

# 1 Project Background

## 1.1 Introduction

### 1.1.1 Overview of the Project and Environmental Statement

1.1.1.1 In January 2010, Moray Offshore Renewables Limited (MORL) was awarded a Zone Development Agreement (ZDA) by The Crown Estate to develop Zone 1 of the nine UK offshore wind Round 3 zones (the MORL Zone). Zone 1 is located in the outer Moray Firth within the UK Renewable Energy Zone (REZ) (Figure 1.1-1, Volume 6 a). Detailed analysis of the MORL Zone identified two separate development areas, the Eastern Development Area (EDA) and the Western Development Area (WDA) (Figure 1.1-2, Volume 6 a). It was decided to develop the EDA first because of existing spatial constraints to wind farm development in the WDA (see 2.2.3 for more detail in Chapter 2.2: Project Description). Within the EDA, three offshore wind farm sites are being proposed:

- **Telford Offshore Wind Farm** (Telford), for which consents for construction and operation are being applied for by Telford Offshore Windfarm Limited;
- **Stevenson Offshore Wind Farm** (Stevenson), for which consents for construction and operation are being applied for by Stevenson Offshore Windfarm Limited; and
- **MacColl Offshore Wind Farm** (MacColl), for which consents for construction and operation are being applied for by MacColl Offshore Windfarm Limited.

1.1.1.2 These three wind farms are collectively referred to as the three proposed wind farms in this Environmental Statement (ES).

1.1.1.3 In December 2010, MORL signed Agreements for Lease (AfL) with The Crown Estate for each of the three proposed wind farm sites.

1.1.1.4 Transmission infrastructure (referring to both offshore and onshore electrical transmission), which is required to transfer the power from the three sites to a connection to the National Grid, is also being proposed. Consent for the construction of this infrastructure is being applied for by MORL. MORL may construct the offshore and, if required, the onshore transmission infrastructure, but these assets will ultimately be transferred to and operated by an Offshore Transmission Owner (OFTO).

1.1.1.5 This document constitutes an ES for the 'Project', which is defined as up to three wind farm sites (Telford, Stevenson and MacColl) within the EDA, together with the offshore and onshore transmission infrastructure. The approach to assessment of the Project in this ES is set out in Chapter 1.3 (Environmental Impact Assessment).

1.1.1.6 This ES details the outcomes of the Environmental Impact Assessment (EIA), which is required for the Project under EU Directive 2011/92/EU (which codifies Directive 85/337/EEC, as amended by Directive 97/11/EC and Directive 2003/35/EC). These directives are transposed into national law in the Marine Works (Environmental Impact Assessment) Regulations 2007, the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 and the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011.

1.1.1.7 This ES is prepared to support various applications for consent required for the Project and is intended to clearly inform stakeholders of any likely significant effects, mitigation measures and residual effects expected to result from the Project.

1.1.1.8 The consents that are being sought are detailed in 1.1.6 of this Chapter.

### **1.1.2 Structure of the Environmental Statement**

1.1.2.1 This ES has been organised into separate volumes to account for its size and to ease the readability of the document, allowing simple navigation between related chapters.

1.1.2.2 **Volume 1** – Non Technical Summary.

1.1.2.3 **Volume 2** – The Project and Description of the Environment.

1.1.2.4 **Volume 3** – Offshore Generating Station Impact Assessment.

1.1.2.5 **Volume 4** – Transmission Infrastructure Impact Assessment.

1.1.2.6 **Volume 5** – Whole Project Impact Assessment and Cumulative Impact Assessment.

1.1.2.7 **Volume 6 a and Volume 6 b** – Figures.

1.1.2.8 **Volume 7** – Seascape, Landscape Visual Impact Assessment Figures and Photomontages.

1.1.2.9 **Volume 8 to 11** – Technical Appendices. 1.1.2.10 Confidential Appendix – Separate Technical Appendix with Terrestrial Ecology Confidential Information.

#### **Non-Technical Summary (Volume 1)**

1.1.2.10 A standalone Non-Technical Summary (NTS) of this ES has been produced. This document provides, in simple non-technical language, an overview of the Project and a summary of the key findings from this ES.

#### **Environmental Statement (Volumes 2 –7)**

1.1.2.11 This ES provides detailed information on the Project, the baseline environment and an assessment of the likely significant effects that may occur from the construction, operation and decommissioning phases of the Project. Further details on the approach taken throughout the EIA process can be found in Chapter 1.3.

1.1.2.12 An outline of the overall format of this ES is given below.

1.1.2.13 **Chapter 1 (Volume 2)** of this ES forms the Project background, providing an introduction to the Project and the context for the EIA. This chapter specifically covers the following:

- The policy, legislative and planning context;
- The approach to the EIA; and
- A summary of the stakeholder engagement and consultation undertaken to date.

- 1.1.2.14 **Chapter 2 (Volume 2)** of this ES details the site selection process and the alternatives considered, as well as the overall Project description, specifically covering the following:
- The site selection process and alternatives considered;
  - The Project design and the construction, operation and decommissioning process for the wind farm and associated infrastructure; and
  - The application of Rochdale Envelope principles.
- 1.1.2.15 **Chapters 3–5 (Volume 2)** of this ES characterise the development area, describing baseline conditions for each aspect of the environment likely to be significantly affected by the Project.
- 1.1.2.16 **Chapters 6–11 (Volumes 3 and 4)** of this ES describe the results of the impact assessment in relation to physical, biological and human receptors that are likely to be significantly affected by the Project. Impact assessments for the offshore generating station and transmission infrastructure have been presented separately to aid the future partitioning of transmission infrastructure to an OFTO. Each impact assessment chapter for the offshore generating station is structured accordingly:
- Summary – Key impact assessment outputs;
  - Introduction – Introduces the topic under discussion;
  - Rochdale Envelope parameters – Sets out the realistic worst case scenario in terms of the Project's parameters for the EIA discipline being assessed;
  - EIA Methodology – Description of the impact assessment methodology utilised;
  - Primary Impact Assessment – Assessment of the likely significant effects arising from development of the three wind farm sites combined, *i.e.* the EDA;
  - Secondary Impact Assessment – Assessment of the likely significant effects arising from development of each individual wind farm site (Telford, Stevenson and MacColl);
  - Sensitivity Analysis – Assessment of the likely significant effects arising from development permutations, *i.e.* the three proposed wind farm sites in combination (Telford plus Stevenson, Stevenson plus MacColl and Telford plus MacColl);
  - Proposed Mitigation – description of proposed mitigation measures during construction, operation and decommissioning phases, based upon likely significant effects;
  - Residual Effects – Significance of effect pre and post mitigation measures; and
  - Habitats Regulations Appraisal (HRA) – where impact assessment chapters consider the potential for effects on Natura 2000 sites, then effects on the Conservation Objectives of those sites are set out. The relevant disciplines to which HRA applies in this ES are Fish and Shellfish Ecology (Chapters 7.2, 10.2 and 14.2), Marine Mammals (Chapters 7.3, 10.3 and 14.3), Ornithology (Chapters 7.4, 10.4 and 14.4) and Terrestrial Ecology (Chapters 10.6 and 14.6). An HRA Summary chapter is also provided in Chapter 12.2.
- 1.1.2.17 Presentation of information on the impact assessments for the transmission infrastructure (Volume 4) will follow a slightly different format for some chapters.

i.e. the terrestrial chapters such as Hydrology, Geology and Hydrogeology and Terrestrial Ecology, as secondary assessment and sensitivity analysis is not required for these chapters.

- 1.1.2.18 **Chapter 12 (Volume 5)** of this ES is the Whole Project Assessment. MORL has assessed the effects of the Project (i.e. three proposed wind farms and transmission infrastructure (TI)), including such information as is available for the OnTI) as a whole. This chapter of the ES serves this purpose by bringing the results of the impact assessments together. An HRA Summary is also provided in relation to each of the relevant HRA disciplines in Chapter 12.2.
- 1.1.2.19 **Chapters 13–15 (Volume 5)** present the findings of Cumulative Impact Assessment (CIA), addressing likely significant effects that may arise as a result of interactions between the Project and other existing and reasonably foreseeable projects and activities. A concise list of the projects and activities considered within CIA can be found in Table 1.3-3, Chapter 1.3.
- 1.1.2.20 For certain topic areas / receptors, specialist technical studies or site surveys have been undertaken to help inform the EIA. The data associated with these studies and surveys is described in this ES and is provided in full within a series of Technical Appendices (Volumes 8 to 11).

### 1.1.3 Definition of Terms

- 1.1.3.1 For the purposes of this Environmental Statement and the assessment within, the definitions in Table 1.1–1 below have been used. A full Glossary of the terms used in this ES and a list of the Abbreviations used are located in the Preface to this ES.

**Table 1.1–1 MORL Definitions**

Term	Definition
<b>MORL</b>	Moray Offshore Renewables Limited (MORL), the body submitting the applications to the Project.
<b>This ES</b>	The environmental statement for the Telford, Stevenson and MacColl Offshore Wind Farms and Associated Transmission Infrastructure
<b>The Project</b>	The development proposal in its entirety, including three proposed wind farm sites and Transmission Infrastructure.
<b>MORL Zone</b>	The Round 3 Zone 1 area awarded to MORL by the Crown Estate which is comprised of the Eastern Development Area and Western Development Area (see Figure 1.1-1, Volume 6 a)
<b>Eastern Development Area (EDA)</b>	MORL Zone for which Section 36 applications will be applied for (see Figure 1.1-1, Volume 6 a, area shaded in red).
<b>Western Development Area (WDA)</b>	MORL Zone area to the west of the EDA. EIA has not been progressed on this area yet. (see Figure 1.1-1, Volume 6 a, area shaded in yellow).
<b>The three proposed wind farms</b>	Telford, Stevenson and MacColl; encompassing turbines / substructures / foundations and inter-array cables between turbines (See Figure 1.1-2, Volume 6 a)

Term	Definition
<b>Transmission infrastructure (TI)</b>	Includes both offshore and onshore elements from wind farm boundary (but also potentially within boundary) to connection at Peterhead; encompassing AC OSPs, AC / DC Converter OSPs, cabling between AC and AC / DC OSP, DC export cable offshore to landfall point at Fraserburgh continuing to Peterhead, onshore DC to AC converter substation(s) at Peterhead and finally cabling between converter substation and AC collector station.
<b>Offshore transmission infrastructure (OfTI)</b>	Offshore elements of Transmission Infrastructure (See Figure 1.1-4, Volume 6 a, area shaded in purple)
<b>Onshore transmission infrastructure (OnTI)</b>	Onshore elements of Transmission Infrastructure (See Figure 1.1-4, Volume 6 a, area shaded in pale green)
<b>Offshore Export Cable Route</b>	Offshore cable route study area (See Figure 1.1-4, Volume 6 a, area shaded in purple)
<b>Onshore Export Cable Route</b>	Onshore cable route study area (See Figure 1.1-4, Volume 6 a, area shaded in pale green)
<b>Export cable landfall</b>	Area at Fraserburgh Beach where the OfTI meets the OnTI.

#### 1.1.4 The Developers

- 1.1.4.1 MORL is a joint venture (JV) that was established by EDP Renewables (EDPR UK) and SeaEnergy Renewables Ltd. In June 2011, SeaEnergy Renewables Ltd was acquired by Repsol Nuevas Energias UK. MORL is now owned 67 % by EDPR UK and 33 % by Repsol Nuevas Energias UK.
- 1.1.4.2 The purpose of MORL is to develop and finance the projects within the MORL Zone. Special Purpose Vehicles (SPVs) have been established to consent, construct, operate and maintain the offshore wind farm sites within the EDA. These SPVs are Telford Offshore Wind Farm Limited, Stevenson Offshore Wind Farm Limited and MacColl Offshore Wind Farm Limited.
- 1.1.4.3 MORL will obtain the consent for and potentially construct the transmission infrastructure. However, depending on the build strategy, a subsidiary SPV may be designated these tasks.

#### 1.1.5 Summary of Project Details

##### Round 3 Zones

- 1.1.5.1 Zones were included within the UK offshore energy Strategic Environmental Assessment (SEA) for future leasing for offshore wind farms and licensing for offshore oil and gas and gas storage (DECC, 2009). The Government's plan, with respect to offshore wind was "to enable further rounds of offshore wind farm leasing in the UK Renewable Energy Zone.....with the objective of achieving some 25 GW of additional generation capacity by 2020". The alternatives considered within the SEA were:
1. Not to offer any areas for leasing / licensing;
  2. To proceed with a leasing and licensing programme; and
  3. To restrict the areas offered for leasing and licensing temporally or spatially.

1.1.5.2 The MORL Zone was identified, along with eight other zones, for the development of offshore wind by The Crown Estate (TCE). These zones were opened to competitive bid by The Crown Estate and developers were invited to submit applications to develop the zones. The identification of the zones was completed by The Crown Estate with assistance from their marine asset planning tool MaRS (Marine Resource System). *“MaRS is a decision support tool which interrogates third party data sets using GIS technology to identify potential areas for sectoral development. The tool produces three key outputs: site suitability for potential business activity, the sustainability value of that activity and financial analysis of the potential revenue to the business which will enable long term informed decision-making for marine development”* (The Crown Estate, 2010).

1.1.5.3 The assessment of the alternatives, considered the need / demand for the plan, whether the technologies and methods were available to reduce environmental damage compared to more traditional methods, were the potential geographical locations suitable and the proposed timing of plan implementation. The following provides a summary of the reasons why the Government considered the plan necessary:

- **Need:** it was determined that the plan was required to mitigate the increasing reliance on fuel imports from other countries as oil and gas fields declined and therefore increase domestic production of energy. The plan was required to meet the UKs contribution to European Union renewable energy consumption targets;
- **Technologies / methods:** it was determined that offshore wind technologies were constantly evolving with the introduction of efficient techniques that could reduce environmental footprints;
- **Location:** The locations are a function of the available wind resource, geological history and existing sensitivities; and
- **Timing:** Early implementation of the plan was determined to allow potential synergies between existing and new infrastructure.

#### Location

1.1.5.4 The EDA is located on the Smith Bank in the outer Moray Firth approximately 22 km (12 nm) from the Caithness coastline. The water depths range from 37–57 m (20 – 31 ftm). The MORL Zone itself covers 520 km<sup>2</sup> (281 nm<sup>2</sup>). Figure 1.1-3, Volume 6 a, provides details of site area and specific water depth within each wind farm site.

1.1.5.5 The transmission infrastructure (TI) will connect the three proposed wind farms to the National Grid via an onshore connection to the Peterhead Power Station. The export cable route has a landfall point at Fraserburgh Beach, which is 28.6 km in length (Figure 1.1-4, Volume 6 a). A preferred area has been identified (see Figure 1.1-5, Volume 6 a) for the location of the onshore substation(s) at Peterhead. Discussions are ongoing with landowners to determine the exact location and layout of the substation(s) on land within the preferred onshore substation area. This will be finalised following production of a masterplan by the owner / operator of the Peterhead Power Station compound which forms part of the preferred area.

1.1.5.6 Project timescales are detailed in Chapter 2.2 (Project Description) and Plate 2.2-3. However, in brief, construction is programmed to commence Q1 2015. Working to the worst case five year construction schedule, construction is due to be completed Q3 2020.

