European Legislation

3.3.1. Strategic Environmental Assessment Directive (SEA Directive)

As stated in the terms of the SEA Directive (2001/42/EC), the Scottish Government is required to carry out a strategic environmental assessment to investigate the effects of ‘certain plans or projects which are likely to have significant effects on the environment’. In this context, the Scottish Government is shortly due to publish a SEA for offshore wind in Scottish Territorial Waters. This will consider, at the strategic level, the sensitivity of the environment to potential impacts from offshore wind farm development off the Scottish coast, identifying areas of environmental constraint and opportunity on a regional basis.

The Scottish offshore wind SEA has drawn on extensive baseline environmental data from the earlier Wave and Tidal Energy SEA (Faber Maunsell and Metoc, 2007) which covered the Scottish west coast and northern waters, and from the report Scotland’s Seas: Towards Understanding Their State (Baxter et al., 2008). The Crown Estate is working closely with the Scottish Government throughout the SEA process.

The Scottish offshore wind SEA will inform the development of a plan for offshore wind in Scottish waters for the short term, including all territorial waters round sites; the medium term, assuming depth limited opportunities for development; and in the long term, assuming no depth limitation. The SEA conclusions will inform site specific EIA considerations and the assessment of cumulative effects.

The outcome of the Scottish offshore wind SEA may then be subject to a plan level Appropriate Assessment (AA) under the Habitats Regulations that would further inform project level assessments, including any requirement for AA.

The Scottish offshore wind SEA has also drawn on the Department of Energy and Climate Change (DECC) UK Offshore Energy SEA (DECC, 2009), which included assessment of The Crown Estate’s Offshore Wind Round 3 licensing plan.

A plan level AA was undertaken by The Crown Estate following the completion of the DECC SEA, which concluded that no adverse effects would occur upon the integrity of designated European sites as a result of the plan, but that this did not preclude any potential requirement for project level AAs.
3.3.2. Environmental Impact Assessment Directive (EIA Directive)

The legal framework for EIA is set by the European Commission EIA Directive 85/337/EEC (as amended by Directive 97/11/EC and 2003/35/EC) on the assessment of the effects of certain public and private projects on the environment. Offshore wind farms are listed in Annex II and will require an EIA where they are likely to have significant effects on the environment because of their size, nature or location. In relation to offshore wind farms, the Directive is implemented in Scottish law through The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (as amended by The Electricity Works (Environmental Impact Assessment) (Scotland) Amendment Regulations 2008) and the Marine Works (Environmental Impact Assessment) Regulations 2007. These regulations describe the minimum requirements for the provision of environmental information in order to assess the impacts of the project.

3.3.3. The Habitats Directive

The Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC), generally known as The Habitats Directive, requires that certain important habitats and species are given legal protection through a network of protected sites. This directive is implemented in UK law through the Conservation (Natural Habitats & c.) Regulations 1994 (as amended) (also known as the Habitats Regulations). New legislation was passed in 2007 extending this network to the offshore region through the Offshore Marine Conservation (Natural Habitats & c.) Regulations 2007. The EIA must consider the effects of a project on the sites protected under these Regulations.

3.3.3.1. Special Areas of Conservation (SACs)

Sites designated under the Habitats Directive are known as Special Areas of Conservation (SACs). Designated SACs on Islay and the surrounding islands are shown on Figure 3-1. Further SACs are currently being considered for designation within UK territorial waters and offshore. The main habitats under consideration are:

- Subtidal sandbanks predominantly in less than 20 m water depth
- Reefs (including biogenic, bedrock and cobble and/or boulder)
- Submarine structures made by leaking gases

Potentially, there could be Annex I stony reef and sandbank habitat to the east of the proposed site. Further information and consultation with SNH is required.
3.3.4. The Birds Directive

The Council Directive on the conservation of Wild Birds (79/409/EEC), generally known as The Birds Directive, is implemented in UK law through the same regulations as the Habitats Directive. It requires that certain species are given legal protection through a network of protected sites.

3.3.4.1. Special Protection Areas (SPAs)

Sites designated under the Birds Directive are known as Special Protection Areas (SPAs). They are designed to protect Annex I, migratory or overwintering bird species where they are present in important numbers.

Currently, there are no truly marine SPAs, however, the Joint Nature Conservation Committee (JNCC) are proposing to designate sites in the following categories:

- Marine extensions to existing seabird colony SPAs
- Inshore aggregations of non-breeding waterbirds
- Offshore aggregations of seabirds
- Other types of marine SPA

This process is ongoing and a number of Areas Of Search (AOS) have been identified. The designation of protected sites is the responsibility of the Statutory Nature Conservation Agencies (SNCA) including SNH and the JNCC.

The network of sites which includes SACs and SPAs is known as the Natura 2000 Network. In order to assess the impact of the project on current and possible future Natura 2000 sites, the ES would include the following:

- A review of all current and possible future designations. This would require consultation with SNH and JNCC
- An assessment of the likely impacts of the development on sites of nature conservation importance
- Consideration of in-combination impacts of the proposal with other plans or projects

3.3.5. Appropriate Assessment (AA)

Where there is the potential for significant effect on a European designated site such as an SAC or SPA (or proposed site), an Appropriate Assessment (AA) (or shadow AA) as defined under the Habitats Directive would be required.

3.4. The Ramsar Convention

Ramsar sites are designated under the 1971 Ramsar Convention (The Convention on Wetlands of International Importance). This provides a framework for the conservation of wetlands with the aim of protecting wildfowl habitat. Ramsar sites have the same level of protection as SACs under the Habitats Directive and are generally supported by additional European and national designations such as SAC or Site of Special Scientific Interest (SSSI).

3.5. The Convention on Biological Diversity

The UK ratified the above convention in 1992 and it is implemented via The UK Biodiversity Action Plan (UKBAP). This promotes biodiversity through Species Action Plans, Habitat Action Plans and Local Biodiversity Action Plans, each with targeted action. In Scotland, The
Nature Conservation (Scotland) Act 2004 gives all public bodies a duty to further the conservation of biodiversity.

### 3.6. Other designated sites

National Nature Reserves (NNRs) are designated under the National Parks and Access to the Countryside Act 1949 or the Wildlife and Countryside Act 1981 (as amended) and are all also Sites of Special Scientific Interest (SSSIs). However, SSSIs may be designated separately from NNRs. Both types of site are designed to protect important features of the natural environment and activity within them is regulated. Updated legislation on SSSIs is included in The Nature Conservation (Scotland) Act 2004.
4. PHYSICAL ENVIRONMENT

The physical environment section of the ES will include information on the meteorological and oceanographic conditions at the site, site geology, bathymetry and seabed topography.

4.1. Meteorological, Oceanographic and Seabed Conditions

4.1.1. Introduction

Information on the physical environment at the site would be required to inform the engineering design of the project. For example, wind data would be used to inform the turbine layout in order to maximise energy yield; geological data would be used to inform turbine foundation design. These data will also be used to build a coastal process model from which to assess the environmental impacts of the wind farm.

The sections below describe baseline data collected to date and proposed activities. Information has been taken from a desk study on the metocean and geological conditions at the proposed Islay Offshore Wind Farm which was commissioned by SSE Renewables in September 2009 (Metoc, 2009).

4.1.1.1. Meteorological Conditions

Wind data are available from the weather station at Orsay Lighthouse at the southern tip of the Rhinns of Islay. Data gathered over a 10 year period from February 1988 to January 1998 show that the prevailing wind is broadly from the southerly quadrant (southeast, south, southwest and west), occurring substantially less frequently from the northeast. The most benign months of the year are June to August.

SSE Renewables intends to install up to two anemometry masts at wind turbine hub height on the Islay site. The consent applications for the masts would be submitted once precise locations have been determined. As an interim measure, onshore meteorological masts are proposed at both Islay and Kintyre. These would be subject to separate consent applications with supporting environmental information.

4.1.1.2. Wave and Current Data

The wind farm site is exposed to westerly ocean waves. The nearest wave data to the site is from the Cefas Blackstones wave rider buoy (56°3'.72N; 007°3’.41W), 49 km west of Colonsay which has been operational since March 2009.

Tidal current data have been provided using Metoc's hydrodynamic model (Metoc, 2009). Non-tidal (surge) currents are not yet known and may be purchased at a later date. Peak currents on spring tides are 1.75 ms⁻¹ and 0.75 ms⁻¹ on neaps. Current speeds do not fall below 0.25 ms⁻¹ at any time, i.e. there is no completely slack water. The main tidal current direction is north northwest to south southeast.

In order to provide site-specific data, SSE Renewables intends to install wave and current measuring devices at the Islay site. Consent applications for these devices will be submitted once precise locations have been determined.

4.1.1.3. Water Quality

There are no available data on site water quality. Enquiries will be made to Marine Scotland in Aberdeen, formerly Fisheries Research Services (FRS). The need to measure baseline water quality would be discussed with the relevant consultees.

4.1.1.4. Bathymetry and Geology

Data are available from Admiralty Charts and BGS maps; bathymetry is shown in Figure 1-1 and seabed sediments are shown in Figure 4-1.
UK Offshore Development

Islay Offshore Wind Farm

Physical Site Information

File: ISY_EGIS_PhysicalSiteInformation_01_v04

Rev: 4  Date: 11/03/10  By: KB  Checked: KW

Scale: 1:300,000  A4

Datum: WGS 1984  Projection: UTM Zone 29N

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Legend

 Islay Offshore Wind Farm Proposed Site Boundary

Seabed Sediments (British Geological Society 2009)

- Gravel
- Gravelly Sand
- Muddy Sandy Gravel
- Sand
- Sandy Gravel
- Slightly Gravelly Sand

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The seabed within the proposed Islay Offshore Wind Farm deepens gradually towards the west, from a minimum of 15.6 m on the south east boundary to a maximum of 52 m close to the northwest boundary. Shoal areas occur within a 4 km swathe of irregular seabed which runs northeast to southwest through the site, within which water depth varies between 15.6 m and 40 m. The seabed sediments within the Islay site are generally gravelly in nature. There is an overall gradation from gravel in the south, through sandy gravel, to gravelly sand in the north of the site.

British Geology Survey (BGS) data indicate Quaternary sediments of variable thicknesses over Dalradian meta-sediments. In the southeast corner of the site there is a granitic intrusion. The swath of irregular seabed running northeast to southwest through the site may be a result of an irregular bedrock outcrop or coarse glacial moraine material deposited by retreating glaciers at the end of the last ice age.

SeaZone data show three ‘wrecks’ within the proposed Islay Offshore Wind Farm site, although only one, the Jacksonville, has been identified within the SeaZone attribute data.

High resolution geophysical data will be collected for the site which will provide information on bathymetry, topography and subsurface geology.

4.2. Coastal Processes

4.2.1. Introduction

Wind farms have the potential to affect geomorphology and sedimentary processes, which in turn may impact the biological environment. The EIA will assess the physical effects of the wind farm at the site, in the surrounding marine environment, and at the adjacent coastline.

4.2.2. Baseline Description

Available information on the metocean, bathymetry and geology of the site is provided in Section 4.1.

4.2.3. Guidance

The coastal process assessment will be carried out in line with, but not limited to, the following guidance:


4.2.4. Proposed Scope of Assessment

In order to assess the physical impacts of the wind farm, including those relating to tides, currents, waves and sediment movement, an appropriately validated and calibrated coastal process model will be set up. Water movement and sedimentary processes, with and without the wind farm, will then be examined, and potential local changes, e.g. scour, and far-field impacts, e.g. alterations to coastal morphology will be assessed. A review of relevant local council and nature conservation plans will be provided to allow potential onshore impacts to be ascertained. Predicted sea level rise over the life time of the project (50 years) would be considered.