## Project Description

- 1.1.5.7 The three proposed wind farm sites, Telford, Stevenson and MacColl, will each have a maximum capacity of 500 MW *i.e.* the total capacity will not exceed 1,500 MW across the three sites. A summary of the infrastructure within each site is provided below:
- Wind turbines rated between 3.6 to 8 MW;
  - Wind turbine substructures and foundations, for which there are two potential concepts:
    - Jacket substructure with pin pile foundations;
    - Gravity Base Structure with a gravel bed foundation; and
  - Alternating current (AC) Inter-array cabling of a voltage between 33 and 66 kV.
- 1.1.5.8 The maximum capacity for the MORL Zone is 1,500 MW. Consent to construct up to a maximum total capacity of 1,500 MW across the three proposed wind farm sites is being sought. If MORL do not construct the full 1,500 MW within the three proposed wind farm sites, development of the WDA may be pursued in order to achieve 1,500 MW. The WDA is currently at the early stages of development and has not yet been progressed to EIA scoping. Details of the WDA have been included within this ES to allow for cumulative impact assessment.
- 1.1.5.9 A meteorological mast ('met mast') has been granted a marine licence which MORL intends to install within the EDA during 2012 to record meteorological data within the EDA *i.e.* wind speed, wind direction etc. There are plans to install a second meteorological mast although the location of the installation is currently unknown.
- 1.1.5.10 MORL has been offered a grid connection under the National Grid's Connection Agreement Process at the existing Peterhead Power Station. The connection agreement is phased over five years and rated at the target capacity of 1,500 MW.
- 1.1.5.11 Detail of the TI required is described in Chapter 2.2 (Project Description).

### 1.1.6 Consent Applications Submitted

- 1.1.6.1 An application for consent under Section 36 of the Electricity Act 1989 will be submitted for each of the wind farm sites, Telford, Stevenson and MacColl. These consents will allow MORL to build and operate the offshore wind farms. In addition, MORL will apply for a Marine Licence for each site. This licence will allow MORL to deposit wind farm infrastructure on the seabed. These primary consents together will enable the construction and operation of the infrastructure outlined in paragraphs 1.1.5.7 to 1.1.5.11 above and Chapter 2.2 (Project Description). A separate Marine Licence application is likely to be submitted for a second offshore met mast once a location is identified.
- 1.1.6.2 The TI will require a Marine Licence for the offshore works and a Town and Country Planning Permission for the onshore elements (from Mean Low Water Springs) will be required.
- 1.1.6.3 In addition to the key consents, MORL will apply for secondary consents for the Project, including a European Protected Species (EPS) Licence.

1.1.6.4 Relevant legislation and policy is explained further in Chapter 1.2 (Regulatory & Policy Context).

### **1.1.7 References**

DECC (2009) Offshore Energy SEA Environmental Report. Available from [http://www.offshore-sea.org.uk/site/scripts/book\\_info.php?consultationID=16&bookID=11](http://www.offshore-sea.org.uk/site/scripts/book_info.php?consultationID=16&bookID=11)

The Crown Estate (2010). Website: <http://www.thecrownestate.co.uk/>

## 1.2 Policy and Legislative Framework

### 1.2.1 Introduction

1.2.1.1 The determination of both the Section 36 and marine licence applications required for the Project involve a wide range of material considerations including:

- Climate Change and Energy Policy;
- Published and emerging Marine policy; and
- Relevant Development Plans and National Planning Policy.

1.2.1.2 This chapter sets out the policy context for the Project. In addition, it sets out the legislative framework within which this ES has been prepared. Technical Appendix 1.2 A sets out, in full, the relevant legislation. A separate Planning Statement, which accompanies the applications, sets out in detail the relevant matters for the determination of the applications including a comprehensive summary of the applicable Town and Country Planning policies. Due to the location of the three proposed wind farms, outwith 12 nm, and the location of much of the offshore transmission infrastructure within the 12 nm, then both UK and Scottish legislation and policy must be considered in the determination of the relevant applications. Decisions on the key consents will be taken by Scottish Ministers, Marine Scotland and Aberdeenshire Council as appropriate.

### 1.2.2 Climate Change and Energy Policy

#### International Context

The Kyoto Protocol

1.2.2.1 The United Nations "Earth Summit" held in Rio de Janeiro in 1992 established the need to control greenhouse gases and other emissions in light of rising levels of global warming and pollution. Following on from this the Kyoto Protocol was adopted in December 1997 at the United Nations Framework Convention on Climate Change. The Convention was ratified by the UK in 2002.

1.2.2.2 The aim of the Kyoto Protocol is to reduce emissions by developed countries of six principal man-made greenhouse gases overall to 5.2 % below the 1990 levels over the period 2008–2012. Under the Protocol the UK's commitment is for a reduction in greenhouse gas emissions of 12.5 % from 1990 levels by 2008–2012.

*20 by 2020: Europe's climate change opportunity*

1.2.2.3 In March 2007 the European Council endorsed an integrated approach to climate and energy policy that aims to combat climate change and increase the European Union's energy security while strengthening its competitiveness. In 2008 the European Commission published a series of climate and energy targets to be met by 2020, known as the "20–20–20" targets. These are:

- A reduction in EU greenhouse gas emissions of at least 20 % below 1990 levels;
- 20 % of EU energy consumption to come from renewable resources; and
- A 20 % reduction in primary energy use compared with projected levels, to be achieved by improving energy efficiency.

## Renewable Energy Directive 2009 / 28 / EC

- 1.2.2.4 The Renewable Energy Directive 2009 / 28 / EC implements the 20 20 by 2020 targets and places an obligation on the UK to generate 15 % of its total energy requirements from renewable energy by 2020.

### The UK Context

- 1.2.2.5 In order to achieve its commitments the Government has promoted renewable energy within its national policy framework and has put into place certain mechanisms to encourage the growth of electricity generation from renewable sources. These include provisions in the following legislation and policy documents:

- Renewables Obligation;
- Energy Act 2008;
- Climate Change Act 2008;
- The UK Renewable Energy Strategy 2009;
- The UK Low Carbon Transition Plan 2009; and
- UK Renewable Energy Roadmap 2011.

### Renewables Obligation (RO)

- 1.2.2.6 The RO is currently the main financial mechanism by which the UK Government incentivises the deployment of large-scale renewable electricity generation. Support is granted for 20 years which balances the need to provide investors with long-term certainty with the need to keep costs to consumers to a minimum. The RO forms an obligation on all UK electricity supply companies to source an increasing percentage of electricity from renewable sources each year.

- 1.2.2.7 In April 2010, the end date of the RO was extended from 2027 to 2037 for new projects so as to provide long-term certainty for investors and to ensure continued deployment of renewables to meet the UK's 2020 target and beyond.

- 1.2.2.8 The Department of Energy and Climate Change (DECC) published a consultation in 2010 seeking views on proposed changes to ROC bands under the England and Wales RO. The UK Government's response to the consultation published later in 2011 included the phasing of support for offshore wind projects. In 2011 the Scottish Government published its consultation: The Renewables Obligation (Scotland) Order 2011 Consultation on Review of ROC Bands. This document reflects the Scottish Government's aim that Scotland should generate the equivalent of 100 % of Scotland's gross annual electricity demand by 2020 by renewable sources. The consultation process has been the subject of detailed discussions between the Scottish Government, DECC and the Department of Enterprise, Trade and Investment in Northern Ireland (DETI) to ensure a consistent approach throughout the UK.

### Energy Act 2008

- 1.2.2.9 The Energy Act achieved Royal Assent on 26 November 2008. One of the main components of the Act is to strengthen the RO to drive greater and quicker development of renewables in the UK.

## Climate Change Act 2008

- 1.2.2.10 The Climate Change Act sets ambitious, legally binding targets for the UK to reduce greenhouse gas emissions which includes carbon dioxide emissions (CO<sub>2</sub>) by at least 80 % by 2050, relative to 1990 levels. The Act also requires a reduction in greenhouse gas emissions of at least 34 % by 2020. Latest provisional estimates show that since 1990 there has been a decrease in UK carbon dioxide emissions of around 23 %. If the UK is to meet its targets then further action to curb CO<sub>2</sub> emissions over the next few years is needed.

## The UK Renewable Energy Strategy 2009

- 1.2.2.11 The UK Renewable Energy Strategy proposed increasing the obligation on all UK electricity supply companies to source 30 % or more of electricity from renewable sources by 2020. The majority of this growth is expected to come from wind power.

## UK Renewable Energy Roadmap 2011

- 1.2.2.12 The UK Renewable Energy Roadmap 2011 sets out a comprehensive action plan to accelerate the UK's deployment and use of renewable energy in order to achieve the 2020 target, while driving down the cost of renewable energy over time. It confirms that even though the UK is starting from a low level, the UK is projected to meet the target to deliver 15 % of the UK's energy consumption from renewable sources by 2020.

- 1.2.2.13 In relation to offshore wind the Roadmap states that as of July 2011:
- The UK has 1.3 GW of operational capacity across 15 wind farms (which generated over 3 TWh during 2010); and
  - The offshore wind industry has the potential to bring forward between 10 and 26 GW by 2020 ('industry low' and 'industry high' scenarios), with a central range of up to 18 GW. Achieving the top of the central range would require an annual growth rate of up to 30 %. Beyond 2020 there is a very high potential for deployment with over 40 GW possible by 2030.

## Scotland Context

- 1.2.2.14 The Scottish Government has set ambitious renewable energy targets for Scotland over and above the UK wide obligations and targets set out above. In order to achieve these targets the Scottish Government has promoted legislation and has set out a policy framework for climate change and renewable energy. These include:
- Climate Change (Scotland) Act 2009;
  - Routemap for Renewable Energy 2011;
  - The National Planning Framework for Scotland 2 (NPF2); and
  - Choosing Our Future: Scotland's Sustainable Development Strategy.

## Climate Change (Scotland) Act 2009

- 1.2.2.15 By virtue of the Climate Change (Scotland) Act 2009, the Scottish Government created a statutory framework to implement a reduction of CO<sub>2</sub> emissions of 42 % from 1990 levels by 2020 and at least 80 % from 1990 levels by 2050.

## Routemap for Renewable Energy 2011

1.2.2.16 The Routemap for Renewable Energy in Scotland 2011 is an update and extension to the Scottish Renewables Action Plan 2009. This updated and expanded Routemap reflects the challenge of Scotland's new target to meet an equivalent of 100 % demand for electricity from renewable energy by 2020 (and at least 30 % overall energy demand from renewables by 2020), as well as its target of 11 % renewable heat. In addition, the Routemap demonstrates that with 25 % of Europe's offshore wind potential, the manufacturing, supply chain, job creation and training opportunities present Scotland with scope for sustainable economic growth.

## The National Planning Framework for Scotland 2 (NPF2)

1.2.2.17 The Scottish Government published the NPF2 in 2009. The Framework sets out the spatial strategy for Scotland to 2030. It identifies tackling climate change and reducing dependence on finite fossil fuels as two of the major global challenges of our time. The 2030 vision for Scotland is to promote a greener Scotland by contributing to the achievement of climate change targets. Specifically, in relation to the renewable energy strategy, the Scottish Government commits to establishing Scotland as a leading location for the development of renewable energy technology and an energy exporter over the long term. It encourages a mix of renewable energy technologies with a growing contribution from offshore wind amongst others. The Moray Firth is identified as one of the locations with potential for the development of offshore wind farms.

## Choosing Our Future: Scotland's Sustainable Development Strategy 2005

1.2.2.18 Choosing Our Future: Scotland's Sustainable Development Strategy identifies four main priorities in response to the challenge of sustainable development. One of these priorities relates to climate change and energy and the need to secure a profound change in the way we generate and use energy, capitalising on Scotland's resources of renewable energy (including offshore wind) and reducing greenhouse gas emissions.

### **1.2.3 Marine Planning Policy Context**

1.2.3.1 Paragraphs 1.2.3.3 to 1.2.3.8 consider the principal marine planning policy documents including:

- UK Marine Policy Statement 2011;
- Scotland's Draft National Marine Plan; and
- Scotland's Blue Seas, Green Energy.

1.2.3.2 The legislative framework for marine planning is set out in 1.2.4 (Legislative Framework).

### **The UK Context**

#### UK Marine Policy Statement 2011

1.2.3.3 The UK Marine Policy Statement 2011 (MPS) was jointly published by the UK and Scottish Governments, the Welsh Assembly and the Northern Ireland Administration with a view to helping to achieve the vision for clean, healthy,

safe, productive and biologically diverse oceans and seas. The UK Marine Policy Statement will support the formulation of Marine Plans to ensure that marine resources are used in a sustainable way and thereby:

- Promote sustainable economic development;
- Enable the UK's move towards a low-carbon economy, in order to mitigate the causes of climate change and ocean acidification and adapt to their effects;
- Ensure a sustainable marine environment which promotes healthy, functioning marine ecosystems and protects marine habitats, species and our heritage assets; and
- Contribute to the societal benefits of the marine area, including the sustainable use of marine resources to address local social and economic issues.

1.2.3.4 The MPS recognises that a secure, sustainable and affordable supply of energy is of central importance to the economic and social wellbeing of the UK, and that the marine environment will make an increasingly major contribution to the provision of the UK's energy supply and distribution. It also highlights that offshore wind is expected to provide the largest single renewable electricity contribution as we move towards 2020 and beyond.

1.2.3.5 The MPS sets out that when decision makers are examining and determining applications for energy infrastructure they should take into account:

- The national level of need for energy infrastructure as set out in NPF2 for Scotland;
- The UK's policy objective to maximise economic development of the UK's oil and gas resources, reflecting their importance to the UK's economic prosperity and security of energy supply;
- The positive wider environmental, societal and economic benefits of low carbon electricity generation, carbon capture and storage as key technologies for reducing carbon dioxide emissions;
- That the physical resources and features that form oil and gas fields, or suitable sites for gas or carbon dioxide storage, occur in relatively few locations and need first of all to be explored and can then only be exploited where they are found. Similarly, renewable energy resources can only be developed where the resource exists and where economically feasible;
- The potential impact of inward investment in offshore wind, wave, tidal stream and tidal range energy related manufacturing and deployment activity; as well as the impact of associated employment opportunities on the regeneration of local and national economies. All of these activities support the objective of developing the UK's low carbon manufacturing capability; and
- The UK's programme to support the development and deployment of Carbon Capture and Storage (CCS) and in particular, the need for suitable locations that provide for the permanent storage of carbon dioxide.

## Scotland Context

### Scotland's Draft National Marine Plan

- 1.2.3.6 The Scottish Government issued in 2011 a Pre-Consultation Draft of the National Marine Plan which must be drafted in conformity with the UK Marine Policy Statement. The draft plan sets out:
- Policies for sustainable development of Scotland's seas;
  - Policies on Nature Conservation Marine Protected Areas and other relevant conservation sites;
  - Economic, social and marine ecosystem objectives and further objectives for the mitigation and adaptation of climate change;
  - The condition of the Scottish marine area (or region) including a summary of the significant pressures and human impacts on the relevant area; and
  - Information relating to the policies appropriate to the plan.
- 1.2.3.7 Turning Scotland's renewable energy resources into a fully developed industry, contributing to the level of economic activity in Scotland and delivering climate change objectives is identified by the plan as a key challenge for the marine energy sector. The draft plan highlights that continued exploitation of energy sectors will remain essential for the future growth of the Scottish economy. The Scottish Government calculates that the low carbon sector in Scotland supported over 70,000 jobs in Scotland in 2008, but with concerted action, this could increase to around 130,000 by 2020. In addition, the plan recognises that in doing so the environmental impact from the construction and operation of offshore wind farms must be minimised.

### Scotland's *Blue Seas – Green Energy: A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters, 2011*

- 1.2.3.8 In March 2011 the Scottish Government published its sectoral marine plan for offshore wind energy in Scottish territorial waters entitled "Blue Seas – Green Energy: A Sectoral Marine Plan". The Plan contains proposals for offshore wind energy development in Scottish Territorial Waters at the regional level up to 2020 and beyond and recognises offshore wind as an integral element in Scotland's contribution towards action on climate change and the significant contribution it will make to Scotland's energy security. It notes that there is potential to generate 4.8 GW of electricity for two Round 3 sites in Scottish Offshore Waters, before 2020.

## 1.2.4 **Legislative Framework**

- 1.2.4.1 The three proposed wind farm sites are located within the UK Renewable Energy Zone (REZ). The Scottish Ministers are the relevant decision makers in respect of the Section 36 consents and marine licences required for the construction and operation of the wind farms.
- 1.2.4.2 There is no single consent which provides permission to construct infrastructure which spans offshore and onshore terrain. The relevant consents for the proposed development are outlined within this chapter.
- 1.2.4.3 Due to European legislation, it is not permissible for a developer to hold both a generation and transmission licence. The consequence of this is that a wind farm

owner cannot retain operational control of any transmission infrastructure. It is, however, permissible for the wind farm owner to construct and install transmission infrastructure assets and transfer these to an offshore transmission owner (OFTO) prior to operation. MORL, through an SPV, may choose a process known as the OFTO 'generator build' option and will transfer all relevant agreements, wayleaves and consents to the OFTO prior to operation. The other option is an OFTO-build strategy where agreements, wayleaves and consents will be transferred to the OFTO prior to construction of the transmission assets. At the present time it is MORL's intention to proceed by way of the 'generator build' option.

1.2.4.4 MORL have determined through the requirements contained in the Marine Works (Environmental Impact Assessment) Regulations 2007, the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (as amended) and the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 that the Project requires an EIA.

1.2.4.5 For a detailed account of all relevant legislation, see Technical Appendix 1.2 A.

#### **Electricity Act 1989 (Section 36)**

1.2.4.6 The construction and operation of a generating station such as the three proposed wind farms is subject to an application for consent to Marine Scotland (who manage the process on behalf of Scottish Ministers) under Section 36 of the Electricity Act 1989. The scope of these consents will include the wind turbines and inter-array cables.

1.2.4.7 Where a Section 36 consent is applied for, a declaration under Section 36 A (1) (as introduced by Section 99 of the Energy Act 2004) as respects rights of navigation may be made at the same time, in so far as, such rights are for navigation within the seaward limits of the territorial sea (12 nm) adjacent to Great Britain. This declaration allows for navigation rights to be extinguished during the construction phases of the generating stations, if granted by the Scottish Ministers. However, this section of the Energy Act does not extend to the Renewable Energy Zone (REZ) and therefore, it is not possible to use Section 36 A to obtain such a declaration.

1.2.4.8 Under Section 36 B of the Electricity Act 1989 (as introduced by Section 99 of the Energy Act 2004) the Scottish Ministers may not grant a Section 36 consent where they consider that the generating station would interfere with 'recognised sea lanes essential to international navigation'. In deciding whether consent for the three proposed wind farms will be granted, the Scottish Ministers must take into account how they intend to exercise their powers in relation, (1) to any application for a declaration to extinguish public rights of navigation under Section 36 A and (2) any application for a declaration of a safety zone under Section 95 of the Energy Act 2004 (see further below).

#### **Marine (Scotland) Act 2010 and the Marine and Coastal Access Act 2009**

1.2.4.9 The Marine (Scotland) Act 2010 (the MSA) provides a framework which will help balance competing demands in Scotland's seas. It contains provisions to protect and enhance the marine environment, but also includes measures to boost economic investment and growth in marine renewables. The main measures within the new framework include, marine planning, marine licensing, marine conservation, seal conservation and an updated method of enforcement.

- 1.2.4.10 Under this Act, the requirement for a Marine Licence was introduced. In effect, this replaces the requirement for consent under Section 5 of the Food and Environmental Protection Act 1985 (for the deposit of objects on the seabed below mean high water springs) and consent under Section 34 of the Coast Protection Act 1949 (for the deposit of objects which may endanger the safety of navigation). The primary objectives of the legislation are to protect both the marine ecosystem and human health and to minimise interference and nuisance to other legitimate users of the sea. Separate Marine Licenses are required for the generating station and offshore elements of the transmission infrastructure, both within and outwith the 12 nm limit. In terms of the MSA the Scottish Ministers are responsible for licensing various activities carried out in the Scottish inshore region of UK waters from 0–12 nm. They also have devolved responsibility for licensing various licensable activities taking place in the Scottish offshore region (12 to 200 nm) in terms of the Marine and Coastal Access Act 2009 (MCAA).
- 1.2.4.11 The MSA also replaces the outdated Conservation of Seals Act 1970, providing a new focus on one of Scotland's most important species (see paragraph 1.2.5.10 below).

## **Energy Act 2004**

### Safety Zones

- 1.2.4.12 The Energy Act 2004 makes provision for the establishment of safety zones around offshore renewable energy installations. Safety zones protect the safety of life at sea by reducing the potential risk of collision between vessels and offshore installations. This is achieved by establishing a zone within which it is a criminal offence to enter. However, certain vessels such as those required for construction and / or maintenance activities, are allowed to enter as is any vessel in an emergency situation. Different Safety Zones may be established for the main stages in the life of the renewable energy installation including construction, operation and decommissioning in line with the varying safety needs.
- 1.2.4.13 Under Section 95 of the Energy Act 2004, where a renewable energy installation is proposed to be constructed, and DECC (in consultation with Scottish Ministers) considers it appropriate for safety reasons, a notice declaring that specified areas are designated as safety zones may be issued. Such zones are intended to secure the safety of the renewable energy installation or other installations in the vicinity during construction, extension or decommissioning. Importantly, the purpose of the safety zone is also to secure the safety of individuals in or around the installation, vessels in the vicinity and individuals on such vessels.
- 1.2.4.14 The maximum permitted dimensions of Safety Zones are set out in the Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007.
- 1.2.4.15 In the case of offshore wind farms, safety zones up to a maximum of 500 m are permissible around each structure, from its outer edge at sea level during the construction and decommissioning phases as well as during 'major maintenance works'. Separately, a safety zone may be declared during the operation of the offshore renewable energy installations of up to a 50 m radius, measured from the outer edge at sea level of the proposed or existing wind turbine tower (or offshore substation platform). MORL will apply for declarations of safety zones for the construction period after the consent determinations for the wind farm and offshore transmission infrastructure.

- 1.2.4.16 Safety Zones in place on the Project will be implemented and communicated through standard protocol (i.e. Notice to Mariners)

#### Decommissioning

- 1.2.4.17 Sections 105 to 114 of the Energy Act 2004 introduced a decommissioning scheme for offshore wind and marine energy installations. Under the terms of the Act the Secretary of State may require a person who is responsible for one of these installations or lines to submit (and eventually carry out) a preliminary decommissioning programme for them. In addition, the Secretary of State can approve, modify or reject a programme, including any financial security provisions, which the responsible person proposes to provide. The Secretary of State is required to review the programme from time to time. Decommissioning in Scotland is administered by the Department of Energy and Climate Change in consultation with the Scottish Ministers. The Energy Act 2004 introduced a new regime for the decommissioning of offshore wind farms. MORL will be required to submit a preliminary decommissioning programme under these arrangements to DECC for approval. A preliminary decommissioning plan has been prepared by MORL and is presented in Technical Appendix 1.3 E.

### **1.2.5 Habitats and Birds Directives: Requirement for Habitats Regulations Assessment**

- 1.2.5.1 The Habitats Directive (Council Directive 92 / 43 / EEC) is transposed into UK law by the Conservation (Natural Habitats &c) Regulations 1994, as amended (Habitat Regulations) (for development on land and within territorial waters) and the Offshore Marine Conservation (Natural Habitats &c) Regulations 2007, as amended (Offshore Marine Regulations) (beyond 12 nm). The Regulations require the compilation and maintenance of a register of European sites, to include Special Areas of Conservation (SACs) under the Habitats Directive and Special Protection Areas (SPAs) classified under Council Directive 79 / 409 / EEC on the Conservation of Wild Birds (the Birds Directive). These sites form a network termed Natura 2000.
- 1.2.5.2 The Regulations also require a Habitats Regulation Appraisal (HRA) to be conducted by the 'competent authority' before a plan or project that is likely to have a significant effect on designated or candidate SPA or SAC can be given consent, permission or other authorisation.

#### **European Protected Species**

- 1.2.5.3 Annex IV of the Habitats Directive list certain species of interest of the European Community which are in need of strict protection. Any of these species whose natural range includes any area in Great Britain are called 'European Protected Species'. Their places of shelter are fully protected and it is an offence to damage, destroy or obstruct access to or otherwise deny the animal use of a breeding or resting site, whether deliberately or not. It is also an offence to disturb in a manner that will significantly affect the local distribution or abundance of the species. In addition, it is an offence to disturb an animal in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young.
- 1.2.5.4 Licences may be given to authorise activities which may affect European Protected Species of plants or animals which would otherwise be illegal under the Regulations. The licences are granted by Scottish Natural Heritage (SNH) or the Scottish Government depending on the reason for the license application. It is anticipated that the SPVs will apply for a European Protected Species license for

disturbance to cetaceans; this will be undertaken once a detailed project construction method statement is available.

### **Wildlife and Countryside Act 1981**

1.2.5.5 The Wildlife and Countryside Act 1981 (as amended by the Countryside Rights of Way Act 2004 (the 1981 Act) is designed to protect wildlife in the UK. The Nature Conservation (Scotland) Act 2004 (the 2004 Act) is the principal law by virtue of which wildlife is protected in Scotland. Provisions of both Acts tend to overlap as the 1981 Act also offers wildlife protection in Scotland. All species of wild birds are afforded protection under the acts. Furthermore, Chapter 1 of Part 2, and Schedules 1 and 5, of the 2004 Act repeals the SSSI provisions of the 1981 Act, providing for the enhanced protection and management of SSSIs, requiring the preparation of site management statements and amending notification procedures. The provisions place a duty on public bodies for the further conservation and enhancement of SSSIs, providing a new offence whereby third parties can be convicted for damaging SSSIs and enable the making of byelaws for the protection of SSSIs.

### **Protection of Badgers Act 1992**

1.2.5.6 The Protection of Badgers Act 1992 (as amended by the Nature Conservation (Scotland) Act 2004) makes it an offence to recklessly take, injure or kill a badger, or destroy or cause disturbance to its sett. Any sett within an active badger territory is afforded legal protection, whether it shows signs of recent use or not. In addition, badgers are afforded protection from cruel ill treatment (which includes preventing a badger access to its sett) as well as causing the loss of significant foraging resources within a badger territory.

### **Wildlife and Natural Environment (Scotland) Act 2011**

1.2.5.7 Following the introduction of the Wildlife and Natural Environment (Scotland) Act 2011 (WANE), Scottish Ministers have delegated the majority of their species licensing powers to SNH. Scottish Ministers delegated all existing licensing powers under the Wildlife and Countryside Act, Protection of Badgers Act and Habitats Regulations to SNH, though exceptions include certain areas of licensing in respect to cetaceans (whales, dolphins and porpoises). WANE modernises outdated legislation and corrects anomalies and weaknesses in current legislation. It is focused on countryside management (e.g. modernising game law and strengthening protection of badgers), but also changes the licensing system for protected species, regulates the control of invasive non-native species, and makes operational changes to the management of SSSIs.

1.2.5.8 All applications made to Scottish Ministers for consent under Section 36 of the Electricity Act 1989 must comply with the Water (Controlled Activities) Scotland Regulations 2011 (CAR). A CAR authorisation is needed for building engineering works in inland water or wetlands or in their vicinity and having, or likely to have, a significant adverse effect on the water environment or any other activity which directly or indirectly has, or is likely to have, a significant adverse impact on the environment.

### **Salmon and Sea trout**

1.2.5.9 Consideration is required to be given to the Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003. The Act offers protection to salmon and sea trout.

### **Protection of Seals under the Marine (Scotland) Act 2010**

- 1.2.5.10 On the 1st February 2011, it became an offence to kill, injure or take a seal at any time of year, except to alleviate suffering or where a licence has been issued to do so by Marine Scotland under Part 6 of the Marine (Scotland) Act 2010. The method of killing or taking seals is detailed in the licence issued and regular reporting will be required.

### **Marine Water Framework Directive**

- 1.2.5.11 The Marine Strategy Framework Directive 2008 / 56 / EC (MSFD) aims to achieve Good Environmental Status in Europe's seas by 2020. Good Environmental Status involves protecting the marine environment, preventing its deterioration and restoring it where practical, while using marine resources sustainably. This fits well with the UK's vision of 'clean, healthy, safe, productive and biologically diverse oceans and seas'. The MWFD sets out 11 high level Descriptors of Good Environmental Status which cover all the key aspects of the marine ecosystem and all the main human pressures on them.
- 1.2.5.12 It is inextricably linked to the Water Framework Directive 2000 / 60 / EC (WFD). WFD relates to improving and protecting the chemical and biological status of surface waters throughout a river basin catchment from rivers, lakes and groundwater through to estuaries (transitional) and coastal waters to one nautical mile out to sea (three nautical miles in Scotland) and overlaps with MSFD in coastal waters.

### **Water Environment and Water Services (Scotland) Act**

- 1.2.5.13 Under the Water Environment and Water Services (Scotland) Act 2003 river basin management plans must be produced and implemented. River basins include all estuaries and coastal waters extending to 3 nm seaward from territorial waters. Any proposed development within 3 nm must have regard to the requirements of the WFD to ensure that all surface waters achieve Good Ecological Status and that there is no deterioration in status.

### **Land Reform (Scotland) Act 2003**

- 1.2.5.14 The Land Reform (Scotland) Act 2003 established statutory rights of responsible access to land and inland water for outdoor recreation, crossing land and some educational and commercial purposes (also known as Scottish access rights).

### **Crown Estate Act 1961**

- 1.2.5.15 One of the Crown Estate's main aims is to manage and enhance the value of Scotland's marine assets and this involves issuing licences or leases for development of offshore wind farms on the marine estate. A lease will be granted when all the consents for the Project have been obtained. Rights of Occupation are granted by The Crown Estate Commissioners under Section 3 of The Crown Estate Act 1961 for the purpose of placing structures on or passing cables over the seabed or foreshore. This is a statutory consent granted in the form of a lease.

## 1.2.6 Planning context

### The Town and Country Planning (Scotland) Act 1997

- 1.2.6.1 Planning Permission under the Town and Country Planning (Scotland) Act 1997 is required from Aberdeenshire Council as the local planning authority for the proposed onshore transmission infrastructure (OnTI). This includes the export cable from export cable landfall at Fraserburgh beach to Peterhead and the onshore substation(s) infrastructure.
- 1.2.6.2 Section 25 of the 1997 Act provides that where, in making a determination under the Town and Country Planning (Scotland) Act 1997, regard is to be had to the development plan and the determination shall be made in accordance with the plan, unless material considerations indicate otherwise. The Aberdeen City and Shire Structure Plan (Aberdeen City Council & Aberdeenshire Council, 2009) and the Aberdeenshire Local Plan (Aberdeenshire Council, 2006) constitute the development plan for the area of the entire proposed onshore works which lie within Aberdeenshire Council (north east area).
- 1.2.6.3 A separate Planning Statement will accompany the consent applications and will set out the relevant Development Plan policies and material considerations relevant to the Project.
- 1.2.6.4 Both plans support the principle of renewable energy developments provided they comply with the provisions of local planning policy. See, for example, paragraph 4.7 of the Structure Plan which recognises that in order to contribute to its Sustainable Development and Climate Change Objective, this will involve increasing the supply of energy from renewable sources (making a significant contribution towards meeting Scottish targets). Policy Inf \ 7 of the Local Plan sets out the policy requirements for onshore renewable energy, wind energy developments which policy is stated to be, for the encouragement of the sensitive development of wind energy facilities. This policy only applies to wind energy development onshore and as such is not directly applicable to the Project.

### 1.2.7 Material Considerations

- 1.2.7.1 A series of planning policies, guidance and advice are available in Scotland through the NPF2 (as discussed above), Scottish Planning Policy (SPP), Planning Advice Notes (PANs) and Planning Circulars. Other than Planning Circulars, in respect of which case law has thrown some doubt, these documents are considered material considerations in the determination of planning applications.