Meetings will be held with Marine Scotland, Argyll and Bute Council, SEPA and local ports to discuss available data and the range of scenarios and spatial and temporal scales over which the modelling should be conducted.
4.2.5. Potential Impacts
Potential impacts on Coastal Processes which will be investigated are:

4.2.5.1. Operation (may also occur during construction and decommissioning)
- Alteration to wave height and direction
- Alteration to currents and water elevations
- Alteration to suspended sediment concentrations
- Alteration to seabed bathymetry / topography e.g. scour
- Consequent effects on coastal defences and coastal conservation

Data from other wind farms suggest that the impacts of individual wind turbine structures on characteristics such as sediment flow would be discernible in the near field only. However, each site is unique in terms of location and the number of turbines proposed.

4.2.6. Cumulative Impacts
Potential impacts on coastal processes are likely to be site specific and localised. Whilst localised scour may occur it is unlikely that there will be any interaction between sites (Royal Haskoning 2009). The need to model cumulative impacts would be discussed with relevant consultees.

4.2.7. Potential Mitigation and Monitoring
If required, localised scour around turbines would be mitigated through the addition of scour protection. This could be done using rock dumping or specialised sediment stabilisation mats, depending on the substrate type in the area. The need for such mitigation would depend on the results of the coastal processes assessment, and would be discussed with the relevant consultees.

If the proposed Islay Offshore Wind Farm is consented, monitoring during pre-construction, construction and operation would be agreed with the appropriate bodies as required.
5. BIOLOGICAL ENVIRONMENT

The biological section of the ES will consider the effects of the proposed Islay Offshore Wind Farm on benthic communities (animals living in or on the seabed), natural fish resources, marine mammals (including basking sharks) and birds.

5.1. Benthic Ecology

5.1.1. Introduction

Benthic communities are important in terms of providing food for fish, marine mammals and bird species. Certain habitats and species may also be important in terms of their intrinsic conservation value, e.g. biogenic reef.

The EIA will describe the communities present at the proposed Islay Offshore Wind Farm and assess the potential impacts on them.

5.1.2. Baseline Description

There are no known biological survey data for the Islay site. JNCC data (Graham et al., 2001) based on BGS data, suggest that Annex I stony reef and sandbank habitat could occur 6.6 km and 7 km respectively to the east of the site. Further consultation with SNH and JNCC would be required.

5.1.3. Guidance

The benthic ecology assessment will be carried out in line with, but not limited to, the following guidance:

- CEFAS (2002) Guidelines for the conduct of benthic studies at aggregate dredging sites. Report by CEFAS on behalf of the DTLR

5.1.4. Proposed Scope of Assessment

A desk study of existing literature and surveys in the wider area will be conducted. Data may be held by JNCC, SNH, Marine Scotland, Argyll and Bute Council, SEPA, Scottish Association for Marine Science (SAMS) and local universities.

Site specific information will be required for the site itself and its likely area of impact (i.e. over one spring tidal excursion). Surveys would include benthic grab sampling and demersal (seabed) trawls to sample both benthos and epibenthos (animal and plants living in and on the seabed). Drop-down video may also be utilised, particularly in areas where possible Annex I habitats could occur (Graham et al., 2001). Seabed sediment samples will be collected for particle size analysis to inform the coastal processes assessment and, if required, sediment chemistry.

Methodologies will be consistent with existing guidance and agreed with Marine Scotland and SNH prior to surveys being conducted.

Data collected will be used to establish broad scale species / community abundance and distribution patterns throughout the survey area and to identify species / communities that could be sensitive to the proposed development. The survey will also help establish the uniqueness of the area likely to be affected, within a wider context. The impact of suspended and deposited sediments on specific receptors can be modelled, if required, as part of the Coastal Process Modelling Study. Impacts of noise and electromagnetic fields (EMFs) on benthic communities will be assessed by a literature review.
5.1.5. Potential Impacts

Potential impacts on Benthic Ecology, both positive and negative, which will be investigated are:

5.1.5.1. Construction (may also occur during decommissioning)
- Direct disturbance due to the installation of turbine foundations and inter-array cables and from construction vessels
- Secondary disturbance due to increases in suspended and deposited sediments
- Remobilisation of contaminants from seabed sediments leading to a reduction in water quality
- Discharge of contaminants from construction vessels leading to a reduction in water quality
- Underwater noise and vibration which could have a physiological impact on benthic species

5.1.5.2. Operation
- Direct loss of seabed habitat due to the presence of wind turbine foundations and associated scour
- Provision of new habitat and an artificial reef impact due to the presence of wind turbine foundations and, if required, scour protection
- Changes in sedimentary patterns, sediment transport rates and suspended sediment conditions
- Noise and vibration which may affect the behaviour of benthic species
- EMFs from inter-array cables which may affect the physiology or behaviour of marine benthos

5.1.6. Cumulative Impacts

In most cases, wind farm construction is unlikely to lead to any significant change in seabed or sediment type. Only short term impacts would be experienced and recolonisation by the surrounding infauna is expected to take place rapidly (Royal Haskoning 2009). Due to the localised nature of impacts, cumulative and / or in-combination impacts are unlikely.

5.1.7. Potential Mitigation and Monitoring

Possible mitigation measures could include the following:
- Contaminant management through adherence to standard protocols, e.g. MARPOL 73/78, the Merchant Shipping (Prevention of Pollution) Regulations 1983 and the Merchant Shipping (Prevention of Pollution by Garbage) Regulations 1988
- Adequate site management and transfer of spoil would be handled under the relevant guidance and in accordance with the requirements of statutory consultees
- Appropriate construction techniques could minimise increases in suspended sediments in the water column
- Scour could be mitigated, if required, through the implementation of appropriate scour protection (rock armour, concrete mattresses or sediment stabilisation mats) as agreed with the consenting authorities. The foundations and associated scour protection (if required) would introduce new surfaces for colonisation, and studies
on other wind farms have shown that diverse communities quickly develop (Wilson and Elliott, 2009)

If the proposed Islay Offshore Wind Farm is consented, monitoring during pre-construction, construction and operation would be agreed with the appropriate bodies as required.

5.2. Natural Fish Resources

5.2.1. Introduction

Fish and shellfish form a fundamental component of the marine ecosystem, acting as predators of the marine benthos and prey for birds and marine mammals. Many species are of inherent conservation value and therefore protected under a variety of legislation. Species of commercial value are discussed in Section 6.7, Commercial Fisheries.

To date, meetings have been held with the Clyde Fishermen’s Association on 22 April 2009 and 2 September 2009 and the Scottish Fishermen’s Federation on 20 May 2009 and 2 September 2009. Project details were sent to the Association of Salmon Fishery Boards on 15 April 2009.

5.2.2. Baseline Description

Table 5-1 and Figures 5-1 and 5-2 provide data from Centre for Environment, Fisheries and Aquaculture Science (Coull et al., 1998) which show the presence and extent of spawning and nursery grounds within and around the proposed Islay Offshore Wind Farm. As the locations of spawning and nursery grounds may vary from year to year, the data represent the widest known distribution given current knowledge.
Figure: 5.1
Islay Offshore Wind Farm
Fish Spawning Grounds

Legend
- Islay Offshore Wind Farm Proposed Site Boundary
- Spawning Grounds (spawning season) (Centre for Environment, Fisheries & Aquaculture Science 1998)
  - Sandeel (November to February)
  - Herring (March to April)
  - Plaice (December to March)
  - Sprat (May to August)
  - Norway Pout (January to April)
  - Nephrops (all year with a peak April to May)

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Map depicting the proposed site boundary of the Islay Offshore Wind Farm and the locations of fish spawning grounds for various species.
Figure: 5.2

Islay Offshore Wind Farm
Fish Nursery Grounds

Legend
- Islay Offshore Wind Farm Proposed Site Boundary
- Nursery Grounds (Centre for Environment, Fisheries & Aquaculture Science 1998)

Cod
Sandeel
Herring
Whiting
Saithe
Plaice
Mackerel
Lemon Sole
Norway Pout
Haddock
Nephrops

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Table 5-1 Spawning and nursery areas within the proposed Islay site

<table>
<thead>
<tr>
<th>Species</th>
<th>Spawning Grounds</th>
<th>Nursery Grounds</th>
<th>Seasonality of Spawning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plaice</td>
<td>Occur across the whole of the Islay site</td>
<td>None - occur 14.2 km from the Islay site</td>
<td>December to March</td>
</tr>
<tr>
<td>Whiting</td>
<td>None</td>
<td>None - occur 18.8 km from the Islay site</td>
<td>February to June</td>
</tr>
<tr>
<td>Norway Lobster</td>
<td>Occur across a large area that includes the Islay site</td>
<td>Occur across a large area that includes the Islay site</td>
<td>Throughout the year</td>
</tr>
<tr>
<td>Sprat</td>
<td>Occur across a large area that includes the Islay site</td>
<td>None</td>
<td>May to August</td>
</tr>
<tr>
<td>Saithe</td>
<td>None</td>
<td>Occur across a large area that includes the northern quarter of the Islay site</td>
<td>January to April</td>
</tr>
<tr>
<td>Cod</td>
<td>None</td>
<td>Occur in the northern half of the Islay site</td>
<td>January to April</td>
</tr>
<tr>
<td>Haddock</td>
<td>None</td>
<td>None - occur 9.5 km from the site</td>
<td>February to May</td>
</tr>
<tr>
<td>Norway Pout</td>
<td>None - occur 14.2 km from the Islay site</td>
<td>None - occur 12.3 km from the Islay site</td>
<td>January to April</td>
</tr>
<tr>
<td>Mackerel</td>
<td>None</td>
<td>None - occur 14.8 km from the Islay site</td>
<td>March to July</td>
</tr>
<tr>
<td>Lemon sole</td>
<td>None</td>
<td>None - occur 24.7 km from the Islay site</td>
<td>April to September</td>
</tr>
<tr>
<td>Herring</td>
<td>None - occur 23.6 km from the Islay site</td>
<td>None - occur 40 km from the Islay site</td>
<td>March to April</td>
</tr>
<tr>
<td>Sandeel</td>
<td>None - occur 31.7 km from the Islay site</td>
<td>None - occur 32 km from the Islay site</td>
<td>November to February</td>
</tr>
</tbody>
</table>

Source: Coull et al., (1998)

Some rivers within the area are known to support a number of diadromous (migratory between fresh and salt waters) species, specifically sea trout, Atlantic salmon and eels. Table 5-2 shows approximate timings of migrations although these will vary depending on factors such as water temperature, food availability.

Table 5-2 Timings of migration for diadromous / anadromous species

<table>
<thead>
<tr>
<th>Species</th>
<th>Timing of upstream migration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlantic salmon</td>
<td>Main run through August – October</td>
</tr>
<tr>
<td>Eel</td>
<td>Elvers migrate upstream from January to June, with a May peak</td>
</tr>
<tr>
<td>Sea trout</td>
<td>Migrations occur from May through to October</td>
</tr>
</tbody>
</table>

Source: CEFAS

A number of fish of conservation importance have been recorded within the waters around Islay. A summary of these species along with the legislation through which they are afforded protection is presented in Table 5-3.
Table 5-3 Fish species of conservation importance recorded in the waters around Islay

<table>
<thead>
<tr>
<th>Species</th>
<th>Relevant legislation and other protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allis shad</td>
<td>Bern Convention Appendix II, Habitats Directive Annex II and V, IUCN Red List,</td>
</tr>
<tr>
<td></td>
<td>OSPAR List of Threatened and/or Declining Species, UK Wildlife and Countryside</td>
</tr>
<tr>
<td></td>
<td>Act 1981 (as amended in Scotland), UK BAP priority species</td>
</tr>
<tr>
<td>Atlantic salmon</td>
<td>UK BAP priority species, Habitats Directive Annex II and V</td>
</tr>
<tr>
<td>River lamprey</td>
<td>Bern Convention Appendix II, Habitats Directive Annex II and V</td>
</tr>
<tr>
<td>Lesser sandeel</td>
<td>UK BAP priority species</td>
</tr>
<tr>
<td>Cod</td>
<td>IUCN Red List, OSPAR List of Threatened and/or Declining Species, UK BAP</td>
</tr>
</tbody>
</table>

Loch Gruinart on the north coast of Islay is designated under the EC Shellfish Waters Directive (79/923/EEC). This Directive aims to protect and improve water quality, thereby improving the quality of edible shellfish.

5.2.3. Guidance

The natural fisheries assessment will be carried out in line with, but not limited to, the following guidance:


5.2.4. Proposed Scope of the Assessment

Early consultation with relevant fisheries organisations will be required. In Scotland, fishing industry interests are represented by the Scottish Fishermen’s Federation and its associated local organisations which also play a role in informing fisheries science and marine environmental management.

The management of salmon fisheries is entrusted to District Salmon Fishery Boards (DSFBs) and their representative body The Association of Salmon Fishery Boards (ASFB) whose responsibilities include the protection and improvement of the salmon fisheries within their districts. The jurisdictional area of the Laggan and Sorn / Islay District Salmon Fishery Board covers the eastern edge of the Islay site out to 5 Nm.

The management of Scotland’s inshore fisheries will be through the newly formed Inshore Fisheries Groups (IFGs). The area of the proposed Islay Offshore Wind Farm is covered by the South West IFG.

A desk study of available information will be conducted using the following data sources:

- UK fisheries sensitivity maps (Coull et al., 1998)
- Marine and Fisheries Agency (MFA) landings data from relevant International Council for the Exploration of the Sea (ICES)

Data may also be held by District Salmon Fishery Boards, Marine Scotland, SNH, Scottish Association for Marine Science (SAMS), Scottish Fishermen’s Federation, Clyde Fishermen’s Association, SEPA, Argyll and Bute Council, Inshore Fisheries Groups (IFG) and local universities.
Depending on the data available and the issues raised by consultees, field sampling may be required. Survey methods will be consistent with guidelines (CEFAS, 2004) and methods will be agreed with Marine Scotland, SNH and the SFF prior to starting any survey work.

The data will be used to characterise the site in terms of the broad scale species / community abundance and distribution patterns present. Species / communities that could be sensitive to the proposed development will be identified. Spawning and nursery grounds, and migration routes for fish and shellfish species will be mapped where data are available.

Noise associated with offshore wind farms has the potential to impact fish species, with some species recognised as being more sensitive to sound than others (e.g. herring and shad are more sensitive to sound than plaice or dab). In recognition of this, an assessment of potential noise propagation and species likely to be affected is proposed. Noise modelling work would be done in accordance with relevant publications e.g. Nedwell et al., (2007) and Thomsen et al., (2006).

The sediment model produced as part of the Coastal Processes assessment would be used to assess changes in sediment suspension and deposition at the site during both construction and operation. The significance of the results in terms of impacts on fish resources and seabed habitat will be assessed.

Impacts of EMFs will be assessed via a literature review. The latest COWRIE research (Gill et al., 2009), which involved monitoring movements of specific elasmobranch species within a mesocosm, showed that some individuals of some species responded to induced electric fields some of the time. The biological significance of these findings has not yet been ascertained.

5.2.5. Potential Impacts

Potential impacts on Natural Fish Resources, both positive and negative, which will be investigated, are:

5.2.5.1. Construction (may also occur during decommissioning)

- Direct disturbance and loss of spawning and nursery grounds due to the installation of turbine foundations, cables and vessels
- Indirect impacts on spawning and nursery grounds, and on migration routes, due to increases in suspended and deposited sediments
- Disturbance to seabed habitats from increased sediment suspension and deposition
- Remobilisation of contaminants from seabed sediments leading to a reduction in water quality
- Discharge of contaminants from construction vessels leading to a reduction in water quality
- Noise and vibration which could have impacts on fish and shellfish species

5.2.5.2. Operation

- Direct loss of key fish habitats (spawning, nursery or feeding grounds) due to the presence of wind turbine foundations and associated scour
- Introduction of new habitat from wind turbine installation and scour protection, if required, resulting in possible enhancement of the fishery
- Underwater noise and vibration which could affect behaviour of fish and shellfish species
• EMFs which could affect physiology or behaviour of fish and shellfish species

5.2.6. Cumulative Impacts

Impacts on noise sensitive fish species, e.g. herring, may need further assessment in terms of cumulative impacts. Data collected for each of the three west coast wind farms would be collated to provide a broad scale picture of the fish resource in the wider area. Methods used, including the area over which impacts should be considered, would be discussed with statutory consultees.

5.2.7. Potential Mitigation and Monitoring

The need to dispose of seabed material will depend on the method of foundation installation. If required, potential disposal methods would be discussed with relevant consultees.

The type of foundations used will affect the level of noise generated. If foundations are piled, mitigation of piling noise would include a ‘soft-start’ to piling operations (a gradual increase in the force used to strike the pile).

Potential engineering solutions for reducing piling noise have recently been assessed within a Collaborative Offshore Wind Farm Research into the Environment (COWRIE) research project (Nehls et al., 2007). Results of this project, which include the addition of foam or an air-filled barrier around each pile, are being discussed at an industry level.

Contaminant management would be managed through adherence to standard protocols.

If the proposed Islay Offshore Wind Farm is consented, monitoring during pre-construction, construction and operation would be agreed with the appropriate bodies as required.

5.3. Marine Mammals (and Basking Sharks)

5.3.1. Introduction

Marine mammals occurring in UK waters include pinnipeds (seals) and cetaceans (whales and dolphins). Seal species breeding in UK waters include the common or harbour seal and the grey seal. The most common group of cetaceans is the toothed whales (Odontocetes) and include dolphins and porpoises which tend to inhabit the shallow coastal shelf waters around the UK. The larger baleen whales (Mysticetes) tend to be more oceanic in their distribution. Although basking sharks are fish, they are included within this section due to their size, ecology, and the legislation protecting them.

A meeting was held with SNH on 24 March 2009 and 13 August 2009 to provide a project update and discuss bird / marine mammal survey methodologies. An ornithology and marine mammal survey method statement was submitted to SNH with comments received in December 2009. Consultation with SNH will be ongoing throughout the development of the project.

Meetings have also been held with the Hebridean Whale and Dolphin Trust (HWDT) on 8 May 2009 and the Sea Mammals Research Unit (SMRU) on 16 June 2009. Project details were sent to the Whale and Dolphin Conservation Society on 15 April 2009.

5.3.2. Baseline Description

Marine mammals are protected under conservation legislation including Annex IV of the Habitats Directive which prohibits the deliberate disturbance of listed marine mammal species and Annex II of the Habitats Directive which lists harbour porpoise, bottlenose dolphin, grey seal and harbour seal as species for which the establishment of SACs should be considered. The definition of deliberate disturbance was amended in August 2007 to enhance the level of protection given to European Protected Species (EPS). All cetaceans are categorised as EPS and a licence would be required from the Scottish Government for
works which may affect EPS or their shelter / breeding places. SNH and JNCC are currently agreeing guidance on the legislative protection afforded to EPS within Scottish Territorial Waters as well as for waters beyond 12 Nm (JNCC, 2008).

In UK waters, all cetacean species and basking sharks are protected as Schedule 5 species through Section 9 of the Wildlife and Countryside Act, 1981, and the Nature Conservation (Scotland) Act, 2004. For seals, protection is granted through the Conservation of Seals Act, 1970. The Marine (Scotland) Act also introduces new seal protection measures.

Over ten species of whales, dolphins and porpoises can be seen around the Scottish coastline, with seven species of cetacean known to regularly occur in west coast waters. These are: the harbour porpoise, minke whale, bottlenose dolphin, white-beaked dolphin, Atlantic white-sided dolphin, killer whale and the Risso’s dolphin. SNH have also recommended that humpback, sperm and fin whales are considered within the assessment (letter dated 14 December 2009). Reports from the Islay Natural History Trust note that sightings of pilot whale, striped dolphin and common dolphin have become more frequent in recent years (Islay Natural History Trust, 1999).

Two species of seal occur regularly in the area, the grey seal and harbour (or common) seal. There is a common seal colony lying approximately 39 km from the proposed Islay Offshore Wind Farm at the South East Islay Skerries SAC (Figure 3-1). The west coast of Scotland is considered to be an important area for basking sharks (Speedie et al., 2009).

Initial findings from monthly boat-based surveys, which began on the site in December 2009, indicate that marine mammals are present in the area in very low numbers during the winter months. To date, there have been sightings of both common and grey seal and harbour porpoise confirmed in the area, and one unidentified dolphin species, possibly Risso’s dolphin. These surveys are ongoing.

5.3.2.1. Designated Sites

Special Areas of Conservation (SACs) within the vicinity of the site which have been designated for marine mammals are listed in Table 5-4. The SAC closest to the Islay site, South East Islay Skerries, is shown on Figure 3-1. The sites in Table 5-4 have been selected from a long-list of SACs on the west coast of Scotland through reference to the distance between the SAC and wind farm site boundary and the general foraging range for each designated species. For common seals, tagging studies (Sharplees et al. 2005) showed that foraging usually takes place 10-20 km from haul-outs, however longer journeys to new locations in March and September can be up 125 km. Grey seals generally forage within 40-50 km of haul-outs, with the potential for much longer journeys between haul-outs (up to 365 km). Therefore, for seals in particular, any individuals seen within the site boundary may be from a more distant SAC. For harbour porpoise, it has been shown that although the species can forage over a wide range, individuals tend to stay within certain habitats close to shore, preferring high energy tidal areas around headlands, islands and areas of up-welling caused by varying underwater topography.

Liaison with SNH and JNCC is ongoing in relation to the potential future designation of SACs and MPAs.
Table 5-4 Special Areas of Conservation (SACs) within the vicinity of the proposed Islay Offshore Wind Farm

<table>
<thead>
<tr>
<th>Site</th>
<th>Designation</th>
<th>Conservation Interest</th>
<th>Distance from proposed Islay Offshore Wind Farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>South East Islay Skerries</td>
<td>SAC</td>
<td><strong>Primary designation:</strong> Common seal. The Skerries, islands and rugged coastline are extensively used as pupping, moulting and haul-out sites by common seals, which represent between 1.5% and 2% of the UK population</td>
<td>39 km</td>
</tr>
<tr>
<td>Firth of Lorn*</td>
<td>SAC</td>
<td>Harbour porpoise is listed as present</td>
<td>62 km</td>
</tr>
<tr>
<td>Treshnish Isles*</td>
<td>SAC</td>
<td><strong>Primary designation:</strong> Grey seal. This site is considered one of the most important sites in the UK for the grey seal, with a population of around 3,400 Harbour porpoise is listed as present</td>
<td>71 km</td>
</tr>
<tr>
<td>Eileanan agus Sgeiran Lios mor*</td>
<td>SAC</td>
<td><strong>Primary designation:</strong> Common seal. The site is considered one of the best areas in the country for the species, supporting a population of between 501 and 1000 animals</td>
<td>97 km</td>
</tr>
<tr>
<td>Loch Creran*</td>
<td>SAC</td>
<td>Common seal is listed as present</td>
<td>109 km</td>
</tr>
</tbody>
</table>

*Not shown on Figure 3-1

Source: JNCC website – Protected Sites

5.3.3. Guidance

The marine mammal assessment will be carried out in line with, but not limited to, the following guidance:


5.3.4. Proposed Scope of Assessment

In 2009, SSE Renewables and ScottishPower Renewables commissioned the Sea Mammal Research Unit (SMRU) Ltd to complete a marine mammal desk study for the west coast wind farms (SMRU, 2009). An additional literature review using information from constructed wind farm sites will be carried out to inform the baseline of the EIA. Information from the various relevant COWRIE projects would also be utilised.