## 1.3 Environmental Impact Assessment

### 1.3.1 Requirement for Environmental Impact Assessment (EIA)

- 1.3.1.1 EU Directive 2011 / 92 / EU (the codified EIA Directive) require certain types of development which are considered likely to cause significant environmental effects to be subject to EIA. The types of development to which the Directive applies are specified in Annexes I and II to the Directive. The purpose of the EIA Directive is to ensure that, in considering whether to grant consents for developments that are likely to have significant environmental effects, the consenting authorities have all the necessary environmental information on which to base their decision.
- 1.3.1.2 The EIA Directive has been implemented in the UK by a series of statutory instruments. The Project is subject to the requirement for an EIA under the Marine Works (Environmental Impact Assessment) Regulations 2007 as the Project comprises “regulated activities” within the meaning of the regulations. Electricity generation projects of > 1 MW which fall inside UK territorial waters, and require consent under Section 36 of the Electricity Act 1989, are also required to provide an EIA under the terms of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (as amended).
- 1.3.1.3 In respect of the onshore transmission infrastructure (OnTI), the relevant EIA regulations are the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011.
- 1.3.1.4 The relevant regulations set out the minimum information requirements and procedural requirements for EIA development.
- 1.3.1.5 Consent for the transmission infrastructure is slightly more complex in that it involves both offshore and onshore elements. This means Marine Licences must be applied for to cover the offshore elements of this infrastructure (OSP's and transmission cable), while planning permission onshore must be applied for through the Town and Country Planning (Scotland) Act 1997. For more information on legislation see Chapter 1.2 (Regulatory and Policy Context) and Technical Appendix 1.2 A.

### 1.3.2 The EIA Process

- 1.3.2.1 The EIA process has three distinct stages:
- Screening;
  - Scoping; and
  - Environmental Impact Assessment.

#### Screening

- 1.3.2.2 A screening assessment is used to determine whether EIA is necessary. Installations for the harnessing of wind power for energy production (wind farms) are Annex II development within the meaning of the Directive. It is therefore common practice to undertake EIA for offshore wind farm developments of greater than 50 MW and for this reason, there was no need for MORL to carry out the screening stage of the EIA process.

## Scoping

- 1.3.2.3 Where a development is required to undergo EIA, then the developer may request a scoping opinion from the consenting authorities which will assist in the identification of environmental issues and likely significant effects to be considered, as well as discussing methods of impact assessment.
- 1.3.2.4 MORL has requested scoping opinions from Marine Scotland in respect of the generating station elements of the Project in the EDA and in respect of the transmission infrastructure (TI).
- 1.3.2.5 The scoping document for the offshore generating station elements of the Project in the EDA was released in August 2010, and the scoping document for the TI was released in September 2011. The scoping documents submitted by MORL set out the details of the site, the proposed development and an assessment of where there are likely to be environmental effects. When the scoping document for the generating station elements was submitted, the individual wind farm sites (Telford, Stevenson and MacColl) had not been identified.
- 1.3.2.6 The views of statutory consultees, all relevant stakeholders and the general public are sought as part of the scoping process; scoping is therefore very much a process of stakeholder engagement. Before the publication of the scoping report, relevant stakeholder organisations within a broad range of classifications were identified and notified by an introductory letter of the broad aims of the Project. This enabled the stakeholder database to be expanded through recommendations from within the stakeholders groups themselves. Pre-scoping meetings with a number of key stakeholders were held to identify additional stakeholders, as well as obtain guidance on the engagement process. A list of the stakeholders that were provided with a copy of the scoping report and invited to comment can be found in Appendix 1.4 A.
- 1.3.2.7 A formal scoping opinion in respect of the generating station elements of the Project in the EDA, was received from Marine Scotland in January 2011. Additional responses to the scoping report were also received from some of those stakeholders identified during the pre-scoping work. Table 1.3-7 in Annex 1 to this chapter provides a summary of the scoping opinion received for the offshore generating station from Marine Scotland and the other responses received from stakeholders, it highlights the approach taken to the issues raised. A full Table of scoping opinion responses can be found at Technical Appendix 1.3 B.
- 1.3.2.8 A formal scoping opinion response from Marine Scotland and the Local Planning Authority (Aberdeenshire Council) and other key stakeholders to the TI scoping report was received in December 2011. A summary of the responses received from Marine Scotland, the Local Planning Authority and the stakeholders for the transmission infrastructure can also be found in Table 1.3-8 in Annex 2 to this chapter.

## Environmental Impact Assessment

- 1.3.2.9 EIA is a process that identifies the aspects of the environment likely to be significantly affected by the Project, and which describes the likely significant environmental effects of the Project, and the methodologies employed to assess the main effects that the Project is likely to have on the environment. EIA also involves consideration and description of the measures envisaged to prevent,

reduce and offset any significant adverse effects on the environment and a summary of the residual effects of the development after mitigation. The assessment covers the full life cycle of the development, from planning to decommissioning.

- 1.3.2.10 The information resulting from the EIA process is presented in an Environmental Statement so that a decision maker has full information on the likely significant environmental effects of proposed development, at the time that the decision on whether to grant consent is made.

### 1.3.3 Environmental Impact Assessment Process

#### Baseline Data Gathering

- 1.3.3.1 Desk-based research of available literature was used to collect information for the EIA. In addition, specific surveys and studies that were required to support the EIA were identified through a review of the available literature and research for the Moray Firth area, the scoping opinions received for the Project and through consultation with various stakeholders. A summary of the baseline surveys and studies done are listed in Table 1.3-1 below.

**Table 1.3-1 Summary of Baseline Surveys and Studies Done for Telford, Stevenson, MacColl and the Transmission Infrastructure**

Receptor	Surveys done	Location of full methodology
<b>Seabed sediments and composition</b>	<p>Between April and May 2010, geophysical surveys were done at a coarse scale (primary line spacing of 600 m with cross-line spacing of 1,000 m) across the entire zone and at a fine scale (primary line spacing of 150 m and cross line spacing of 500 m) across the Telford, Stevenson and MacColl sites. The survey suite included side scan sonar, high-resolution swath bathymetry and sub-bottom seismic profiling surveys.</p> <p>In August–October 2011, geophysical surveys were done of the potential offshore cable routes. The same survey suite as above was used.</p>	Chapters 3.1 to 3.5
<b>Geological horizons</b>	<p>A total of 19 geotechnical boreholes, to a maximum depth of 50 m, were taken across the Telford, Stevenson and MacColl sites. These were done in November – December 2010. Beatrice Offshore Wind Farm also provided data from six boreholes.</p> <p>In August – October 2011, a total of 40 vibrocore and piezocone penetration tests were taken, to a maximum depth of 5 m, across the potential offshore cable route corridors.</p>	Chapters 3.1 to 3.5
<b>Wave, tidal and turbidity measurements</b>	<p>In April / May 2010, 4 AWACs and 1 wave buoy were deployed to collect zone wide data. The Acoustic Doppler Current Profiler (ADCP) equipment was removed in March 2011. The wave buoy was lost in May 2011 and redeployed in mid-June 2011 and will be maintained in situ for engineering purposes. Data collected included current speed, water levels, wave heights / directions and suspended sediment concentrations.</p> <p>Grab samples for particle size analysis were also taken at the locations of the deployed metocean equipment in April 2010.</p>	Appendix 3.4 A

<b>Receptor</b>	<b>Surveys done</b>	<b>Location of full methodology</b>
<b>Underwater noise</b>	Computer modelling was used to estimate underwater construction noise.	Chapter 3.6 and Technical Appendix 3.6 A
<b>Benthic surveys</b>	In October 2010, approximately 80 grab samples were taken across the Telford, Stevenson and MacColl sites. The samples were used for determination of benthic flora and fauna as well as particle size analysis.  In August 2011, 20 grab samples were attempted for the offshore transmission infrastructure routes but only 12 were successful.	Chapter 4.2 and Technical Appendices 4.2 A and 4.2 B
<b>Sandeel surveys</b>	In February 2012, a programme of trawl and grab surveys were done to determine the spatial distribution of sand eels across the zone.	Chapter 4.3 and Technical Appendices 4.3 C
<b>Ornithology</b>	Boat based visual observations were made between April 2010 and March 2012 across the Telford, Stevenson and MacColl sites and within a 4 km buffer zone around the outer perimeter of the sites.  Migration surveys were done in September – November 2010 and March – May 2011 using dedicated observers on the boat based surveys and at coastal vantage points.  GPS tracking of kittiwake, fulmar, guillemot and razorbill from the Birriedale Cliffs, within the East Caithness Cliffs SPA, were done in 2011 to monitor potential bird movements between the sites and the SPA.  Aerial surveys were done of the entire zone plus a 4 km buffer zone in May, June, August, November and December 2009 and two more during February 2010. The first three surveys used high definition video using a 400 m wide transect and cameras with 2 cm resolution. The remaining 2009 and 2010 surveys were done using traditional aerial survey methods.  Further aerial surveys were done in summer 2011 across a survey area between the EDA and nearby SPAs (East Caithness Cliffs, North Caithness Cliffs and Troup, Pennan and Lion's Head).	Chapter 4.5 and Technical Appendix 4.5 A
<b>Marine Mammals</b>	Boat based visual observations were made between April 2010 and March 2012 across the Telford, Stevenson and MacColl sites and within a 4 km buffer zone around the outer perimeter of the sites.  Aerial surveys were done of the entire zone plus a 4 km buffer zone in May, June, August, November and December 2009 and two more during February 2010. The first three surveys used high definition video using a 400 m wide transect and cameras with 2 cm resolution. The remaining 2009 and 2010 surveys were done using traditional aerial survey methods.  Acoustic devices (TPODs, CPODs and EARs) were deployed in the Moray Firth and within the zone to monitor for cetaceans between 2009 – 2012.	Chapter 4.4 and Technical Appendix 4.4 A
<b>Commercial Fisheries (including salmon and sea trout)</b>	Desk based studies and consultations with fishermen were done during 2010 and 2011 to obtain information on commercial fishing practices within the Moray Firth.	Chapter 5.1 and Technical Appendix 5.1 A

Receptor	Surveys done	Location of full methodology
<b>Shipping and Navigation</b>	Automatic Identification Systems (AIS) surveys were done with radars on board the geophysical vessels during April–May 2010 and August–October 2011. A fixed AIS radar has been placed onshore at Helmsdale and an additional one will be fitted on the offshore met mast which MORL intends to install in 2012.	Chapter 5.2
<b>Military and Civil Aviation (helicopters)</b>	A desk-based analysis of helicopter approach paths to the existing oil infrastructure in the Moray Firth was done in 2011.	Chapter 5.3 and Technical Appendix 5.3 A
<b>Seascape, Landscape and Visual Receptors</b>	Twenty four viewpoints selected and photographed for SLVIA assessment and a full assessment of seascape and landscape characteristics within 50 km of the sites undertaken.	Chapter 5.4 and Technical Appendix 5.4 A
<b>Archaeology</b>	The geophysical and geotechnical survey data was analysed to identify any archaeological features of interest.	Chapter 5.5 and Technical Appendix 5.5 A
<b>Terrestrial Ecology</b>	Ecological field surveys along the identified onshore cable routes were done to identify sensitive species and features during May – September 2011.	Chapter 4.7 and Technical Appendix 4.7 A
<b>Noise (Onshore)</b>	Acoustic surveys were done along the onshore cable route in August 2011.	Chapter 3.8
<b>Traffic &amp; Transport</b>	Automatic traffic counts along the onshore cable routes were done in September 2011.	Chapter 5.7 (Other Human Activities)
<b>Hydrology</b>	Site visits and peat surveys were done along the onshore cable route in October 2011.	Chapter 3.4 (Hydrodynamics: Wave Climate & Tidal Regime)

### Scope of Assessment

1.3.3.2 The assessment chapters of this ES identify all likely significant environmental effects of the Project. These effects cover a wide range of separate environmental topics. Therefore, a common format has been applied to each discipline, with consistent methodologies applied to assess the effects relating to each topic. The assessments were carried out by a range of consultants who are experts in their respective fields; a full list of the consultants involved in each discipline can be found in Table 1.3-2 below.

1.3.3.3 The methodologies for the assessment of each EIA discipline are outlined in the individual impact assessment chapters and are based upon recognised good practice for that topic area. The standard format for each discipline is as follows:

- Baseline description (Section 2) including:
  - A short introduction to the discipline to be assessed;
  - Interrelationships with other topics / receptors covered in other chapters of this ES;
  - List of consultations undertaken (and a summary of how consultation responses have been acted upon) during baseline and impact assessment studies;

- A description of all baseline surveys, including methods and results; and
- Background to the receptor specific legislative and planning framework (where required) and relevant guidance;
- Impact Assessments (Sections 3, 4 and 5);
  - Summary – provides concise summary of the salient points from the assessment of the relevant topic under discussion;
  - A table detailing the expected residual effects and their significance;
  - A description of the impact assessment methodology;
  - A description of the Rochdale Envelope - each of the impact assessments is based on the Rochdale Envelope and the identified realistic worst case scenario during construction, operation and decommissioning;
  - The Primary Impact Assessment, setting out the likely significant effects arising from development of the EDA (comprising all three of the Telford, Stevenson and MacColl sites);
  - The Secondary Impact Assessment, setting out the likely significant effects arising from development of each of the Telford, Stevenson and MacColl sites individually;
  - A sensitivity analysis to identify the likely significant effects arising from development permutations where two out of the three wind farm sites are granted consent (Telford plus Stevenson, Stevenson plus MacColl and Telford plus MacColl); and
  - Identification of the proposed mitigation measures during construction, operation and decommissioning;
- Consideration of the likely significant cumulative effects as a result of the proposed development (Section 6).

**Table 1.3-2 List of Consultants Undertaking Assessments by Discipline**

EIA Team	
Discipline	Organisation Responsible
<b>Physical Environment</b>	
<b>Hydrodynamics, Sedimentary and Coastal Processes</b>	ABPmer
<b>Underwater Noise</b>	Subacoustech
<b>Hydrology, Geology and Hydrogeology</b>	RPS
<b>Noise (Onshore)</b>	RPS
<b>Biological Environment</b>	
<b>Designated Sites</b>	Natural Power
<b>Benthic Ecology</b>	EMU
<b>Fish and Shellfish Ecology</b>	Brown and May Marine

EIA Team	
Discipline	Organisation Responsible
Marine Mammals	Natural Power, Aberdeen University and SMRU
Ornithology	Natural Power
Intertidal Ecology	EMU
Terrestrial Ecology	RPS
<b>Human Environment</b>	
Commercial Fisheries	Brown and May Marine
Shipping and Navigation	Anatec
Military and Civil Aviation	Osprey Consulting
Seascape Landscape and Visual Receptors	Optimised Environments
Archaeology and Visual Receptors	Headland Archaeology
Socio-economics, Recreation and Tourism	SQW
Other Human Activities	MORL and Natural Power (Carbon Emissions only)

## Approach

1.3.3.4 An Environmental Statement should cover the “whole project”. For the purposes of this ES, the Project is considered to be the three proposed wind farm sites (Telford, Stevenson and MacColl) together with the transmission infrastructure, comprising of offshore transmission infrastructure (OfTI) and onshore transmission infrastructure (OnTI). However, whilst applications for Section 36 Consent and Marine Licences for the three proposed wind farm sites and the OfTI will be submitted to Marine Scotland contemporaneously, the application for planning permission for the OnTI will be submitted to Aberdeenshire Council once the precise location and layout for the onshore substation(s) have been confirmed. This ES contains sufficient information on the OnTI to allow Scottish Ministers and Marine Scotland to make decisions on the applications that will be submitted to them, taking into account the impacts of the infrastructure covered by those applications in combination with the OnTI, *i.e.* the “whole project”. Further environmental information may be submitted in support of the subsequent planning application for the OnTI. See 2.2.7 in Chapter 2.2 (Project Description) for details of the components of this infrastructure.