Marine mammal sightings are being recorded during monthly ornithological and marine mammal boat-based surveys, on which a dedicated Marine Mammal Observer (MMO) is employed. A minimum of two years of boat-based surveys is expected to be required in order to identify seasonal variations in species, densities, distributions and activities within the area of interest.

Sightings data will be complimented with information from the Sea Watch Foundation and the HWDT websites. The SCANS programme provides information on the abundance of cetaceans during the summer months, with the CODA project focussing on the abundance of cetaceans further offshore. Further initial information on distribution and abundance for cetaceans will be obtained from the JNCC Atlas of Cetacean Distribution in Northwest European Waters, the SMRU Ltd report West Coast Wind Farms – Marine Mammals Desk Study, and the Cumulative Study Report – Marine Mammals (AMEC, in prep.).
The Data Gateway, a portal run by SMRU Ltd and the Centre for Research into Environmental and Ecological Modelling (CREEM), will also be consulted for the latest information on species distribution and seal haul-out locations.

For basking shark, information will be obtained from The Wildlife Trust’s Basking Shark Project which uses both its own research and public sightings to monitor basking shark abundance and distribution.

Depending on the foundation type chosen, noise modelling could be used to provide information on the extent over which physiological / behavioural impacts could occur. The model could also provide information on the possible displacement of prey.

The following reports would be referred to during the EIA process:

- **Thomsen et al.**, (2006) Effects of offshore wind farm noise on marine mammals and fish, biola, Hamburg, Germany on behalf of COWRIE Ltd

### 5.3.5. Potential Impacts

Potential impacts on Marine Mammals (and Basking Sharks), both positive and negative, which will be investigated are:

#### 5.3.5.1. Construction (may also occur during decommissioning)

- Underwater noise and vibration inducing physiological / behavioural changes, i.e. displacement
- Masking of communication from noise with energetic / reproductive consequences
- Disturbance effects resulting in displacement of prey species
- Increased vessel activity which may disturb or cause physical harm
- Increased visual activity which may disturb seals at haul out sites
- Pollution from associated use of diesel, hydraulic fluids, and antifouling compounds
- Potential reduction of the feeding resource due to effects on prey of noise and vibration, habitat disturbance and elevated suspended sediment concentrations
- Potential removal of habitat available for foraging / breeding
- Conflict with commercial fisheries as a result of increased effort within reduced fishing areas

#### 5.3.5.2. Operation

- Underwater noise and vibration inducing behavioural / physiological changes
- Masking of communication with energetic / reproductive consequences
- Impacts of electromagnetic fields from subsea power cables
- Impacts on food resources due to presence of foundations (may be beneficial)
- Increased vessel activity causing disturbance or harm
- Potential removal of habitat available for foraging / breeding
• Conflict with commercial fisheries as a result of increased effort within reduced fishing areas

5.3.6. Cumulative Impacts

In line with the Cumulative Effects Discussion Document, it is proposed that the study area for the cumulative assessment would focus on Regional Sea 7 as defined by the JNCC and DECC Offshore Energy SEA (DECC, 2009). However, due to the wide-ranging nature of marine mammals, in particular the cetaceans, inter-connectivity with Regional Seas 6 and 8 will be considered where appropriate.

Further work on potential cumulative impacts, and the species for which these should be assessed, is being undertaken through the production of Cumulative Impact Assessment Key Features tables, and the Cumulative Study Report – Marine Mammals (AMEC, in prep.). These documents identify SACs which could be affected by the proposed development, and a list of species for which cumulative assessment should potentially be undertaken. Findings will be discussed with SNH and would be incorporated into the impact assessment where appropriate.

The impacts of sequential piling at two or more sites would be considered, as required.

The West Coast Developers’ Group is coordinating data recording procedures for the west coast sites (Islay, Kintyre and Argyll Array) for the purposes of cumulative impact assessment.

5.3.7. Potential Mitigation and Monitoring

If piling is used, soft-start would be employed. A Marine Mammal Monitoring Protocol (MMMP) would also be designed with the aim of ensuring that no marine mammals are within a certain distance of the pile prior to or during pile driving activities. Guidance for this is provided by the JNCC (JNCC, 2009). The use of acoustic deterrents, and potentially new measures available at the time of construction would be discussed with relevant consultees.

Evidence from other wind farms has shown that although marine mammals tend to move away from the site when construction is underway, during operation numbers generally return to baseline levels (Danish Offshore Wind, 2006).

If the proposed Islay Offshore Wind Farm is consented, monitoring during pre-construction, construction and operation would be agreed with the appropriate bodies as required.

5.4. Ornithology

5.4.1. Introduction

The proposed wind farm site lies off the west coast of Islay in waters which are fully exposed to the Atlantic Ocean. In summer, the region is important for auks and pelagic seabird species which forage in open waters. Migratory birds including wildfowl and waders pass through the area in relatively high numbers during spring and autumn passage and, in winter, the inshore waters around Islay hold aggregations of sea ducks and divers. Onshore, the island supports internationally important numbers of wintering geese.

Early consultation on ornithology has taken place with SNH on 24 March 2009, 13 August 2009 and 27 October 2009 and with RSPB on 24 April 2009 and 23 October 2009. Their opinions have been sought on a number of pre-scoping documents namely the Cumulative Study Report - Ornithology (AMEC, 2010) and the methodology for boat-based bird surveys of the site. Regular meetings with SNH and other key stakeholders e.g. RSPB, will be ongoing throughout the process and, where appropriate, local groups will be invited to attend.
5.4.2. Baseline Description

Breeding Season

The species present in greatest numbers within the site during the breeding season are likely to be auks, followed by kittiwake, Manx shearwater, gannet and fulmar as well as a range of gull and tern species. Other pelagic species such as European storm petrel, Leach’s storm petrel and great skua also frequent the area in lower numbers (e.g. ap Rheinallt et al., (eds) 2007).

Based on what is known of their feeding range (e.g. Langston, 2010) breeding auks and kittiwakes foraging within the site are most likely to come from the colonies of North Colonsay and Western Cliffs SPA and perhaps also from Rathlin Island, while Manx shearwaters are most likely to originate from the large breeding colony on the Isle of Rum. The nearest gannetry to the Islay site is Ailsa Craig, however the species’ foraging range, in excess of 500 km, means that birds could come from locations as far away as St Kilda or Bass Rock. Fulmar is also a wide-ranging species, breeding in a number of small local colonies as well as more distant SPA reserves; however their origin is also difficult to specify.

Terrestrial species of conservation interest such as corncrake and chough nest on the island of Islay e.g. The Oa SPA; however, their use of the offshore region is estimated to be low.

Wintering Species

In winter, numbers of seabirds in the offshore region of the site are lower than in summer, although still dominated by auks and kittiwake and reduced numbers of fulmar and gannet. Site specific boat-based surveys which began in December and January 2009 have confirmed this and identified a total of nine common seabird species, predominantly auks and gulls, including guillemot, razorbill, puffin, little auk, kittiwake, common gull, herring gull, great black backed gull, fulmar and gannet plus starling.

Further inshore, JNCC have recorded wintering flocks of greater scaup in Loch Indaal and nationally important numbers of great northern diver in the nearby Sound of Gigha (Lewis et al. 2009, Lewis et al. 2008, Wilson et al. 2006). Other species occurring inshore in relatively high numbers were eider, with smaller numbers of long-tailed duck, common scoter, velvet scoter and red-breasted merganser. However, the numbers of these species in the region of the wind farm is expected to be low.

Internationally important numbers of Greenland white-fronted geese and barnacle geese winter on the island. Their onshore feeding and roosting distribution means that they are not at risk from the wind farm.

Passage Species

The use of the site by migratory birds is yet to be established. However, the west coast of Scotland forms part of a broad migratory flyway and large numbers of barnacle geese (JNCC, undated) and Greenland white-fronted geese (SNH 2009) pass through the island in early autumn.

Significant numbers of both species remain for the winter but some continue further south. Whooper swans and pale bellied Brent geese also pass through the island on route to wintering grounds such as SPAs in Northern Ireland and the Solway Flats and Marshes SPA on the Scotland/England border.

5.4.2.1. Designated sites

There are no SPAs or Areas Of Search (AOS) for marine SPAs in the immediate proximity of the wind farm and JNCC have recently described the area as containing only secondary seabird concentrations (Kober et al., 2010). However, there are two AOS for inshore aggregations of non-breeding waterbirds in Loch Indaal on Islay and the Sound of Gigha.
The site is also within range of onshore SPAs (see Table 5-5 and Figure 3-1), Ramsar sites, National Nature Reserves (NNRs), Sites of Special Scientific Interest (SSSIs) and Local Nature Reserves (LNRs).

### Table 5-5 Special Protected Areas (SPAs) and Ramsar sites within the region of the proposed Islay site

<table>
<thead>
<tr>
<th>Site</th>
<th>Designation</th>
<th>Conservation Interest (Qualifying species (and species named in the assemblage))</th>
<th>Distance from proposed Islay Offshore Wind Farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhinns of Islay</td>
<td>SPA, Ramsar</td>
<td>chough, corncrake, hen harrier, common scoter, chough, Greenland white-fronted goose whooper swan</td>
<td>13.5 km</td>
</tr>
<tr>
<td>Gruinart Flats, Islay</td>
<td>SPA, Ramsar</td>
<td>Greenland white-fronted goose, barnacle goose</td>
<td>19 km</td>
</tr>
<tr>
<td>Laggan Peninsula, Islay</td>
<td>SPA</td>
<td>Greenland white-fronted goose, barnacle goose</td>
<td>24 km</td>
</tr>
<tr>
<td>Bridgend Flats, Islay</td>
<td>SPA, Ramsar</td>
<td>barnacle goose</td>
<td>24 km</td>
</tr>
<tr>
<td>Duich Moss (Eilean na Muice Duibhe), Islay</td>
<td>SPA, Ramsar</td>
<td>Greenland white-fronted goose</td>
<td>27 km</td>
</tr>
<tr>
<td>The Oa</td>
<td>SPA</td>
<td>chough</td>
<td>29 km</td>
</tr>
<tr>
<td>Oronsay and South Colonsay</td>
<td>SPA</td>
<td>corncrake, chough</td>
<td>31 km</td>
</tr>
<tr>
<td>North Colonsay and Western Cliffs*</td>
<td>SPA</td>
<td>chough (guillemot, kittiwake)</td>
<td>36 km</td>
</tr>
<tr>
<td>Rathlin Island*</td>
<td>SPA</td>
<td>peregrine, guillemot, razorbill, kittiwake (as above plus puffin, herring gull, lesser black-backed gull, common gull, fulmar)</td>
<td>51 km</td>
</tr>
<tr>
<td>Kintyre Goose Roosts</td>
<td>SPA, Ramsar</td>
<td>Greenland white-fronted goose</td>
<td>66 km</td>
</tr>
<tr>
<td>Knapdale Lochs</td>
<td>SPA</td>
<td>black-throated diver</td>
<td>67 km</td>
</tr>
<tr>
<td>Ailsa Craig*</td>
<td>SPA</td>
<td>gannet, lesser black-backed gull (as above plus guillemot, kittiwake, herring gull)</td>
<td>113.5 km</td>
</tr>
</tbody>
</table>

* Not shown on Figure: 3-1 * Sites with marine extensions

Source: JNCC website – Protected Sites
5.4.3. Guidance

The ornithological assessment will be carried out in line with, but not limited to, the following guidance:


Where special, non-standard studies or analyses are required, methodology will follow best practice and expert guidance will be sought. All methodology will be agreed in advance of its implementation with SNH and other key stakeholders such as RSPB.

5.4.4. Proposed Scope of Assessment

The ES will include baseline information on the number of birds and their density within the wind farm site; an assessment of the importance of the area for birds throughout the year i.e., the nature of its use for foraging, over-wintering, migration and other activities; an assessment of impacts, including cumulative and their significance and a description of appropriate mitigation.

The following data sources will be referred to during the EIA process:

- Strategic level documents and databases covering large scale surveys of seabirds in offshore waters including the west of Scotland e.g. Strategic Environmental Assessment (DECC, 2009); European Seabirds At Sea database
- Regional surveys and databases e.g. WeBS surveys, JNCC surveys, recording the distribution of specific guilds or individual species within south west Scotland
- Local bird reports and texts detailing the distribution of species within the Argyll area, and specifically Islay e.g. ap Rheinalt et al., (eds) (2007)

5.4.4.1. Boat-based surveys

A programme of boat-based surveys has been discussed and the methodology agreed with SNH and RSPB (letters of 11 December 2009 and 13 January 2010 respectively). The surveys which began in December 2009 will be carried out once a month over a two year period, unless otherwise agreed, to identify seasonal and annual variations in species, densities, distribution and activities within the area. These surveys will provide baseline data to assess the use of the site during periods of breeding, migration and over-wintering and establish the importance of the site for seabird activities.

5.4.4.2. Aerial surveys

Aerial surveys using digital camera technology are currently being considered as a method to compliment, or if deemed sufficient, replace boat-based surveys should they be disrupted owing to adverse weather (SNH correspondence dated 11 December 2009). If commissioned, the methodologies will incorporate the latest COWRIE recommendations e.g. Thaxter and Burton, (2009), and be agreed with SNH and RSPB.
5.4.4.3. Other surveys and studies

Sea-watching data recorded from Frenchman’s Rocks, Islay, over a ten year period between 1993 and 2004 have been acquired and will give a useful indication of the range and abundance of species passing close to the area of the wind farm throughout the year.

5.4.5. Potential Impacts

The potential impacts on Ornithology which will be investigated are:

5.4.5.1. Construction (may also occur during decommissioning)
- Disturbance and displacement
- Indirect impacts e.g. disruption to habitat function, impacts on prey

5.4.5.2. Operation
- Collision risk with the rotating blades of the turbines
- Disturbance and displacement
- Barrier effects causing disruption of flights lines due to the addition of turbines, including migratory flight paths and day to day movements between feeding and breeding / roosting sites
- Indirect impacts e.g. disruption to habitat function, impacts on prey

Sensitivity to each of these impacts has been estimated for 26 seabirds in German waters (Garthe and Huppop, 2004) and it is understood that SNH are intending to produce a similar sensitivity scale for Scottish species based on emerging evidence.

Impact assessment methodology will follow standard matrix methods (eg SNH 2005) but will incorporate recommendations set out in the Institute of Ecology and Environmental Management Guidance (IEEM, 2008) to ensure that there is clarity on whether an impact is assessed as significant or not significant. Cumulative assessment methods will follow those outlined in King et al., (2009).

5.4.6. Cumulative Impacts

Ornithological impacts have the potential to act cumulatively with other projects, particularly with offshore and onshore wind farm sites within the area (Royal Haskoning 2009). Sites include the proposed offshore wind farm sites of Kintyre (SSE Renewables) and Argyll Array (ScottishPower Renewables) and the onshore sites of Gigha, Deucharan Hill, Beinn an Tuirc 1 and 2, Tangy, Tangy Extension and Kilchattan plus other projects in planning, e.g. Ballygroggan, Cour and Allt Dearg II. Royal Haskoning (2009) recommended that although other cumulative impacts were unlikely at this stage, as further marine renewables projects come on stream e.g. wave and tidal, these may also need to be considered.

The Cumulative Study Report – Ornithology (AMEC, 2010) has proposed that the region for cumulative study would initially focus on the southern part of Regional Sea 7 as defined by the JNCC and DECC Offshore Energy SEA (DECC, 2009), from the northern tip of Skye southwards, plus additional SPAs from adjacent areas within Regional Seas 6 and 8 where appropriate. Based on this region, the report has identified a preliminary list of the key bird species and protected sites which may experience cumulative impacts. The report has been discussed with SNH and RSPB at meetings in October 2009 and written responses received from them by letter of 14 December 2009 and 4 December 2009 respectively. Both organisations have welcomed the principle of identifying sensitive species at an early stage and commended the collaborative approach between developers. They requested that for some migratory species or those with a large foraging range the area of study, may need to
be broadened and requested the inclusion of a small number of additional species into the list.

A revised version of the report has now been produced and discussions with SNH and RSPB are ongoing, particularly in relation to species which may merit more detailed study. The list of sensitive species will be refined as information from field surveys becomes available and is likely to go through a number of iterations.

Developers (SSE Renewables and ScottishPower Renewables) have also agreed that data recording methods will be standardised between west coast sites to make cumulative analysis easier.

**5.4.7. Potential Mitigation and Monitoring**

Wind farm developers may employ a range of mitigation methods depending on the sensitivity of species found within the site, the location of the wind farm and the impact in question. Potential methods, as described in the SNH policy statement: Marine renewable Energy and the Natural Heritage (SNH undated) may include:

- Use of ‘considerate’ access routes to avoid flocks of rafting birds
- Use of ‘soft-start’ procedures to minimise initial piling noise
- Amendments to turbine layout to avoid areas of high bird activity

If the proposed Islay Offshore Wind Farm is consented, monitoring during pre-construction, construction and operation would be agreed with the appropriate bodies as required.
6. HUMAN ENVIRONMENT

The human environment section of the ES would include the assessment of impacts of the proposed Islay Offshore Wind Farm on shipping, military uses and airports, seabed archaeology and onshore cultural heritage, landscape and seascape character and views, tourism, commercial fishing and other marine users, including other offshore renewables.

6.1. Shipping and Navigation

6.1.1. Introduction

Navigational safety is one of the key issues to be considered when developing a wind farm and, as such, careful planning is required. As part of this process, consultation with port authorities and shipping organisations has already begun. Meetings have been held with the Northern Lighthouse Board on 24 April 2009 and the Maritime and Coastguard Agency (MCA) on 9 May 2009. Project details were sent to the Royal Yachting Association (RYA) on 15 April 2009. Consultation will continue throughout the project.

6.1.2. Baseline Description

Shipping survey data up to summer 2008, which include vessels over 300 Gross Registered Tonnes (GRT) (Anatec, unpublished), have been mapped on Figure 6-1. Shipping densities vary across the study area, with the highest levels of activity associated with the southern half of the site. The majority of the proposed Islay Offshore Wind Farm falls within an area of medium to high shipping density (66 - >321 ships per year), with the northern tip of the site within an area of low shipping density (25 - 66 ships per year).

A number of navigational features such as anchorages and cardinal buoys lie within the vicinity of the site although none are within the Islay site itself. Western Scotland is a popular recreational sailing area; cruising routes are shown in Figure 6-5.

6.1.3. Guidance

The shipping and navigation assessment will be carried out in line with, but not limited to the following guidance:

- Trinity House (2005) Lighthouse Services Guidance

6.1.4. Proposed Scope of Assessment

As the movement of smaller commercial and recreational vessels may not be captured by the data presented in Figure 6-1, marine traffic surveys (using Automatic Identification System (AIS) and radar) would be undertaken to identify the numbers, types and sizes of all vessels using the area. In accordance with the MCA guidance note MGN 371, a traffic survey of the area will be carried out within 12 months of submission of the ES.
UK Offshore Development

Figure: 6.1

Islay Offshore Wind Farm Shipping Information

File: ISY_EGIS_ShippingInformation_01_v04

Rev: 4  Date: 11/03/10  By: KB  Checked: KW

Scale: 1:570,000  A4

Datum: WGS 1984  Projection: UTM Zone 29N
During the EIA, the following work will be undertaken:

- A meeting to discuss the methods of data collection and assessment will be held with the MCA. Advice on recreational usage will also be sought from RYA Scotland and Argyll and Bute Council.
- Marine traffic surveys will be undertaken to assess usage at the start of the assessment process. The MCA shipping route template will then be applied to the site. Under MGN 371, a traffic survey is required within 12 months prior to the consent application.
- Data from the marine traffic surveys will be used to validate and update the existing shipping data and provide baseline information. The survey information will be supplemented by desk based research into each of the main vessel types in the area: commercial vessels, dredgers, fishing vessels and recreational vessels. Consultation with relevant experts such as local harbour masters, pilots, Ship Masters and Ship Operators will also be required. This will ensure that the best available data are used on which to base the navigational risk assessment and subsequent mitigation measures.

Unlike other parts of the ES, where an approach based on the significance of each impact will be adopted, the navigation impact methodology will use a risk assessment based approach. The Navigational Risk Assessment will be carried out in accordance with relevant guidance and involve assessing the base level of risk in the area (ship to ship collision and vessel grounding risk) and the additional risks as a result of the presence of wind turbines (change in collision, grounding risks and ship to turbine collision).

The impacts on marine recreation and amenity will be assessed following consultation with the relevant consultees. Advice on navigational marking requirements will be sought from the Northern Lighthouse Board.

### 6.1.5. Potential Impacts

Potential impacts on Shipping and Navigation which will be investigated are:

**6.1.5.1. Construction (may also occur during decommissioning)**

- Displacement impacts on commercial shipping, recreational vessels and fishing vessels and potential congestion / bunching of traffic in other areas.
- Increased steaming times / distance and resultant changes in fuel costs.
- Construction vessel collision on site (ship to ship or ship to turbine).
- Construction vessel encounter with underwater obstruction.
- Man overboard during transfer operations.
- Dropped object during lifting operations.

**6.1.5.2. Operation**

- Displacement impacts on commercial shipping, recreational vessels and fishing vessels and potential congestion / bunching of traffic in other areas.
- Increased steaming times / distance and resultant changes in fuel costs.
- Collision (ship to ship or ship to turbine).
- Man-overboard during maintenance work.
- Impacts on marine systems, including radar, very high frequency (VHF) radio and global positioning systems GPS, i.e. radar reflections, shadow areas or blind spots.
• Impacts on navigation through visual obstruction and / or changes in water movement around the structures
• Impact on Search and Rescue, i.e. due to navigational and communication difficulties
• Potential impacts on anchorage and shelter areas

6.1.6. Cumulative Impacts
The distance between the three west coast sites and the relatively low levels of commercial activity associated with the west coast ports means that there should be little scope for cumulative impacts on shipping and navigation. This would be reviewed in consultation with relevant stakeholders during the EIA process. Further consideration will be given to potential cumulative impacts on shipping-related tourism and recreation.

6.1.7. Potential Mitigation
A Navigation Risk Assessment (NRA) will enable navigational impact to be quantified and mitigation measures identified. Mitigation will include the use of marine navigational marking and lighting in accordance with advice from the Northern Lighthouse Board. Offshore activities will be advised of in advance via Notices to Mariners (NTM). If required, safety zones would be applied for under the provisions of the Energy Act 2004 for construction, operation and / or decommissioning.

The Northern Lighthouse Board has stated that changes to shipping routes heading for the Minch would be required (letter dated 16 October 2009). This will be discussed with consultees, including methods of implementation.

6.2. MOD, Radar and Aviation

6.2.1. Introduction
Wind turbines can potentially interfere with communication and surveillance systems that use electromagnetic waves for transmission producing unwanted impacts. The main concerns for offshore wind farms are interference to Air Defence (AD) Primary Surveillance Radars and Air Traffic Control (ATC) systems. The physical presence of the turbines could also affect MOD activities and aviation flight paths.