1.3.3.5 The impact assessments for each EIA discipline have been set out in the following structure.

### Offshore Wind Farm Impact Assessments

1.3.3.6 The primary assessment in each of the offshore generating station chapters is of the three proposed wind farm sites in combination. This represents the impact assessment of the entire proposed wind farm complex.

1.3.3.7 This is followed by the secondary assessment. This assesses each of the three sites individually. This is required because each wind farm site will be the subject of a separate application and should therefore be assessed on its own merits.

1.3.3.8 Sensitivity assessments have been carried out where effects are not equally spread across the three proposed wind farm sites (e.g. because of differences in the receptors associated with geography). In these assessments, the various combinations of the three sites are assessed. This is required because the combination of two sites on a receptor may be different from another combination. Where effects are considered equal across all sites, sensitivity analysis has not been carried out because it is considered that the level of effect of the different combinations will be the same and that the effects are a straight derivative of the overall primary assessment.

### **Transmission Infrastructure Impact Assessments**

1.3.3.9 The assessment has been carried out on the selected route, representing the impact assessment for the export cable route both offshore and onshore. An exact location for the onshore substation(s) at Peterhead is still to be determined. A preferred route has been identified together with the land area on which MORL proposes to locate the substation(s) as outlined above in Paragraph 1.3.3.4.

### **Whole Project Assessment**

1.3.3.10 Having assessed the three proposed wind farm sites and the TI separately, in order to ensure that all effects are recognised, MORL has assessed 'the Project' as a whole. This will encapsulate likely significant effects from the three proposed wind farm sites and the TI together (based on the information available to MORL on the OnTI at this time), and during differing phases of the development *i.e.* construction, operation and decommissioning.

### **EIA Methodology**

1.3.3.11 The significance of an effect is based on an initial two phased approach to determine (i) the magnitude of the likely effects and (ii) the sensitivity of the receptor. The criteria used to classify both effect magnitude and receptor sensitivity have been substantially guided by current receptor specific guidance documents and best practice. It should also be noted that effects include the direct effects and any indirect, secondary, cumulative, short, medium and long term, permanent and temporary, positive and negative effects of the development, resulting from:

- The existence of the development;
- The use of natural resources; and
- The emission of pollutants, the creation of nuisances and the elimination of waste.

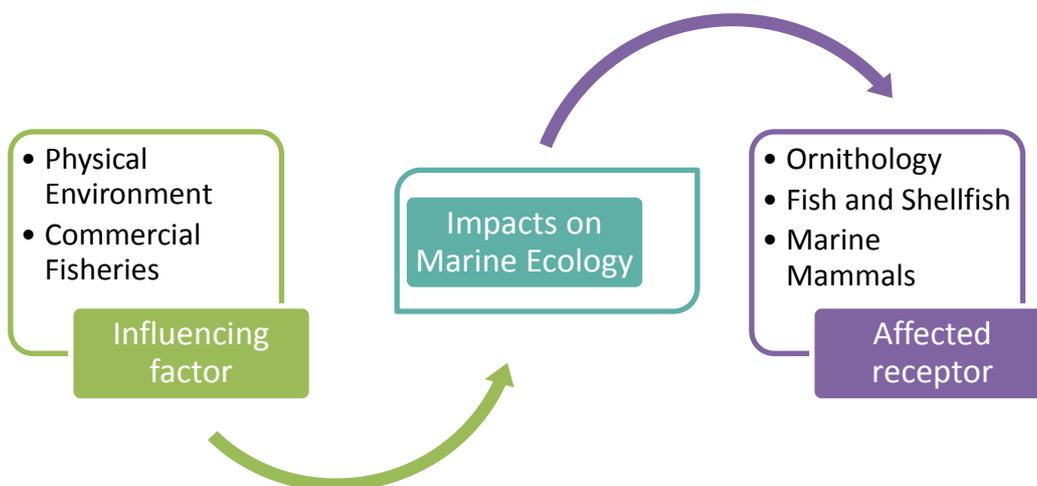
1.3.3.12 This ES also describes the forecasting methods used to assess the effects on the environment.

### **Mitigation and Residual Effects**

1.3.3.13 Where likely significant adverse effects are identified, mitigation measures will be proposed to reduce the level of significance. The effect of the mitigation will be tested and the significance of residual effects will be determined.

## ES Linkages

- 1.3.3.14 This ES considers the inter-relationships between the aspects of the environment that are likely to be affected by the construction, operation and decommissioning of the Project. This ES also assesses these effects cumulatively (cumulative assessment for each discipline can be found within Section 6).
- 1.3.3.15 The consideration of inter-relationships is required under the EIA Directive, which states that an ES should include: “An assessment of the aspects of the environment likely to be significantly affected by the proposed Project, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between the above factors.” These inter-relationships are explained further in Plate 1.3–1 below.



**Plate 1.3–1 Example of Inter-linkages within the EIA**

- 1.3.3.16 Inter-relationships are considered within each relevant ES chapter but, as a guide, Table 1.3-6 on page 1-37 indicates where such inter-relationships have been identified.

## Cumulative EIA Methodology

- 1.3.3.17 There is also a requirement to consider cumulative effects as part of the EIA process. Projects to be included in such an assessment must include existing projects, consented projects, those currently in the planning system and (where adequate information is available) other relevant future projects not yet in a consenting process, with potential to affect the same sensitive receptors as the Project e.g. the development of the WDA. Further detail (including a list of all developments and planned infrastructure to be considered within the cumulative assessment) are detailed in Table 1.3-3 below. Cumulative Impact Assessment is considered in Chapters 13 to 15 in this document.
- 1.3.3.18 There is no single statutory definition of what a cumulative effect is; however guidance is provided as to how the term should be defined. European Commission guidance (European Commission, 1999) provides the following definition of cumulative effects:

*“Cumulative impacts are impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the Project. Examples of this are as follows.*

- *Incremental noise from a number of separate developments;*
- *Combined effect of individual effects, e.g. noise, dust and visual, from one development on a particular receptor;*
- *Several developments with insignificant effects individually but which together have a cumulative effect”.*

Additionally, the EC guidance refers to ‘impact interactions’ which themselves can combine to create a cumulative effect, defined as follows:

*“Impact interactions are the reactions between impacts whether between the impacts of just one project or between the impacts of other projects in the area”.*

1.3.3.19 Examples of this are:

- A chemical plant producing two streams of waste that are individually acceptable but react together to produce highly significant levels of pollution;
- Emissions to air from one project reacting with emissions from an existing development; and
- Two major developments being constructed adjacent to one another and during overlapping time periods will have many interactive impacts, from visual impacts to construction and operational noise.

1.3.3.20 To ensure consistency across assessments a comprehensive table of current and potential developments was created. Assessment was carried out in relation to the developments that could potentially have a direct / indirect effect on receptors in combination with the MORL project. The developments that were considered are detailed in Table 1.3-3 below. For the purposes of the assessment of likely significant cumulative impacts on receptors, guidance on the scope and method is taken from the Moray Firth Offshore Wind Developers Group (MFOWDG) discussion document “Moray Firth Offshore Wind Developers Group Cumulative Impact Assessment Discussion Document” (ERM, 2011; Appendix 1.3 D).

1.3.3.21 A critical aspect of the cumulative assessment assesses the MORL project in combination with all other relevant renewable energy projects in Scotland, Figure 1.3-1, Volume 6 a shows the projects that have been considered. In terms of the cumulative assessment for all onshore disciplines, all relevant developments within a 10 km radius of the onshore transmission infrastructure have been considered. A list of these can also be found in Table 1.3-3 below. Figure 1.3-2, Volume 6 a shows a map of the considered onshore developments.

#### **1.3.4 Habitats Regulations Appraisal (HRA) Approach within this ES**

1.3.4.1 High level conservation objectives of Special Areas of Conservation (SACs) and Special Protection Area (SPAs) (together referred to as Natura sites) are identified to ensure that the integrity of the site is maintained by avoiding deterioration of the habitats of qualifying species or significant disturbance to qualifying species. The following characteristics must be maintained to ensure long term stability of the qualifying species:

- Population of the species as a viable component to the site;
- Distribution of the species within the site;

- Distribution and extent of habitats supporting the species;
- Structure, function and supporting processes of habitats supporting the species; and
- No significant disturbance to the species.

1.3.4.2 The information provided in this ES has taken into account the relevant information that will be required for the competent authority (in relation to the offshore aspects of the Project, it will be Marine Scotland and in relation to the onshore aspects it will be Aberdeenshire Council) who carry out an HRA and if necessary, an Appropriate Assessment (AA). The AA will be undertaken with advice given from the statutory stakeholders. The AA will be made on the following criteria:

1. Changes in the distribution or extent of the habitats supporting the species;
2. Changes in the structure, function and supporting processes of habitats supporting the species;
3. Significant disturbance to the qualifying species;
4. Changes in the distribution of the species within the Natura site; and
5. The species being maintained as a viable component of the site in the long-term, and therefore the integrity of the Natura site.

1.3.4.3 This ES has been structured to provide information to support the EIA for the three proposed offshore wind farms and associated transmission infrastructure (as described above), in addition to any potential HRA requirements. Chapter 4.1 (Designated Sites) provides an overview of the Natura 2000 sites that have been considered for potential HRA, following feedback from stakeholders. Following consultation with SNH and JNCC, the information for the HRA of the designated sites is contained within the receptor specific chapters. The HRA information is contained in a separate HRA section within the impact and cumulative impact assessment chapters for each of the relevant EIA disciplines:

- Chapters 7.2, 10.2 and 14.2 (Fish and Shellfish Ecology) and Technical Appendices 4.3 A & B;
- Chapters 7.3, 10.3 and 14.3 (Marine Mammals) and Technical Appendix 7.2 G;
- Chapters 7.4, 10.4 and 14.4 (Ornithology) Technical Appendix 4.5 A; and
- Chapters 10.6 and 14.6 (Terrestrial Ecology) and Technical Appendix 4.7 A.

1.3.4.4 There is also an additional standalone HRA Summary chapter (Chapter 12.2) which summarises the information provided by MORL in support of HRA. It considers the potential for the offshore generating stations, OfTI and OnTI to have a significant effect on the relevant Natura 2000 sites.

**Table 1.3-3 Developments Considered Alongside the Project in MORL's Cumulative Impact Assessment**

Developments considered in CIA	Summary	Information Source
<b>Marine Renewable Energy Projects</b>		
<b>Beatrice Offshore Wind Farm (BOWL)</b>	Worst case parameters are detailed in Table 1.3-4 below.	BOWL Environmental Statement
<b>MORL WDA</b>	Realistic worst case parameters are detailed in Table 1.3-5 below.	MORL
<b>MORL Offshore Met Mast</b>	Installation in 2012 of a meteorological mast to monitor site conditions in the Moray Firth Round 3 Zone.	Marine Licence number 04061 / 11 / 0
<b>Marine Energy Developments in Pentland Firth and Orkney</b>	Eleven wave and tidal lease sites in Pentland Firth and Orkney Waters, with a total potential capacity of 1,600 MW. Status of projects variable; most advanced have completed Scoping and are undertaking EIA	Map of lease sites and their planned capacity, accessed at: <a href="http://www.thecrownstate.co.uk/energy/wave-and-tidal/pentland-firth-and-orkney-waters/">http://www.thecrownstate.co.uk/energy/wave-and-tidal/pentland-firth-and-orkney-waters/</a>  A number of projects have progressed to Scoping and Scoping reports are available online, accessed at: <a href="http://www.scotland.gov.uk/Topics/marine/Licensing/marine/scoping">http://www.scotland.gov.uk/Topics/marine/Licensing/marine/scoping</a>
<b>SHETL Offshore Hub</b>	Proposed offshore HVDC hub in the Moray Firth, aimed at facilitating connection of renewable energy projects on Orkney and Shetland to the National Grid	Overview of project and hub location map, accessed at: <a href="http://www.sse.com/Spittal/ProjectInformation/">http://www.sse.com/Spittal/ProjectInformation/</a>
<b>Forth and Tay Offshore Developments (Near na Gaoithe, Inch Cape, Seagreen Phases 1-3)</b>	Two proposed offshore wind farm projects in Scottish Territorial Waters, and proposed Round 3 offshore wind farm development beyond 12 nm. Combined potential capacity of approx. 4,500 MW. Status of projects variable; all developers undertaking EIA and consent applications expected in 2012	Project Scoping reports, accessed at: <a href="http://www.inchcapewind.com/assets/docs/inch_cape_scoping_report_web.pdf">http://www.inchcapewind.com/assets/docs/inch_cape_scoping_report_web.pdf</a>  <a href="http://www.nearnagaoithe.com/scoping-document.asp">http://www.nearnagaoithe.com/scoping-document.asp</a>  <a href="http://www.seagreenwindenergy.com/reports.asp">http://www.seagreenwindenergy.com/reports.asp</a>
<b>Aberdeen Offshore Wind Farm</b>	Proposed offshore wind turbine deployment facility; up to 11 turbines, up to 100 MW capacity. Consent application submitted	Project Environmental Statement, accessed at: <a href="http://www.vattenfall.co.uk/eN/Aberdeen-bay.htm">http://www.vattenfall.co.uk/eN/Aberdeen-bay.htm</a>
<b>Beatrice Demonstrator Turbines</b>	Two operational offshore wind farm demonstrator turbines in the outer Moray Firth	Project Environmental Statement, accessed at: <a href="http://www.beatricewind.co.uk/downloads/">http://www.beatricewind.co.uk/downloads/</a>

Developments considered in CIA	Summary	Information Source
<b>Subsea Cables</b>		
<b>BOWL offshore export cable</b>	Information available directly from BOWL's scoping report. Construction will consist of an offshore transmission cable, an onshore transmission cable and an onshore electrical substation	Beatrice Transmission Works – Environmental Scoping Report - <a href="http://www.sse.com/uploadedFiles/Z_Microsites/Beatrice/Controls/Lists/Resources/BeatriceScopingReport.pdf">http://www.sse.com/uploadedFiles/Z_Microsites/Beatrice/Controls/Lists/Resources/BeatriceScopingReport.pdf</a>
<b>SHETL Offshore Hub cable</b>	Proposed offshore HVDC hub in the Moray Firth, aimed at facilitating connection of renewable energy projects on Orkney and Shetland to the National Grid.	Overview of project and hub location map, accessed at: <a href="http://www.sse.com/Spittal/ProjectInformation/">http://www.sse.com/Spittal/ProjectInformation/</a>
<b>Viking cable</b>	The wind farm will consist of 150 wind turbine generators. Specific turbine model has not been identified yet, however, maximum hub height of about 90 m. The maximum blade tip height would therefore be up to about 145 m above ground level. Together, the 150 wind turbines would have a predicted installed generating capacity of up to 540 MW.	Viking Wind Farm Environmental Statement - <a href="http://vikingenergy.co.uk/downloads.asp">http://vikingenergy.co.uk/downloads.asp</a>
<b>SHEFA telecoms cable</b>	Existing SHEFA-2 fibre optic submarine cable, running through the Moray Firth from the Faroe Islands via Shetland and Orkney to Banff	Webpage: <a href="http://www.shefa.fo/the-information-on-this-page-is-for-people-interested-in-achieving-information-about-the-shefa-2-cable">http://www.shefa.fo/the-information-on-this-page-is-for-people-interested-in-achieving-information-about-the-shefa-2-cable</a>
<b>Oil And Gas</b>		
<b>Beatrice and Jacky platforms and associated infrastructure</b>	Existing oil and gas infrastructure (platforms, wells and pipelines) in the outer Moray Firth associated with two operational oil fields (Beatrice and Jacky)	Infrastructure and licence areas mapped in UK DEAL database, available at: <a href="https://www.ukdeal.co.uk/dp/jsp/PleaseLoginDeal.jsp">https://www.ukdeal.co.uk/dp/jsp/PleaseLoginDeal.jsp</a>
<b>Oil and gas licence block awards</b>	Licence blocks awarded during oil and gas licensing rounds. No infrastructure currently in place. Operator's holding licenses have rights to explore the blocks for potential oil and gas resources	Infrastructure and licence areas mapped in UK DEAL database, available at: <a href="https://www.ukdeal.co.uk/dp/jsp/PleaseLoginDeal.jsp">https://www.ukdeal.co.uk/dp/jsp/PleaseLoginDeal.jsp</a>
<b>Other Marine And Coastal Projects / Activities</b>		
<b>Shipping and navigation</b>	Existing commercial and recreational shipping routes and activity are described within this ES	Various sources of information; collated in Chapter 5.2 of this ES
<b>Military activities</b>	Existing military activities and areas are described within this ES	Various sources of information; collated in Chapter 5.3 of this ES
<b>Aviation</b>	Existing aviation infrastructure and activity are described within the ES	Various sources of information; collated in Chapter 5.3 of this ES
<b>Commercial fisheries</b>	Existing commercial fisheries activity is described within this ES	Various sources of information; collated in Chapter 5.1 of this ES