SSE Renewables has been working closely with Civil and Military authorities to ensure that any possible issues and potential mitigation are discussed at an early stage. The MOD / Defence Estates were sent a consultation proforma on 6 April 2009; the response highlighted a potential issue with submarines coming in and out of HM Naval Base Clyde. A meeting took place with the Royal Navy on the 27 April 2009 and concerns were expressed regarding development in the southern area of Islay as this area is used for shallow submarine activity. The Civil Aviation Authority (CAA), National Air Traffic Services (NATS), Highlands and Islands Airports (HIA) and MOD / Defence Estates were sent copies of the Cumulative Effects Discussion Document. Responses are summarised in the text below. Consultation with MOD / Defence Estates, NATS, CAA and HIA will be maintained throughout the project development.

6.2.2. Baseline Description

6.2.2.1. Ministry Of Defence (MOD)
The area around the Islay site includes a number of Military Practice and Exercise Areas (PEXA). PEXA charts produced by the UK Hydrographical Office identify the military activity zones within the area. PEXAs are used for various military practise activities by the Royal Navy, the Army, the Royal Air Force and the Defence Estates. The locations of local PEXAs...
are shown in Figure 6-2. The proposed Islay Offshore Wind Farm lies within Orsay and Colonsay PEXAs.

There are no active Royal Air Force (RAF) bases in close proximity to the Islay site.

### 6.2.2. Civil Aviation

Islay (Glenegedale) Airport is located 30 km from the proposed Islay Offshore Wind Farm (Figure 6-2). In their response to the Cumulative Effects Discussion Document of 13 October 2009, HIA stated that the proposed Islay development falls outside the physical safeguarded area for Islay airport, but requested further investigation into the potential for impacts of turbines on aeronautical systems and instrument approach procedures. Consultation with HIA is ongoing.

#### 6.2.2.3. National Air Traffic Services (NATS)

National Air Traffic Services (NATS) provides air traffic control services to aircraft flying in UK airspace, and over the eastern part of the North Atlantic from two locations; Swanwick in Hampshire and Prestwick in Ayrshire. NATS has identified areas where wind turbine developments may be of concern to operations.

Correspondence from NATS to the Cumulative Impacts Discussion Document dated 26 November 2009 identifies the need for further studies to assess potential impacts on technical operations. The scope of future assessments would be agreed in consultation with NATS.

### 6.2.3. Guidance

The MOD, radar and aviation assessment will be carried out in line with, but not limited to, the following guidance:


The following Civil Aviation Publications will also be reviewed:

- CAA (2008) CAP 168 Licensing of Aerodromes
- CAA (2010) CAP 670 Air Traffic Services Safety Requirements
- CAA (2006) CAP 738 Safeguarding of Aerodromes
- CAA (2009) CAP 764 Policy and Guidelines on Wind Turbines

### 6.2.4. Proposed Scope of Assessment

As part of the EIA a detailed assessment will be undertaken of the potential impacts on aviation facilities (including radar), airspace structure, flight paths and MOD activities. The assessment will be undertaken by an aviation / military specialist in consultation with the appropriate bodies, including the CAA, NATS, MOD and HIA.

### 6.2.5. Potential Impacts

Potential impacts on MOD, Radar and Aviation which will be investigated are:

#### 6.2.5.1. Construction

- Physical interference with MOD activities
Figure 6.2
Islay Offshore Wind Farm
Airports, Navigation Aids and PEXAs

Legend
- Islay Offshore Wind Farm Proposed Site Boundary
- Military Practice and Exercise Area (PEXA)
- Navigation Aids (National Air Traffic Services 2010)
- Airport

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UK Offshore Development

File: ISY_EGIS_MilitaryAirfieldsNATSPEXs_01_v04
Rev: 4 Date: 11/03/10 By: KB Checked: KW
Scale: 1:570,000 A4
Datum: WGS 1984 Projection: UTM Zone 29N

SSE Renewables
6.2.5.2. **Operation**
- Interference with communications and surveillance systems
- Physical interference with MOD activities
- Physical interference with civil airports

6.2.6. **Cumulative Impacts**
The pre-scoping Cumulative Effects Discussion Document has been circulated for comment and further consultation will determine the need for any future joint impact study. Consultation with relevant consultees will ascertain whether a cumulative assessment is required, and its scope.

6.2.7. **Mitigation**
Mitigation measures, including wind farm design and the implementation of software modifications to radar systems, would be discussed with relevant consultees. If the proposed Islay Offshore Wind Farm is found to have any potential adverse impacts on military activities and / or aviation, SSE Renewables will work closely with all stakeholders involved to find a mutually agreed solution where required.

6.3. **Cultural Heritage and Archaeology**

6.3.1. **Introduction**
The archaeological assessment will include both the presence of maritime sites, e.g. wrecks, and the potential for prehistoric landscapes within the wind farm and the wider area. Potential impacts on the settings of scheduled monuments and listed buildings onshore will also be considered.

Consultation has begun with Historic Scotland, with initial communication on 15 April 2009 providing project information and contact details for the development team. Historic Scotland’s opinions have also been sought on initial work on cumulative impact, and additional information has been provided to them where requested.

6.3.2. **Baseline Description**
There are a number of shipwrecks in the area, with three, including the Jacksonville, located within the boundary of the proposed Islay Offshore Wind Farm (SeaZone Data, 2009). The locations of these wrecks are shown on Figure 6-1.

SEA 7 (Wickham-Jones and Dawson, 2006) indicates that the shallow areas around the west coast of Islay were once dry land during the period of human occupation after the end of the last ice age.

There are a number of scheduled monuments and listed buildings on Islay and the surrounding islands, including a number of standing stones at sites including Port Ellen, Cultoo and Billinaby, and the American Monument on Oa.

6.3.3. **Guidance**
The cultural heritage and archaeological assessment will be carried out in line with, but not limited to, the following guidance:
6.3.4. Proposed Scope of Assessment

A site specific, detailed desk study will be performed, using available data sources and incorporating consultations with statutory consultees (e.g. Historic Scotland) and local groups. This should provide agreement on the search area – usually the site and an agreed buffer zone (e.g. 500 m). The following sources will be consulted for known archaeological records in the area:

- National Monuments Record of Scotland (NMRS)
- UK Hydrographic Office (Wreck Section)
- Receiver of Wreck (Maritime and Coastguard Agency (MCA))
- MOD for information on the Protection of Military Remains

Various authorities will be contacted to provide information on wrecks and archaeological sites within the study area.

Interpretation of geophysical data (seismic, side-scan and magnetometer) will be undertaken by a qualified marine archaeologist to enable unknown or additional submerged or buried archaeological remains to be identified. The results of this assessment will be incorporated into the constraints map for the site layout. Geotechnical samples collected during pre-construction survey could also be analysed by a suitable qualified archaeologist to assess the potential for buried soil horizons.

6.3.5. Potential Impacts

Potential impacts on Cultural Heritage and Archaeology which will be investigated are:

6.3.5.1. Construction (may also occur during decommissioning)

- Direct damage to archaeological features

6.3.5.2. Operation

- Changing patterns of seabed sediment erosion / accretion
- Impacts on the settings of scheduled monuments and listed buildings

6.3.6. Cumulative Impacts

It is anticipated that marine archaeology could be effectively assessed and mitigated on an individual project basis; however, the potential for cumulative impacts will be reviewed once the baseline data, e.g. results of the desk study and geophysical surveys, are available. Cumulative studies may be required if drowned landscapes are discovered over more than one of the three proposed west coast offshore wind farm sites.
6.3.7. Potential Mitigation
Detailed mitigation and management practices would be developed for the construction phases of the project, both onshore and offshore, to reduce any impacts on the known and unforeseen archaeology, as required.

Turbine and cable placement would seek to avoid any features of historical interest as far as possible on the seabed and it is expected that the chance of accidental disturbance of features would be minimal. A Written Scheme of Investigation (WSI) detailing protocols for recording any finds would be provided in agreement with Historic Scotland.

6.4. Landscape, Seascape and Visual

6.4.1. Introduction
The Landscape / Seascape and Visual Assessment (LSVIA) will be carried out by Entec UK Limited\(^2\), chartered landscape architects with experience in this field.

The LSVIA will determine the significance of effect of the proposed Islay Offshore Wind Farm on the landscape / seascape and on views, visual amenity and receptor groups within the study area and the Zone of Theoretical Visibility (ZTV).

A preliminary meeting with Argyll and Bute Council and SNH in December 2009 and a site visit of the study area has been undertaken to guide this section of the scoping report.

6.4.2. Baseline Description
The SNH landscape assessment of Argyll and the Firth of Clyde describes the key characteristics of Islay and Colonsay: Landscape Character Area 9 and gives the following landscape types: Moorland Plateau, Lowland Bog and Moor, Marginal Farmland Mosaic, Rocky Moorland, Coastal Parallel Ridges, and Sand Dunes and Machair.

Figure 6-3 provides an indication of the study area for the LSVIA (35 km radius from the outer-most turbines) and the viewpoint locations. The ZTV has been calculated to blade tip and indicates the theoretical extent of visibility of the proposed Islay Offshore Wind Farm assuming bare ground with no account taken of the potential screening effects of vegetation and built form. Islay, Colonsay and part of Jura fall within the study area.

Figure 6-4 illustrates the locations of landscape planning designations including national designations (National Scenic Areas) and local designations (Areas of Panoramic Quality). There are no Gardens and Designed Landscapes within the study area.

These figures can be found at the end of this Scoping Document.

6.4.3. Guidance
The LSVIA will be prepared with reference to a number of ‘best practice’ documents and guidance (some of which is currently being up-dated) relating to LSVIA and produced by the Landscape Institute and SNH. A list of references was provided at a recent consultation meeting with SNH, some of these documents are to be reviewed / updated and a final list will be prepared on commencement of the LSVIA assessment stage.

The Landscape, Seascape and Visual assessment will be carried out in line with, but not limited to, the following guidance:

- Scottish Natural Heritage (2009) Siting and designing windfarms in the landscape

\(^2\) Chartered landscape architects CMLI (Chartered Member of the Landscape Institute)


Consultation meetings will be arranged with Argyll and Bute Council and SNH to discuss landscape and visual considerations as part of the assessment process. It is likely that some consultation will also extend to include local Councillors and groups with an interest in landscape and visual issues and to the wider local community via public exhibitions.

### 6.4.4. Proposed Scope of Assessment

A baseline appraisal will be provided which will include a description of the existing landscape / seascape within the study area. Reference will be made to the existing landuse and development, i.e. settlements, transport routes, recreational / tourist destinations, existing wind farms, landcover (forestry / agriculture) and the character of the existing landscape and seascape, including designated landscapes.

Site survey, desk-based analysis and computer technology (Windfarm Resoft software) will be used to assist and focus the design and assessment process through the use of maps, ZTV plots and visualisations including photographs, wirelines and photomontages.

A preliminary list of viewpoints developed from consultation with Argyll and Bute Council and SNH is provided in Table 6-1. Locations of these viewpoints are shown in Figure 6-3.