Developments considered in CIA	Summary	Information Source
<b>Port redevelopment opportunities (Nigg and Ardesier for integrated manufacturing, supporting sites include Buckie, Deephaven, Invergordon, Inverness, Wick)</b>	Moray Firth ports are being / are expected to be redeveloped, primarily in order to support a growing marine renewable and offshore wind industry. Development projects are at various stages	Inner Moray Firth Ports and Sites Strategy, available at: <a href="http://www.highland.gov.uk/businessinformation/economicdevelopment/economicdevelopmentprojects/innermorayfirthportsandsitesstrategy.htm">http://www.highland.gov.uk/businessinformation/economicdevelopment/economicdevelopmentprojects/innermorayfirthportsandsitesstrategy.htm</a>  Scottish Offshore Renewables Development Sites (Moray Firth Cluster), available at: <a href="http://www.sdi.co.uk/~media/SDI/Files/documents/energy/Brochures/SDI%20NRIP%20Moray%20Firth.ashx">http://www.sdi.co.uk/~media/SDI/Files/documents/energy/Brochures/SDI%20NRIP%20Moray%20Firth.ashx</a>
<b>Coastal capital and maintenance dredging and sea disposal</b>	Ongoing and proposed dredge activities at port locations, and disposal of dredge arising at defined marine disposal sites in coastal locations within the Moray Firth	Marine disposal sites as marked on Admiralty Charts
<b>Onshore Projects / Activities</b>		
<b>MORL onshore met mast</b>	Proposed erection of onshore meteorological mast to gather data for the proposed MORL wind farms. A self-supporting triangular steel lattice tower of 50 m height in Lybster	Planning permission received for Highland Council. Available via Highland Council e-planning website
<b>Peterhead Power Station</b>	Erection of 550 MW combined cycle gas turbine power station fuelled by a hydrogen rich fuel stream, associated buildings, plant and 2 x 90 m high gas turbine stacks for generation of carbon free electricity for national transmission system and formation of emergency access road from highway (A90 trunk road)	
<b>Bruxiehill Wind Farm Extension</b>	Erection of 2 x 800 KW wind turbines and associated infrastructure	Aberdeenshire Council Planning Portal
<b>St Fergus Moss Wind Farm</b>	Erection of 3 x 100 m high (to blade tip) 2.3 MW wind turbines and associated infrastructure	Aberdeenshire Council Planning Portal
<b>Braco Park Farm</b>	Erection of 67 m high (to blade tip) 330 KW wind turbine and associated infrastructure.	Aberdeenshire Council Planning Portal
<b>Bogenjohn Farm</b>	Erection of 3 x 99.5 m high (to blade tip) 2.3 MW wind turbines	Aberdeenshire Council Planning Portal
<b>Keith Inch and Green Hill</b>	Erection of 2 x 99.5 m high (to blade tip) 2.3 MW wind turbines and associated infrastructure	Aberdeenshire Council Planning Portal
<b>Overside and Greenwellheads Farms</b>	Erection of 4 x 99.5 m high (to blade tip) 2.3 MW wind turbines.	Aberdeenshire Council Planning Portal
<b>Moss Side of Braco</b>	Erection of 70 m high meteorological mast with anemometer	Aberdeenshire Council Planning Portal

<b>Developments considered in CIA</b>	<b>Summary</b>	<b>Information Source</b>
<b>Ednie Farms</b>	Erection of 2 x 79.6 m high (to blade tip) 800 KW wind turbines and associated infrastructure	Aberdeenshire Council Planning Portal
<b>West Knock Farm</b>	Erection of 3 x 79.6 m high (to blade tip) wind turbines, also construction of access road and substation	Aberdeenshire Council Planning Portal
<b>Middleton of Rora</b>	Erection of 81 m high (to blade tip) 850 KW wind turbine, also construction of substation, hardstanding, foundation and access track	Aberdeenshire Council Planning Portal
<b>West Knock</b>	Erection of 60 m high meteorological mast with anemometer (temporary)	Aberdeenshire Council Planning Portal
<b>Baluss</b>	Erection of 60 m high meteorological mast with anemometer (temporary)	Aberdeenshire Council Planning Portal
<b>Bruxiehill</b>	Erection of 80 m high (to blade tip) wind turbine	Aberdeenshire Council Planning Portal
<b>Nether Aden Farm</b>	Erection of 60 m high meteorological mast with anemometer (temporary)	Aberdeenshire Council Planning Portal
<b>West Crichtie</b>	Erection of 74 m high (to blade tip) 800 KW wind turbine and associated infrastructure	Aberdeenshire Council Planning Portal
<b>Toux Farm</b>	Erection of 74 m high (to blade tip) wind turbine and transformer housing unit	Aberdeenshire Council Planning Portal
<b>Inverquhomery</b>	Erection of 79.6 m high (to blade tip) wind turbine and associated infrastructure	Aberdeenshire Council Planning Portal
<b>Newton of Kinmundy</b>	Erection of 67 m high (to blade tip) wind turbine	Aberdeenshire Council Planning Portal
<b>Aldie Farm</b>	Erection of 2 x 87 m high (to blade tip) wind turbines and associated infrastructure	Aberdeenshire Council Planning Portal
<b>Upper Kinknockie</b>	Erection of 2 x 87 m high (to blade tip) wind turbines and associated infrastructure and access tracks	Aberdeenshire Council Planning Portal
<b>Mains of Inverugie</b>	Erection of 79.6 m high (to blade tip) wind turbine and associated infrastructure	Aberdeenshire Council Planning Portal
<b>North Windhill</b>	Erection of 80 m high (to blade tip) wind turbine and ancillary infrastructure	Aberdeenshire Council Planning Portal

**Table 1.3-4 BOWL Worst Case Parameters**

Worst case parameters	Scenario assessed
<b>Construction noise</b>	
Installation of 277 turbines	Four pin piles (2.4 m diameter) per foundation
Max. number of simultaneous piling events	two
<b>Increased suspended sediment concentration and sediment re-deposition</b>	
Installation of 277 turbines	Drilling to facilitate pin pile installation and seabed preparation for installation of gravity bases. Inter array cable and export cable burial by energetic means
<b>Loss of Habitat and Introduction of New Habitat</b>	
Installation of 277 turbines	Use of tubular jackets and gravity bases
<b>Operational Noise</b>	
Installation of maximum number of turbines (277)	
<b>EMFs</b>	
Inter array cabling total length	325 km
<b>Changes to Fishing Activity</b>	
Installation of maximum number of turbines (277)	

**Table 1.3-5 WDA Realistic Worst Case Parameters**

Realistic Worst Case Parameters	Scenario Assessed
<b>Increased Sediment Concentrations and Sediment re-deposition</b>	
Installation of 100 x 5 MW turbines <sup>1</sup>	Drilling to facilitate pin pile installation and seabed preparation for installation of gravity bases and burial of Inter-array cable by energetic means
<b>Construction noise</b>	
Installation of 100 x 5 MW turbines	Jackets on pin piles (2.5 m diameter)
Max. number of simultaneous piling operations	two
<b>Loss of habitat / Introduction of new habitat</b>	
Installation of 100 x 5 MW turbines	Incremental loss of habitat as a result of successive placement of foundations onto the seabed
<b>Operational Noise</b>	
Installation of maximum number of turbines	100
<b>EMFs</b>	
<b>Inter array cabling</b>	
Approximate length of inter-array cabling	130 km
<b>Changes to Fishing Activity</b>	
Installation of maximum number of turbines	100

<sup>1</sup> If MORL do not develop 1,500 MW in the Telford, Stevenson and MacColl wind farms then up to 500 MW may be developed in the WDA.

Table 1.3-6 ES Chapter Inter-relationship

	Bathymetry	Geology	Wind Climate	Hydrodynamics	Sedimentary and Coastal Processes	Underwater Noise	Hydrology, Geology and Hydrogeology	Noise (Onshore)	Designated Sites	Benthic Ecology	Fish and Shellfish Ecology	Marine Mammals	Intertidal Ecology	Terrestrial Ecology	Ornithology	Commercial Fisheries	Shipping and Navigation	Military and Civil Aviation	Seascape, Landscape and Visual Receptors	Archaeology and Visual Receptors	Socio-Economics, Recreation and Tourism	Traffic and Transport	Other Human Activities
Bathymetry				<input type="checkbox"/>	<input type="checkbox"/>																		
Geology				<input type="checkbox"/>	<input type="checkbox"/>																		
Wind Climate																							
Hydrodynamics								<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>							<input type="checkbox"/>			
Sedimentary and Coastal Processes								<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>							<input type="checkbox"/>			
Underwater Noise								<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>												
Hydrology, Geology and Hydrogeology								<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>									
Noise (Onshore)								<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>							<input type="checkbox"/>	<input type="checkbox"/>	
Designated Sites				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
Benthic Ecology						<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>							
Fish and Shellfish Ecology						<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>							
Marine Mammals						<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>											<input type="checkbox"/>			
Intertidal Ecology				<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>															
Terrestrial Ecology							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>								
Ornithology							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>							
Commercial Fisheries																	<input type="checkbox"/>						
Shipping and Navigation																					<input type="checkbox"/>	<input type="checkbox"/>	
Military and Civil Aviation																							
Seascape, Landscape and Visual Receptors																				<input type="checkbox"/>	<input type="checkbox"/>		
Archaeology and Visual Receptors				<input type="checkbox"/>	<input type="checkbox"/>															<input type="checkbox"/>			
Socio-Economics, Recreation and Tourism								<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
Traffic and Transport								<input type="checkbox"/>													<input type="checkbox"/>		
Other Human Activities																	<input type="checkbox"/>				<input type="checkbox"/>		

### **1.3.5 References**

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## Annex 1 to Chapter 1.3

Table 1.3-7 Summary of EDA Scoping Opinions Received and Approach Taken to Issues Raised

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland (The Scottish Government)</b>  (21/01/2011)	<b>Introduction</b>  * Scottish Ministers welcome the commitment given in the report that the EIA process will identify mitigation measures in order to avoid, minimise or reduce any adverse impacts. Marine Scotland would suggest that the range of options considered should be informed by the EIA process in order that these objectives can be achieved.	Noted.
	<b>Natural Heritage</b>  * SNH has produced a service level statement (SLS) for renewable energy consultation. Annex A details a list of references which should be fully considered as part of the EIA process.	Incorporated into relevant chapters.
	<b>General Issues</b>  <i>Economic Benefit</i>  * The application should include relevant economic information connected with the Project, including the potential number of jobs, and economic activity associated with the procurement, construction operation and decommissioning of the development.	Socio-economics assessment completed (Chapters 5.6, 8.6, 11.6, and 15.6).
	<b>Contents of the ES</b>  * Within the ES it is important that all mitigation measures are: clearly stated, fully described with accuracy, assessed for their environmental effects, assessed for their effectiveness, their implementation should be fully described, how commitments will be monitored and, if necessary, how they relate to any consents or conditions.	See Chapters 6-15 for mitigation measures and residual impacts. Also see draft Project Environmental Monitoring Plan. Technical Appendix 1.3 A
	* The EIA must address the uncertainty resulting from a developing and evolving layout, so that there is a clear explanation of the potential impact of each of the different scenarios.	Each individual EIA outlines the worst-case scenario for assessment.
	<b>Archaeology</b>  <i>Baseline Information</i>  * Sources of data (www.PASTMAP.org.uk and Historic Scotland's Spatial Data Warehouse) were identified.	Data sources interrogated (Chapter 5.5 and Technical Appendix 5.5 A).

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland (The Scottish Government) (21/01/2011) (continued)</b>	<b>Navigation</b> * The ES should supply detail on the possible impact on navigational issues for both commercial and recreational craft through: collision risk, navigational safety, risk management and emergency response, marking and lighting of tidal site and information to mariners, effect on small craft navigational and communication equipment, weather and risk to recreational craft which lose power and are drifting, in adverse weather conditions, evaluation of likely squeeze of small craft into routes of larger commercial vessels, and visual intrusion and noise.	Issues addressed (Chapters 8.2, 11.2 and 15.2).
	<b>Ecology, Biodiversity and Nature Conservation</b> <i>Species</i> * The ES needs to show that the relevant wildlife legislation and guidance were taken into account.	Addressed in Chapters 4.1 to 4.7.
	* The presence of protected species such as Schedule 1 Birds or European Protected Species must be included and considered as part of the application process. The presence of species on Schedule 5 (animals) and 8 (plants) of the Wildlife & Countryside Act 1981 should also be considered.	
	<b>Water Environment</b> * Developers are strongly advised at an early stage to consult with SEPA as the regulatory body responsible for the implementation of the Controlled Activities Regulations (CAR).	Relevant to offshore transmission infrastructure with an onshore connection.
	* SEPA's Pollution Prevention Guidelines should be taken into account in the preparation of the ES and during development.	Noted.
	* Prevention and clean-up measures should be considered for each of the stages of the development.	See consultation log (Appendices 1.3 B and 1.3 C).
	* Consultation with the local fishery board is encouraged at an early stage.	See Draft EMP (Appendix 1.3 A).
	<b>Other material Issues</b> <i>Traffic Management</i> * The ES should provide information relating to the preferred route options for delivering equipment, etc etc. via the trunk road network. The ES should also address access issues, particularly those impacting upon the trunk network.	See Chapters 9.3 and 13.3.  See Chapters 5.7, 11.7 and 15.7.

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland (The Scottish Government) (21/01/2011) (continued)</b>	<ul style="list-style-type: none"> <li>* Where potential environmental impacts have been fully investigated but found to be of little or no significance, it is sufficient to validate that part of the assessment by stating in the report: the work has been undertaken, what this has shown and why it is not significant.</li> </ul>	See Chapters 5.7, 11.7 and 15.7.
	<ul style="list-style-type: none"> <li>* Indicative turbine layouts should be presented within the EIA.</li> </ul>	
	<p><b>Inter array cabling &amp; Scour Protection</b></p> <ul style="list-style-type: none"> <li>* The installation methodologies for both the inter array cabling and the scour protection must be detailed in the EIA.</li> </ul>	See Chapter 2.2.
	<p><b>Environmental Management</b></p> <ul style="list-style-type: none"> <li>* MS-LOT welcomes the developers approach to the comprehensive Environmental Management Plan (EMP). The EMP is required to be a live document that can be reviewed and updated as the Project evolves.</li> </ul>	Draft EMP included (see Appendix 1.3 A).
	<p><b>Appropriate Assessment</b></p> <ul style="list-style-type: none"> <li>* In order for the AA to be carried out the installation technologies will have to be known in order to assess the impacts.</li> </ul>	See Chapters 7.2 to 7.4.
	<p><b>Marine Scotland Science</b></p> <p><i>Environmental Impacts scoping</i></p> <ul style="list-style-type: none"> <li>* The potential impacts described in the scoping document should not include 'Barrier to movement' as a separate effect. The barrier is caused by the presence of vessels, presence of foundations etc; it is not a different effect. Potential impacts associated to the disturbance and collision (marine mammals) should be primary direct impacts and lines 5 and 6 which relate specifically to prey species will be extremely hard to assess and should be treated as secondary impacts.</li> </ul>	As advised, not included within the relevant chapter.
	<ul style="list-style-type: none"> <li>* MS would recommend that the developers review existing background data surrounding fish species densities and distribution rather than conducting a survey.</li> </ul>	As advised with the exception of sandeel surveys as it was determined that insufficient data was available.
	<ul style="list-style-type: none"> <li>* MS suggests that the potential for interaction between changes in commercial fishing activity and biofouling can be scoped out of the assessment.</li> </ul>	Not included within the relevant chapter.

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland  (The Scottish Government)  (21/01/2011)  (continued)</b>	<i>Site specific survey methodology</i> * MS-LOT would like to review the survey and data collection strategy when assessing the connectivity of marine mammals SAC species.	Various consultations – see Appendix 1.4 C.
	<i>Commercial Fisheries</i> * MS agrees that the development could have potentially significant effects on commercial fisheries and these should be addressed in the EIA. Effects could arise from both direct impact on the species targeted by fishermen and restricted access to fishing grounds during construction and from restricted access to, or complete loss of fishing ground, during operation. Effects, either short or long term, could be manifested in both the development area and the export cable route.	Addressed in chapters 7.2, 8.1, 10.2, 11.1, 14.2 and 15.1.
	* Cumulative and in combination effects on commercial fishing appear highly probable. MS suggest that this assessment should address the extent of temporary or permanent loss of access to fishing grounds and possible effects of displaced fishing effort.	Addressed in chapters 8.1, 11.1 and 15.1.
	* The possible adverse effects on local and more distant stocks subject to increased fishing pressure are not generally identified in guidance documents but should form part of the EIA, particularly the assessment of cumulative and in combination effects.	
	<i>Cumulative Effects</i> * Cumulative impacts could be considerable on natural fish and commercial fisheries and the possible effects on coastal fishing communities should be addressed in the socio-economic section.	Addressed in chapters 14.2 and 15.1, rather than in the socio-economics chapter.
	<i>Construction</i> * Details of noise pollution resulting from any construction activity and any associated potential effects on cetaceans/pinipeds/fish will be required. Noise assessments should take into consideration background noise.	Addressed in chapters 3.6, 7.2, 7.3, 10.2 and 10.3.
	* The particular cause of concern with regards to cetaceans is the cumulative impact from all additional wind farm sites on the NE of Scotland.	Addressed in chapters 14.3.
	* The proposed development will need to consider potential impacts on migratory fish, including salmon, sea trout, sea lamprey and river lamprey during all phases of the project. Potential impacts may include physical or avoidance reactions at both the individual and population level and there may also be avoidance due to electromagnetic sensitivity at both adult and juvenile stages.	Addressed in chapters 7.2, 10.2 and 14.2.

Organisation	Summary of Response	MORL Approach
<p><b>Marine Scotland</b> <b>(The Scottish Government)</b> <b>(21/01/2011)</b> <b>(continued)</b></p>	<p>* In cases where there is an uncertainty over potential impacts it may be necessary for the developer to implement monitoring strategy to assess the influence on salmonid fish populations. The expected levels of noise production must be identified in the ES and derived by using published literature, decide what impact, if any, this will have on fish movements through the area.</p> <p><b>Appendix A - Scoping comments in relation to information requirements on diadromous fish of freshwater fisheries interest</b></p> <p>* In the case of Atlantic salmon, information will be required to assess whether there is likely to be any significant effect of developments on rivers which are classified as SACs for Atlantic salmon. Where there is potential for significant impact then sufficient information will be required to allow MS to carry out an AA.</p> <p>* The following information will need to be provided: identification of use of the proposed development area by diadromous fish, identification on the behaviour of fish in the area, assessment of potential impacts of deployed devices on diadromous fish during deployment, operation and decommissioning phases, consideration of the potential for cumulative impacts if there are multiple deployments in an area, assessment of the points highlighted to determine likely risk, and if there is any remaining doubt as to the potential impacts of a particular development, then the developer should recommend a scientifically robust monitoring strategy.</p>	<p>Due to the difficulties in monitoring salmonids, surrogate monitoring techniques are being proposed. Include monitoring of noise during construction and monitoring of sandeel populations (a key prey species). See Chapter 3.6, 7.2 and 10.2 .</p> <p>Addressed in Chapter 7.2.</p> <p>Addressed in Chapters 4.1, 4.3 and 7.2.</p>
<p><b>Joint Nature Conservation Committee</b> <b>(JNCC)</b> <b>&amp; Scottish Natural Heritage</b> <b>(SNH)</b> <b>(28/10/10)</b></p>	<p>* A single report should be submitted for the offshore and onshore activities (single ES and HRA report) in support of the Section 36 application.</p> <p><b>General Approach to EIA</b></p> <p>* JNCC &amp; SNH advise that the EIA is undertaken in the context of risk management, identifying the need to consider levels of confidence of data collected ("data that will be realistically possible to achieve") and how it is presented to enable conclusions to be reached.</p>	<p>HRA information incorporated into Chapters 7.2 and 10.2 (Fish and Shellfish Ecology), 7.3 and 10.3 (Marine Mammals), 7.4 and 10.4 (Ornithology). See also Chapter 12.2 (HRA Summary). Offshore transmission infrastructure activities have been included where details are available.</p> <p>Addressed in Chapters 7.1-7.4 and 10.1-10.6.</p>

Organisation	Summary of Response	MORL Approach
<b>Joint Nature Conservation Committee (JNCC) &amp; Scottish Natural Heritage (SNH) (28/10/10) (continued)</b>	<ul style="list-style-type: none"> <li>* JNCC &amp; SNH welcome MORL's proposal to consider ecological links and assess the projects holistically.</li> </ul>	<p>Addressed in each Chapter, links are identified in Chapter 1.3.</p>
	<ul style="list-style-type: none"> <li>* It may be relevant to discuss data gathered at a zonal level for better understanding of individual receptors (versus assessment for 'eastern dev area'). It would be key to identify how zonal assessment will be managed to inform later development.</li> </ul>	<p>Zone development and site selection has been informed by analysis of constraints across the entire zone (Chapter 2.1). Constraints analysis is an ongoing process which newly acquired baseline data feeds into.</p>
	<p><b>Annex A - Advice Relating to the Development in General</b></p> <p><i>Site selection within Zone</i></p> <ul style="list-style-type: none"> <li>* It is important to consider how the environmental data is expressed within the mapping tool; how has uncertainty/lack of data been incorporated into decision making; how has weighting been applied to each layer, including environmental information (it would be useful to present a map of environmental constraints only and separate maps for each output).</li> </ul>	<p>Addressed in Chapter 2.1.</p>
	<ul style="list-style-type: none"> <li>* It is important to acknowledge that constraint mapping used in selection on wind farm sites will be focussed on constraints more easily mapped.</li> </ul>	
	<p><i>Approach to EIA</i></p> <ul style="list-style-type: none"> <li>* There is a need to discuss and agree the approach for the assessment of significant impacts. As far as possible, impacts should be quantified and assessed against relevant thresholds of significance for some sensitive receptors which will need a qualitative appraisal of results in these cases. We strongly encourage appropriate consideration of the information collected pertaining to this specific area and development, and close consultation with relevant experts to ensure that there is ongoing agreement between the developer, SNCAs and Marine Scotland as to what is deemed to be significant, in proportion to the anticipated effects.</li> </ul>	<p>Agreement was reached on the different receptors at various stakeholder meetings (see relevant chapters).</p>
	<ul style="list-style-type: none"> <li>* It is important to understand the ecological links between different receptors (as recognised by MORL). It may be useful to consider whether there is a way to 'map' effects, e.g map effects on fish on their own merit, as prey species for marine mammals and birds (this could highlight where the EIA overlaps).</li> </ul>	<p>It was not possible to map detailed fish distributions due to the limited data available (with the exception of sandeel distribution). Appropriate cross referencing between benthic habitats and fish, fish and marine mammals and birds has been done where possible.</p>

Organisation	Summary of Response	MORL Approach
<b>Joint Nature Conservation Committee (JNCC) &amp; Scottish Natural Heritage (SNH)</b> <b>(28/10/10)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* It would be useful if the potential for mitigation is considered during the early stages of design consideration.</li> </ul>	Concept engineering has considered mitigation throughout the process.
	<ul style="list-style-type: none"> <li>* An important aspect of the EIA will be modelling of noise during the installation of jacket structures (each being considered), in order to assess which is the best option. How will the noise modelling be undertaken? Are there sound studies from the Beatrice Demonstrator jacket installation and monitoring during construction?</li> </ul>	Addressed in Chapter 3.6.
	<ul style="list-style-type: none"> <li>* We note the proposal to access rock dumping and mattresses. As this will have an effect on the benthic habitat we advocate minimisation of stabilisation material and consideration of using mattresses instead of rock as this offers the possibility of removal during decommissioning.</li> </ul>	Investigation is on-going, final cable protection method still to be confirmed.
	<ul style="list-style-type: none"> <li>* Is there a possibility for the Project to connect with other planned connections, e.g. the Moray Firth Hub?</li> </ul>	Addressed in Chapter 2.
	<ul style="list-style-type: none"> <li>* We welcome the proposal to detail the decommissioning phase within the ES. MORL should clarify whether there is any repowering planned for the development during the lifetime of the Project in order to ensure that the effects of this are also considered. Any alterations to the locations of offshore elements for repowering may require an update to the benthic survey work and assessments that have previously been carried out.</li> </ul>	Addressed in the preliminary decommissioning programme (Technical Appendix 1.3 E).
	<p><i>Baseline Data</i></p> <ul style="list-style-type: none"> <li>* It is not currently possible for JNCC &amp; SNH to conclude whether the data being gathered will be sufficient to answer all the consenting questions identified. It is recommended to discuss the outputs of surveys at relevant intervals, evaluate the occurrence of receptors and adapt/improve assessments strategies as appropriate.</li> </ul>	See consultation log for dates of consultations held with JNCC & SNH.
	<ul style="list-style-type: none"> <li>* The SEA for offshore Wind in STW and on-going Offshore Energy 2 SEA should be used in analyses of baseline and cumulative impact assessment.</li> </ul>	Information from this document incorporated where appropriate.
	<ul style="list-style-type: none"> <li>* Consideration should be given on the impacts of climate change on environmental baselines and how this should be accounted for in the prediction of effects on certain parameters.</li> </ul>	Where MORL has identified climate change as an important influence on baseline conditions over the lifetime of the Project, potential effects have been assessed. Climate change effects are primarily considered in Chapter 6.1 and 6.2 with secondary effects considered in Chapters 7.1 and 7.2.

Organisation	Summary of Response	MORL Approach
<b>Joint Nature Conservation Committee (JNCC) &amp; Scottish Natural Heritage (SNH) (28/10/10) (continued)</b>	<p><b>Annex B - Receptor Specific Advice for EIA</b></p> <p><i>Ornithology</i></p> <p>(1) Species to consider</p> <ul style="list-style-type: none"> <li>* We advise caution in the general statement that the majority of the seabirds are in coastal areas (table 5-5, p72), which may not be validated by the survey data. The EIA should fully discuss (with references) similar statements (such as "most breeding guillemots do not feed further than 30km from their breeding site"). It is also important to consider seasonal changes in foraging distances.</li> </ul>	Addressed in Chapter 4.5.
	<ul style="list-style-type: none"> <li>* References are requested for the review of the distribution of seaducks and diving ducks within the Moray Firth.</li> </ul>	
	<p>(2) Survey work</p> <ul style="list-style-type: none"> <li>* In respect of the boat-based survey methodology we seek to clarify whether both sides of the ship are to be surveyed simultaneously or only one side. The developer should clarify that the survey particulars are sufficient to adequately gather information at the development area. JNCC &amp; SNH recommend that there is a minimum of 3 bird surveyors and 1 marine mammal observer suitably trained and experienced. It may be appropriate to increase the number of surveyors e.g. in case of high bird densities. Observers should be rotated at regular, predefined intervals to prevent fatigue.</li> </ul>	
	<ul style="list-style-type: none"> <li>* If distance analysis techniques are to be used, we note that the precision and robustness of the estimates derived will greatly improve by ensuring that the assumption of 100% detectability at 0 m from the transect is met. It is also beneficial when conducting one-sided surveys to include an 'out-of-transect' band adjacent to Band A.</li> </ul>	See Appendix 1.4 C.
	<ul style="list-style-type: none"> <li>* We support the approach to discuss interim outputs of on-going survey work to inform discussion as to whether methodologies are suitably informative.</li> </ul>	Addressed in Chapters 7.4 and 10.4.
	<ul style="list-style-type: none"> <li>* We note that radar is under consideration to assess the frequency and height of migratory flights. We also note that PVA is not a method for further data collection and agree that it may be appropriate for assessing the long term effects on populations.</li> </ul>	Addressed in chapters 4.5, 7.4, 10.4 and 14.4.
	<p>(3) Habitat modelling</p> <ul style="list-style-type: none"> <li>* Habitat modelling will help to better understand the reasons for bird numbers in the Round 3 zone, their spatial distribution and use of the site. The use of habitat modelling should be carefully considered and this is likely to benefit from a collaborative approach with BOWL.</li> </ul>	

Organisation	Summary of Response	MORL Approach
<b>Joint Nature Conservation Committee (JNCC) &amp; Scottish Natural Heritage (SNH) (28/10/10) (continued)</b>	(4) Species sensitivity * Caution should be taken in applying the species sensitivity ratings described in Garthe and Huppopp and COWRIE guidance as they were based on seabirds occurring in the southern portion of the North Sea.	Addressed in chapter 4.5.
	* Collaboration should be sought between JNCC & SNH and other nature conservation agencies and seabird experts in determining the appropriate sensitivity for species assessed through this EIA.	See consultation log (Appendix 1.4 C).
	(5) Analysis * Data collection should be driven by the data needed to answer the questions being posed through EIA and HRA.	Addressed in chapter 4.5.
	* It is important to report the confidence intervals associated with any density and abundance estimates calculated using distance sampling techniques. It may also be important to use confidence intervals in the assessment of sensitive species.	
	* It is important to consider how the baseline survey data will be used in future monitoring (ideally from MORL and BOWL).	Addressed in chapter 4.5 and the EMP (Appendix 1.3 A).
	(6) Impacts * The assessment of impacts should be assessed within the context of the consequences to the relevant population and not simply the number of individuals affected.	Addressed in chapters 7.4, 10.4 and 14.4.
	* The disturbance leading to displacement of birds can and may occur during the operational period of the wind farm, in addition to construction and decommissioning.	
	* The flight height (and therefore survey techniques capable of gathering this information) is a key requirement to calculate collision risk.	Addressed in chapters 4.5, 7.4, 10.4 and 14.4.
	* At the present there is insufficient evidence available for the recommendation of avoidance rates and therefore a precautionary approach will be advised until better evidence has been provided.	Addressed in chapters 7.4, 10.4 and 14.4.
* TCE Strategic Ornithological Support Services (SOSS) will be reviewing the existing knowledge on collision risk and avoidance rates for offshore wind farms and this work should be referred to once it is published.	Awaiting SOSS outputs.	
* JNCC & SNH recommend considering the energetic impacts of barrier effects on migratory birds (particularly waterfowl and waders) and breeding seabirds (refs given).	Addressed in chapters 7.4, 10.4 and 14.4.	