**Table 6-1 Suggested list of viewpoints**

<table>
<thead>
<tr>
<th>Viewpoint Location</th>
<th>6. Kilchiaran</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Machir Bay</td>
<td>7. BeinnTart a’ Mhill</td>
</tr>
<tr>
<td>2. Kilchoman Settlement</td>
<td>8. Mull of Oa</td>
</tr>
<tr>
<td>4. Saligo Bay Picnic Site</td>
<td>10. Colonsay: Oransay Priory</td>
</tr>
<tr>
<td>5. Portnahaven</td>
<td></td>
</tr>
</tbody>
</table>

The scope of the LSVIA is provided in Table 6-2.
Table 6-2 Summary of proposed scope of LSVIA assessment

<table>
<thead>
<tr>
<th>Environmental topic</th>
<th>Proposed scope of assessment</th>
<th>Element proposed to be scoped out</th>
</tr>
</thead>
</table>
| Landscape / Seascape | Indirect landscape / seascape effects, resulting from offshore works affecting:  
  Landscape / seascape characteristics – limited to key perceptual characteristics as can be perceived from the land and coastal areas.  
  Landscape / seascape character – limited to key perceptual characteristics as can be perceived from the land and coastal areas and held to have a strong influence on landscape character. | Direct landscape impacts, resulting from onshore works affecting: landscape / seascape character and designations. |
| Landscape / Seascape Designations | Landscape / seascape designations - impacts on the policy aims and management guidelines of landscape designations through consideration of the landscape impacts likely within these areas:  
  National Scenic Areas  
  Areas of Panoramic Quality  
  Gardens and Designed Landscapes | Direct landscape effects, resulting from offshore works affecting:  
  Landscape elements and fabric as essentially ‘no landscape fabric / elements’ other than the ‘sea’ within the offshore wind farm site area. |
| Visual Amenity | Visual effects on the views and visual amenity experienced from within the study area and particularly the Machir Bay, settlements, and recreational opportunities along the western coastline of Islay, closest to the wind farm. Visual receptors would include:  
  Residents in houses and settlements, including the public realm of towns and villages;  
  Travellers / road Users: A846 and ferry terminals and routes;  
  Recreational / tourists: hillwalkers, bird watchers, golfers, cyclists, horse riders, yachts / sailing / surfers, and people on the beach / shoreline area; and  
  Tourist destinations and local attractions (cultural heritage, gardens, beaches, picnic sites and viewpoints). | Areas outside the ZTV where no view of the wind farm would be possible.  
  (This would not exclude consideration of sequential cumulative effects). |
| Cumulative Visual Amenity | Cumulative landscape / seascape and visual effects occurring on the above receptors within the study area. | Areas outside the ZTV where no view of the wind farm would be possible.  
  (This would not exclude consideration of sequential cumulative effects). |

6.4.5. Potential Impacts

Indirect effects on the landscape / seascape could potentially affect the key perceptual characteristics such as a sense of ‘openness’ and key characteristic views typical of Islay, Jura and Colonsay. National and local landscape designations such as NSAs and Areas of Panoramic Quality may also be indirectly affected by views of the wind farm.
Potential impacts on Landscape, Seascape and Visual Amenity which will be investigated are:

6.4.5.1. Construction (may also occur during decommissioning)
- The effects of construction activity on landscape, seascape and visual receptor groups

6.4.5.2. Operation
- The effects of wind turbine operation on landscape, seascape and visual receptor groups

6.4.6. Cumulative Impacts
The search area for the cumulative assessment will be based on a 60 km radius circle from the centre of the proposed site. Currently, there are no other on or offshore wind farm sites within this search area (including existing, under construction, consented, in planning or at scoping stage, within this search area).

6.4.7. Potential Mitigation
The landscape design and mitigation options for an offshore wind farm are usually constrained by other factors, such as the geology and geomorphology of the sea floor and marine tidal aspects. However, wherever possible a design-led approach would be adopted through collaboration between the landscape architects and the project engineers as follows:

- Landscape design and mitigation to avoid or minimise potential adverse impacts
- Design consideration of the turbine grid orientation, size, number and layout of the proposed Islay Offshore Wind Farm
- Possible opportunities for landscape design and enhancement
- Design consideration of artistic / event and recreational opportunities

Landscape design and mitigation opportunities would take account of existing guidance in related planning documents and policies.

6.5. Tourism and Recreation

6.5.1. Introduction
Tourism is important to the local economy of Islay and a detailed assessment of potential impacts would be required. Consultation has begun; two meetings were held with Argyll and Bute Council on 24 March 2009 and 16 December 2009 and project details were sent to the RYA on 15 April 2009. Consultation with the relevant consultees will continue throughout the project.

6.5.2. Baseline Description
Visit Scotland statistics show that during 2008 UK residents made 1.64 million tourism trips to Argyll, The Isles, Loch Lomond and Forth Valley spending £329 million. Visitors from overseas took 0.29 million trips and spent £89 million in the area. Tourism related employment accounts for 10.7% of jobs in the area (Visit Scotland, 2008).

The SNH-commissioned review of marine and coastal recreation in Scotland (Land Use Consultants, 2006) indicates that the most popular specialist activities on the Scottish coastline are walking, sea fishing, sailing, kayaking, canoeing, and wildlife and bird watching. Coastal golf courses are also popular sites for recreation. Recreational sailing routes are shown on Figure 6-5.
Figure: 6.5

Islay Offshore Wind Farm
Recreational Facilities

Legend
- Islay Offshore Wind Farm Proposed Site Boundary
- Bathing Waters (Scottish Environment Protection Agency 2010)
- Cruising Route (Royal Yachting Association 2010)
- Route 78 National Cycle Network (Sustrans 2010)
- Marina (Royal Yachting Association 2010)
- RYA Club (Royal Yachting Association 2010)
- Golf Course (Kintyre, Islay, Gigha only) (Indicative)

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On Islay itself, there is a golf course at Machrie and the coastal area is popular for recreational activities such as sailing, kayaking, and surfing. In addition, Islay has a successful ecotourism industry with a range of activities including boat tours to view marine birds, whales, sharks, dolphins and porpoises.

6.5.3. Guidance

There is no specific guidance for assessing the impact of offshore wind farms on Tourism and Recreation. Relevant reports which will be referred to during the EIA are provided in the Proposed Scope of Assessment.

6.5.4. Proposed Scope of Assessment

The EIA will include an assessment of the tourism sector in Argyll and Bute with a focus on coastal tourism. Potential impacts of the wind farm will be assessed by reference to studies of operational wind farms in the UK and Europe.

The following data sources will be referred to during the EIA process:

- Glasgow Caledonian University (2007) Economic Impact of Wind Farms on Scottish Tourism
- Scottish Renewables and the British Wind Energy Association (2002) Tourist Attitudes Towards Wind Farms
- Ladenburg et al., (2006) Socioeconomic Effects: Positive Attitudes in Local Communities
- Consultation with Argyll and Bute Council, Visit Scotland, local recreational groups and the community via public exhibitions, will provide information on current and proposed activities which may be affected by the wind farm.

6.5.5. Potential Impacts

Potential impacts on Tourism and Recreation which will be investigated are:

6.5.5.1. Construction (may also occur during decommissioning)

- Visual impacts
- Temporary disruption of offshore tourism and recreation

6.5.5.2. Operation

- Visual impacts
- Site access for offshore tourism and recreation
- Marine navigational safety

6.5.6. Cumulative Impacts

The need to assess tourism and recreational impacts cumulatively will be discussed with relevant consultees.

6.5.7. Potential Mitigation

A desk study and consultation will be undertaken to gain the views of the local tourist industry, and potentially consider ways of benefiting it.
6.6. Socio-Economics

6.6.1. Introduction
Much of the open coastline on the west coast of Scotland is sparsely populated. Industries such as agriculture and fishing which have traditionally been important on the west coast of Scotland are being replaced by the tourism and recreation industry.

Offshore wind farms offer the potential for significant positive socio-economic benefits, through job creation locally and nationally, during both the construction and operational phases of the project. The turbine manufacturing plant at Machrihanish, on the nearby Kintyre peninsula, Skykon Towers (formerly Welcon Towers) designs, builds and manufactures turbines and foundations. Currently the company employs approximately 115 people and is looking to recruit further.

6.6.2. Baseline Description
Islay has a population of approximately 3,500 as reported in 2008 (ARC, 2010). Islay is recognised as a ‘fragile’ area due to a relatively weak economy and past population decline (HIE, 2008). The island’s economy has traditionally been based on agriculture, crofting and fishing, however, the most important sectors of Islay’s economy in terms of employment are now the public sector, retail and tourism and the eight whisky distilleries on the Island (ARC, 2010).

6.6.3. Guidance
There is no specific guidance for assessing the impact of offshore wind farms on socio-economics. Relevant reports which will be referred to during the EIA are provided in the Proposed Scope of Assessment.

6.6.4. Proposed Scope of Assessment
The position and performance of Argyll and Bute’s economy and its prospects for the future will be reviewed. This will include information on area, population, economic activity, employment and education and skills. Data on the socio-economic impacts of existing offshore wind farms will be collated in consultation with relevant organisations, e.g. Argyll and Bute Council, the local fishing community via the Fisheries Liaison Officer (FLO), local communities and local groups such as the Islay Energy Trust, and via public exhibitions. The potential for job creation and local training opportunities will be assessed. Local port facilities will be assessed for their suitability for construction and operation activities.

The following data sources will be reviewed as part of the EIA process:

- The Crown Estate (2008) Socio-Economic Indicators of Marine-Related Activities in the UK Economy
- Argyll Renewables Communities (ARC) (2010). Socio-economic Impact Assessment Scoping Study Produced by SQWenergy and SQWconsulting

6.6.5. Potential Impacts
The economic impact of the project would be most significant during the construction phase which may last three years; however potential benefits over the 25 year expected lifespan of the wind farm will also be assessed.
Potential impacts on Socio-Economics, both positive and negative, which will be investigated, are:

6.6.5.1. Construction (may also occur during decommissioning)
- Increased employment in construction and supporting industries
- Increased expenditure through supply of goods and services required to develop the wind farm
- Change in population structure and consequent impacts on infrastructure requirements
- Academic research opportunities

6.6.5.2. Operation
- Increased employment due to maintenance and operation
- Change in population structure and consequent impacts on infrastructure requirements
- Academic research opportunities

Impacts on tourism and commercial fisheries are dealt with in the relevant sections of this Scoping Document.

6.6.6. Cumulative Impacts

The assessment of impacts would be undertaken on a site-specific and cumulative basis to include the proposed Islay, Kintyre and Argyll Array Offshore Wind Farms in addition to proposed onshore developments.

6.6.7. Potential Mitigation

Possible mitigation may include:
- Use of local port facilities where possible
- Use of local vessels for survey and guard work where possible
- Consideration of employment and training for operations and maintenance work

6.7. Commercial Fisheries

6.7.1. Introduction

Fishing within the coastal waters of Islay is done mostly by small (under 10 m) vessels using a variety of gears.

To date, meetings have been held with Clyde Fishermen’s Association on 22 April 2009 and 2 September 2009 and Scottish Fishermen’s Federation on 20 May 2009 and 2 September 2009. Project details were sent to the Association of Salmon Fishery Boards on 15 April 2009.

6.7.2. Baseline Description

Landings data for all species are collected and collated according to International Council for the Exploration of the Sea (ICES) statistical rectangle by the Scottish Fisheries Protection Agency / Marine Scotland and the Marine and Fisheries Agency (MFA). The primary source of these data is the European Community (EC) daily log sheets which vessels over 10 m are required to submit; under current legislation under 10 m vessels are not required to complete these log sheets. Local fisheries officers do however collect dockside and first sale information for all vessels. Other data sources include satellite tracking of EU licensed fishing
vessels over 15 m in length and surveillance sightings recorded by Scottish fishery protection air and surface craft.

As most of the fishing activity will be by under 10 m vessels, data on the composition of the fishing fleet will largely be determined through consultation with the local fishing fleet and fish merchants and agents. This will be supplemented by information from the MFA, IFGs and surveillance sightings. Under MCA guidance, data on vessel movement for the navigation assessment would be obtained via site-specific radar studies.

The location of the proposed Islay site in relation to ICES Rectangles is shown in Figure 6-6.

6.7.3. Guidance

The commercial fisheries assessment will be carried out in line with, but not limited to, the following guidance:


6.7.4. Proposed Scope of Assessment

Well-targeted and detailed consultation with commercial fishermen will be carried out from an early stage of the project. Guidance on consultation is provided by BERR (2008).

Liaison with fisheries organisations will primarily be via the Fisheries Industry Representative (FIR) representing the local fishing industry, and the FLO acting on behalf of SSE Renewables.

The ES will assess impacts at a national level, i.e. west coast of Scotland, a regional level i.e. within ICES Rectangles 39E2, 39E3, 39E4, 40E2, 40E3, 40E4, 41E2, 41E3, 41E4, at a local level i.e. within a radius of 15 Nm around the site and within the site itself.

The key concerns for local fishermen are likely to be:

- Loss of access to fishing grounds during construction
- Displacement of fishing effort during construction (to less profitable grounds or grounds already fished)
- Elevated running costs due to longer steaming distances
- Impacts on commercially exploited species
- The ability of fishing vessels to operate within wind farms during operation
- Potential gear hooking risks

If it is found that recreational and commercial salmon fishing may be affected, impacts will be appropriately addressed.

Full use will be made of information from the Fisheries Statistics Unit (part of the Marine and Fisheries Agency) including fisheries surveillance information, landings and fishing effort data for relevant ICES sub-rectangles and registered vessels lists. These data will be supplemented by data collected by the FLO, including interviews with local fisheries inspectors. Results of detailed discussion with the fishermen themselves will also be incorporated into the assessment. Experience suggests that this is best achieved through regular meetings and visits to relevant ports and landing places by the FLO, enabling a good working relationship to be established. This could be supplemented by fact-finding trips to sea on board inshore fishing vessels.
The ES will include:

- An assessment of the importance of the area in terms of fisheries resources
- Details of vessels using the area and their gears, operating patterns and practices
- Identification of fishing industry concerns
- A review of future changes which may affect the area, i.e. changes in legislation, stock levels, economics and the availability of new fisheries
- An evaluation of the impact of the wind farm on commercial fisheries

Assessment methods would be discussed and agreed with relevant consultees including Marine Scotland and SFF.

### 6.7.5. Potential Impacts

Potential impacts on Commercial Fisheries, both positive and negative, which will be investigated, are:

#### 6.7.5.1. Construction (may also apply to decommissioning)

- Potential for seabed objects and obstructions
- Impacts on commercially exploited species
- Safety / interference issues due to construction vessels and equipment
- Increased steaming time to fishing grounds
- Complete loss or restricted access to fishing grounds

#### 6.7.5.2. Operation

- Potential for seabed objects and obstructions
- Impacts on commercially exploited species
- Navigational safety issues
- Practical limitations on access to the wind farm areas by fishing vessels
- Potential obstruction to trawls and fixed gear anchors caused by subsea infrastructure
- Possible enhancement of the fishery through addition of artificial ‘reef’ areas

### 6.7.6. Cumulative Impacts

Co-operation between developers of the three west coast wind farm sites, Islay, Kintyre and Argyll Array, will allow data to be pooled and judgements made on cumulative impacts. A study area will be set on the basis of consultation with relevant organisations and is expected to follow ICES Rectangle boundaries.

### 6.7.7. Potential Mitigation

The following mitigation measures would be considered:

- Contractors undertaking all works would comply with standard offshore policies which prohibit discarding objects overboard and require rapid recovery should objects be dropped accidentally
- If pile driving is required, standard procedures to minimise environmental impacts, such as a soft-start to piling, would be utilised
Fishermen would be informed of survey works and construction schedules through the appropriate channels.

Studies of operational wind farms have shown a very real prospect that the presence of foundations can provide habitat enhancement and have a beneficial impact on local fish resources. Available data, including video footage of fishermen successfully working within operational wind farms, would be disseminated to fishermen.

6.8. In-Air Noise

6.8.1. Introduction

The greatest noise emissions from the development of the proposed Islay Offshore Wind Farm would occur during construction and decommissioning. Noise sources could include piling equipment (if used), quayside operations and component delivery to site.

Noise during operation is generally at a low level and modern wind turbines have significantly reduced noise levels compared with earlier models.

6.8.2. Guidance

The in-air noise assessment will be carried out in line with, but not limited to, the following legislation and guidance:

- Energy Technology Support Unit (ETSU) (1996) The Assessment and Rating of Noise from Wind Farms
- Argyll and Bute Council’s Environmental Health Department Guidance

6.8.3. Baseline Description

Islay has a total population of 3,500 as reported in 2008, with approximately 820 people living in Islay West. The proposed Islay Offshore Wind Farm is located 13 km from shore, a rural area with minimal industrialisation (ARC, 2010). Sensitive receptors to in-air acoustic impacts will include local residents, businesses and tourists.

6.8.4. Proposed Scope of Assessment

If required detailed baseline noise survey will be conducted at representative locations onshore following consultation with Argyll and Bute Council with the following proposed outputs:

- Identification and agreement on the location of the nearest sensitive receptors
- Survey of background noise levels at each of the identified receptors, in parallel with wind speed measurements
- Agreement of noise limits for each receptor with Argyll and Bute Council
- Prediction of noise levels received at each receptor using a recognised computer model that implements the calculation method specified in ISO 9613: Acoustics – Attenuation of sound during propagation outdoors (ISO, 1996)
- Comparison of predicted levels with agreed noise limits

Effects of ground and structure borne vibration and low frequency noise will be addressed for the construction, operation and decommissioning of the project.
6.8.5. Potential Impacts
Potential impacts on In-Air Noise which will be investigated are:

6.8.5.1. Construction (may also apply during decommissioning)
- Impacts on recreational users of the area
- Impacts on those living and working in Islay West

6.8.5.2. Operation
- Operational noise from turbines (not anticipated to be significant due to distance offshore)

6.8.6. Cumulative Impacts
If required a cumulative assessment for all three of the west coast wind farm projects, Islay, Kintyre and Argyll Array, would be completed. The ability to carry out construction activities at two or more sites concurrently would be reviewed.

6.8.7. Potential Mitigation
In order to minimise noise levels, the following mitigation measures would be considered:
- Potential noise impacts would be considered in the design of the wind farm
- Noise would be considered when choosing plant
- Equipment would be maintained in good working order and fitted with silences, mufflers or acoustic covers where appropriate
- A site construction noise policy would be implemented

6.9. Other Marine Users
This section of the ES will consider other marine users that could potentially be affected by the development of the wind farm.

A map showing the locations of offshore activities in the area is provided as Figure 6-7. Fishing, sailing and tourism are discussed earlier in this report.

6.9.1. Offshore Wind Farms
As well as the proposed Islay Offshore Wind Farm, SSE Renewables are developing the proposed Kintyre Offshore Wind Farm, 59 km southeast of Islay. This wind farm is expected to have an installed capacity of 378 MW.

The Argyll Array Offshore Wind Farm is situated 57 km north of the proposed Islay Offshore Wind Farm. Argyll Array is being developed by ScottishPower Renewables and is expected to have an installed capacity of up to 1,800 MW

6.9.2. Cables and Pipelines
The Hibernia SEGA fibre optic cable runs from Southport in England to Herring Cove in Canada and passes 24.4 km west of the proposed Islay Offshore Wind Farm.

6.9.3. Oil and Gas Infrastructure
There is no oil or gas infrastructure within the study area. There are also no existing or proposed oil and gas licence blocks within the wider area.
Legend
- Islay Offshore Wind Farm Proposed Site Boundary
- Kintyre Offshore Wind Farm Proposed Site Boundary
- Argyll Array Offshore Wind Farm Proposed Site Boundary (Scottish Power Renewables 2009)
- Disposal Site - Spoil
- Subsea Cable
- Proposed Sound of Islay Tidal Site (Indicative) (Scottish Power Renewables UK Ltd. Scoping Report 2008)
- Limpet Wave Device (Voith Hydro Wavegen Limited 2010)
- Blackstones Wave Rider Buoy (http://map.cefasdirect.co.uk/wavenetmapping)

UK Offshore Development
Figure: 6.7
Islay Offshore Wind Farm Other Marine Users
File: ISY_EGIS_OtherMarineUsers_01_v04
Rev: 4 Date: 11/03/10 By: KB Checked: KW
Scale: 1:800,000 A4
Datum: WGS 1984 Projection: UTM Zone 29N
6.9.4. Marine Aggregate Extraction

There is no current or proposed aggregate extraction dredging activity within the area; seabed sediments are highly variable and not suited to extraction.

6.9.5. Dredging and Sea Disposal

Licensed marine disposal sites are shown in Figure 6-7. Sites generally receive ‘clean’ marine sediments which arise as a result of dredging in inshore waters.

There are a number of munitions marine disposal sites on the west coast of Scotland dating back to the World Wars. Disposal is not ongoing and the nearest site lies at least 48 km south of the proposed Islay Offshore Wind Farm (Beaufort’s Dyke).

6.9.6. Other Renewable Energy Sites

As well as an excellent wind resource, the west coast of Scotland provides a wave and tidal resource which is being utilised by renewable energy developers (Figure 6-7).

The LIMPET (Land Installed Marine Power Energy Transformer) wave energy device, owned by Voith Hydro Wavegen Ltd., was installed on the shoreline of the Rhinns of Islay in 2000. The LIMPET is the world’s first commercial scale energy plant.

ScottishPower Renewables is proposing to develop a Demonstration Tidal Site in the Sound of Islay with the intention of deploying a 10 MW array by 2012. A Scoping Report was submitted in August 2008.

The proposed Islay Tidal Energy Project, being developed by DP Energy, is located approximately 8 km west of the south west tip of Islay and would extend over an area of approximately 8 km². When fully developed, the project is expected to have an installed capacity of more than 400 MW. A Scoping Report for this project was submitted in May 2009.

Other wave and tidal developers are known to be interested in the development of sites off the west coast of Scotland and off Antrim in Northern Ireland. Those projects in the planning system would be considered within the cumulative assessment.

In order to develop Scotland’s wave and tidal resource in a strategic manner, a Strategic Environmental Assessment (SEA) for Wave and Tidal Energy was undertaken for the Scottish Government in 2007 (Faber Maunsell and Metoc, 2007). The SEA is being used to develop relevant planning guidance and to provide information to developers and regulators on the best sites for development. The findings of the SEA have been incorporated into the Marine Energy Policy Statement for Scotland.

The Northern Ireland Energy Minister announced the release of a draft Department of Enterprise, Trade and Investment (DETI) Strategic Offshore Renewable Energy Action Plan 2009-2020 and associated Strategic Environmental Assessment (SEA) in December 2009 (Faber Maunsell and Metoc, 2009). The SEA has identified key actions including a cross departmental approach to addressing strategic data and knowledge gaps, a ‘deploy and monitor’ phased approach to the installation of offshore renewable technologies, locational guidance for developers and a project level mitigation strategy to ensure that the mitigating actions identified in the SEA are considered at the project stage of development.
7. SUMMARY

This Scoping Document has described the proposed Islay Offshore Wind Farm project and outlined the consenting process and relevant legislation. For each area of the physical, biological and human environment, a description of consultations to date, baseline conditions, guidance, survey methodologies and a proposed scope for the impact assessment has been provided. Through this process, key issues for the project have been identified.

The responses to this Scoping Document will inform the detailed methodology for each aspect of the impact assessment and, at each stage, dialogue will be maintained with statutory bodies and key stakeholders to ensure that methods are both appropriate and robust.

Cumulative assessment is being addressed through regular consultation with the West Coast Developers Group and The Crown Estate in order to ensure that methods of data collection and analysis are compatible and that potential cumulative issues are identified at an early stage. Collaborative studies could be undertaken where appropriate.

Comments on this document are welcomed and consultation with appropriate bodies will be ongoing throughout the process of environmental impact assessment.
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