Organisation	Summary of Response	MORL Approach
<b>Joint Nature Conservation Committee (JNCC) &amp; Scottish Natural Heritage (SNH)</b> <b>(28/10/10)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* We caution that assessment of collision risk and barrier effect impacts to migratory species may not be possible using the proposed survey methodologies (but we note that the developer is open to additional complementary methodologies to ensure sufficient data collection).</li> </ul>	Addressed in chapters 4.5, 7.4, 10.4 and 14.4.
	<ul style="list-style-type: none"> <li>* An assessment of the potential for O&amp;M boat and/or helicopter traffic to cause disturbance to birds using the site and possible displacement effects should be undertaken. Remote condition monitoring systems may help to reduce the number of turbine visits and therefore help to mitigate the impacts of this type of disturbance.</li> </ul>	Addressed in Chapter 2.2.
	(7) Cumulative impacts <ul style="list-style-type: none"> <li>* Cumulative impacts is a key issue for EIA and HRA. Collaboration with BOWL is recommended for birds survey work and its analysis. JNCC &amp; SNH support the use of the King <i>et al.</i>, (2009) framework, but the approach may require adaptation as work progresses on EIA and HRA.</li> </ul>	Addressed in Chapter 14.4.
	<ul style="list-style-type: none"> <li>* We would welcome discussion with the developer over which projects/industries may need to be considered in relation to cumulative and in-combination impacts.</li> </ul>	Addressed in Chapter 14.4 and Appendix 1.3 D.
	<ul style="list-style-type: none"> <li>* A meeting between the applicants, Marine Scotland and JNCC &amp; SNH to discuss and agree the scope of HRA is recommended.</li> </ul>	See Appendix 1.4 C.
	<ul style="list-style-type: none"> <li>* The developer should assess the effects of their activities in the context of potential adverse effects on the site integrity of identified SPAs (using conservation objectives).</li> </ul>	Addressed in Chapters 7.4, 10.4 and 14.4.
	<i>Marine Mammals</i> (1) Survey methods and data analysis <ul style="list-style-type: none"> <li>* JNCC &amp; SNH support the proposal to build on the regional approach to understanding marine mammal distribution in the Moray Firth and wish to receive further information on how the collaboration with BOWL will be undertaken to address cumulative impacts.</li> </ul>	Addressed in Chapters 3.6 and 4.4.
	<ul style="list-style-type: none"> <li>* The developer should consider their surveys in relation to the Joint Cetacean Protocol (JCP).</li> </ul>	Addressed in Chapter 4.5.
	<ul style="list-style-type: none"> <li>* King <i>et al.</i>, (2009) framework, developed for ornithology, could be used for the assessment of other mobile species (although cetaceans are protected whether they are associated with a protected site or not).</li> </ul>	
<ul style="list-style-type: none"> <li>* We welcome ongoing liaison with the developer to discuss surveys, applicability of data gathered and EIA approach.</li> </ul>	See consultation log (Appendix 1.4 C) for dates of meetings held.	

Organisation	Summary of Response	MORL Approach
<b>Joint Nature Conservation Committee (JNCC) &amp; Scottish Natural Heritage (SNH)</b> <b>(28/10/10)</b> <b>(continued)</b>	(2) Potential impacts to marine mammals * It would be appropriate to define more clearly how the information gathered will enable conclusions on the identified impacts to be reached and how they will be evaluated through monitoring (if necessary).	Addressed in Chapters 4.4, 7.3 and 10.3 and EMP (Appendix 1.3 A).
	* It would be helpful if JNCC & SNH could see an early version of the background noise assessment and modelling to assess impacts. An early assessment of this data may allow species monitoring to be adapted to reflect the likely zone of impacts.	See consultation log (Appendix 1.4 C).
	* It would be appropriate to consider the effects on population levels of marine mammal species as these will vary in extent and therefore require individual consideration for cumulative impact assessment.	Addressed in Chapters 7.3, 10.3 and 14.3.
	(3) Potential mitigation and monitoring * It is advisable that the applicant proactively ensures that the early stages of project design are influenced to minimise the risk to marine mammals.	Mitigation measures have been investigated and proposed where possible (see Chapters 7.3 and 10.3).
	* JNCC & SNH recommend that the applicant considers and discusses the full range of mitigation techniques for noise impacts during construction. The choice of mitigation should be determined by review of the zone of potential impacts. In case of not sufficient evidence being gathered then it is necessary to use appropriate precaution. MORL & BOWL should collaborate in this issue.	A report on noise reduction techniques was prepared and circulated to stakeholders.
	* It would be beneficial to arrange a joint meeting between the applicants, Marine Scotland and JNCC & SNH in order to discuss and agree the scope of HRA.	See consultation log Appendix 1.4 C.
	<i>Hydrodynamic Processes and Coastal Geomorphology</i> * MORL & BOWL cover a substantial portion of the Smith Bank and may potentially lead to effects on hydrodynamic processes. JNCC & SNH agree with the proposed assessment outlined in the scoping report. Collaboration between MORL & BOWL is recommended for the coastal processes modelling.	The same consultant was used and a common methodology used (see Chapters 3.4 and 3.5).
	(1) Cabling * JNCC & SNH recommend that an experienced coastal geomorphologist is employed to address cabling options. It is important that any cable route through the 'wave base' is carefully chosen, as well as the landing point itself.	JP Kenny, Metoc-Hyder and Senergy (engineering consultancies) and ABPmer (metocean specialist) are advising the projects.

Organisation	Summary of Response	MORL Approach
<b>Joint Nature Conservation Committee (JNCC) &amp; Scottish Natural Heritage (SNH)</b> <b>(28/10/10)</b> <b>(continued)</b>	<p><i>Benthic Ecology</i></p> <p>(1) General points</p> <ul style="list-style-type: none"> <li>* JNCC &amp; SNH recommend that when considering loss of habitat due to infrastructure, the applicant will also need to consider the extent of stabilisation materials.</li> </ul>	<p>Addressed in Chapters 7.1 and 10.1.</p>
	<ul style="list-style-type: none"> <li>* We do not consider that there is a risk to the benthos from the accidental release of pollutants.</li> </ul>	<p>MORL has developed a Marine Pollution Contingency Plan to with details the response plan to accidental releases (see Appendix 1.3 A: Environmental Management Plan).</p>
	<p>(2) Baseline data</p> <ul style="list-style-type: none"> <li>* Liaison with JNCC &amp; SNH is welcomed. It may be beneficial to undertake an early analysis of the survey data in order to assess if methods need to be revised and/or further detailed surveys are required.</li> </ul>	<p>See Technical Appendix 1.4 C.</p>
	<ul style="list-style-type: none"> <li>* It would be helpful to provide JNCC &amp; SNH and Marine Scotland a summary or report of geophysical survey results prior to commencement of geotechnical surveys. Collaboration between MORL and BOWL is welcomed.</li> </ul>	<p>See consultation log ( Technical Appendix 1.4 C). Campaigns were commenced at different times.</p>
	<ul style="list-style-type: none"> <li>* The ES will need to present clear information on, and identification of, the main biotopes found on-site. It would also be useful to map them with the finalised wind farm layout.</li> </ul>	
	<p>(3) Marine Protected Areas (MPAs) and Priority Marine Features (PMF)</p> <ul style="list-style-type: none"> <li>* The Scottish Government have published guidance that includes a draft list of Priority Marine Features within territorial waters for which MPAs may be an appropriate mechanism. SNH and JNCC are currently reviewing this document.</li> </ul>	<p>Addressed in Chapter 4.2.</p>

Organisation	Summary of Response	MORL Approach
<b>Joint Nature Conservation Committee (JNCC) &amp; Scottish Natural Heritage (SNH)</b> <b>(28/10/10)</b> <b>(continued)</b>	<p>(4) Cumulative impacts</p> <ul style="list-style-type: none"> <li>* We recommend that MORL and BOWL co-ordinate survey work, analysis and proposed locations for infrastructure, including cabling and grid.</li> </ul>	<p>The Projects are not at a design stage which will allow such collaboration although information has been shared where possible. In addition, the locations for infrastructure will be dependent on the site specific wind conditions, geology and the actual types of infrastructure that is finally used. Furthermore, it is National Grid which determines the location of grid connection points and not the developer.</p>
	<p><i>Fish of Conservation Concern &amp; Fisheries</i></p>	
	<p>(1) Species to consider</p> <ul style="list-style-type: none"> <li>* Elasmobranchs may need consideration including those listed by OSPAR and under the Wildlife &amp; Countryside Act.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Skates and rays are often associated with sandier substrates and may need to be considered. The impact assessment for elasmobranchs should include consideration of the impacts of electro-magnetic fields (EMF).</li> </ul>	<p>Addressed in Chapter 4.3.</p>
	<ul style="list-style-type: none"> <li>* European eel is of conservation concern. Very little is known on their migration pathways. A draft report from Marine Science reviews the data available on this species.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Allis and Twaite shad which are listed on Annex II of the Habitats Directive and UKBAP priority list. Allis is also protected under Schedule 5 of the Wildlife and Countryside Act. Shad are found in shallow coastal waters and estuaries, although they migrate up rivers to spawn.</li> </ul>	<p>Addressed in Chapter 4.2.</p>
	<p><b>Fisheries</b></p> <ul style="list-style-type: none"> <li>* Muddy sediments are the favoured habitat of the Scottish langoustine. The <i>Nephrops</i> fishery is the most valuable inshore fishery in Scotland.</li> </ul>	<p>Addressed in Chapter 12-15.</p>

Organisation	Summary of Response	MORL Approach
<b>Joint Nature Conservation Committee (JNCC) &amp; Scottish Natural Heritage (SNH)</b> <b>(28/10/10)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* Sand and gravel substrates are often fished for scallops. Other commercial bivalves such as cockles, razors and surf clams also favour sandy substrates, but are mostly exploited close to shore. Skates and rays are also often associated with sandier substrates and some are of conservation concern.</li> </ul>	Addressed in Chapter 12-15.
	<ul style="list-style-type: none"> <li>* Sandeel populations also occur in the sandier substrates of the Moray Firth and may be impacted by the proposed development. We strongly recommend that advice is sought from Peter Wright and Simon Greenstreet at Marine Scotland Science.</li> </ul>	Addressed in Chapter 4.3. Sandeel surveys were developed in consultation with MSS staff specified.
	(2) Fishing Industry liaison/consultation <ul style="list-style-type: none"> <li>* The site is beyond the geographic remit of the local Moray Firth inshore Fisheries Group (IFG), however they should be kept informed/consulted.</li> </ul>	See consultation log (Appendix 1.4 C) for meetings held.
	(3) Data sources & survey design for fish and shellfish	Addressed in Chapter 4.3.
	<ul style="list-style-type: none"> <li>* Defra Data Layers, which will be available soon, project will update the information provided in the scoping report. Marine Science are also updating the information on fisheries sensitivities and should be contacted for information.</li> </ul>	
	<ul style="list-style-type: none"> <li>* The UKBAP plan for commercial fisheries included in the scoping report is dated and should be updated to refer to current fisheries management measures.</li> </ul>	
	(4) Fishing effort <ul style="list-style-type: none"> <li>* Fishing statistics may not show activity from &lt;10 m vessels, however we would agree that these vessels, and indeed vessels &lt;15 m, are unlikely to frequently operate this far onshore.</li> </ul>	
	(5) Impacts	
<ul style="list-style-type: none"> <li>* Construction/decommissioning impacts: the EIA should include discussion of the impacts of underwater noise on fish, especially during spawning. Expected levels of noise production should be set-out and the impact this will have on fish life stages, movements and behaviour should be considered.</li> </ul>		
<ul style="list-style-type: none"> <li>* Operational noise: Expected levels of noise production should be set-out and the impact this may have on fish should be considered. [References are provided in the scoping response document.]</li> </ul>		
<ul style="list-style-type: none"> <li>* Rock armoring: the ecological impact of rock armoring should be considered.</li> </ul>	Addressed in Chapters 7.1 and 10.1.	

Organisation	Summary of Response	MORL Approach
<b>Joint Nature Conservation Committee (JNCC) &amp; Scottish Natural Heritage (SNH)</b> <b>(28/10/10)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* Electromagnetic fields (EMF): The potential for some fish species to be affected by EMFs emitted by subsea cables should be considered. The EIA should include a literature review of the current data available on this issue (current knowledge, specific risk for the Moray Firth, uncertainties) and how this proposed development will learn from current studies elsewhere and whether there are any opportunities to contribute to a wider understanding of EMF impacts.</li> </ul>	<p>Addressed in Chapter 4.3 and Technical Appendix 4.3 D.</p>
	<p><i>Seascope, Landscape and Visual Impact Assessment</i></p> <ul style="list-style-type: none"> <li>* SNH are reviewing existing guidance in order to draw up a list of recommendations for carrying out seascope, landscape and visual assessment in Scotland.</li> </ul>	<p>Addressed in Chapters 5.4, 8.4 and 15.4.</p>
	<p>(1) Method of assessment</p> <ul style="list-style-type: none"> <li>* The approach described in the 'Guidelines for Landscape and Visual Impact Assessment' should be used. It is important to consider the key elements that are specific to each environment, whether land-based or marine.</li> </ul>	
	<ul style="list-style-type: none"> <li>* The techniques and methods developed to evaluate seascapes should be critically assessed before they are generally applied in Scotland.</li> </ul>	
	<ul style="list-style-type: none"> <li>* What is required is a coastal landscape assessment, clearly related with both 'seawards' and 'landwards'. Important elements to consider include the contrast of form, pattern, texture and colours between the landscape and the sea. In particular, the horizontal extent of the sea is a strong compositional attribute.</li> </ul>	
	<p>(2) Baseline</p> <ul style="list-style-type: none"> <li>* Within the study area, the seascope character types applied are as identified in the SNH 'Seascapes' report. Given that this study was limited to a strategic desk-based approach, they can only be applied to proposals at the strategic level.</li> </ul>	
	<ul style="list-style-type: none"> <li>* JNCC &amp; SNH recommend the use of the coastal character methodology developed for aquaculture capacity studies (references are given scoping response letter).</li> </ul>	
	<p>(3) Visibility and Zones of Theoretical Visibility</p> <ul style="list-style-type: none"> <li>* It is recommended that, in assessing visibility, reference is made to SNH's good practice guidance on visual representation of wind farms. The visualisations and other illustrative material should be viewed in hard copy only.</li> </ul>	
<ul style="list-style-type: none"> <li>* It is important to consider the compatibility between adjacent wind farm designs within a 'wider view', or panorama.</li> </ul>		

Organisation	Summary of Response	MORL Approach
<b>Joint Nature Conservation Committee (JNCC) &amp; Scottish Natural Heritage (SNH)</b> <b>(28/10/10)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* The initial study area should be based on a 60 km radius ZTV.</li> </ul>	<p>Agreed in meeting on 4/7/11 that a 50 km radius was appropriate. Attendees (SNH, Marine Scotland, Highland Council and Moray Council).</p>
	<ul style="list-style-type: none"> <li>* The study area should be of an appropriate extent to allow adequate assessment of the development in the Round 3 zone, including its cumulative impact.</li> </ul>	<p>As above.</p>
	<p>(4) Viewpoint Selection and Assessment</p> <ul style="list-style-type: none"> <li>* Viewpoints should be selected in consultation with statutory consultees: the Highland Council, Moray council and SNH. A public consultation is also recommended.</li> </ul>	<p>7 public consultations held in Nov / Dec 2011 and addressed in meeting on 4/7/11.</p>
	<ul style="list-style-type: none"> <li>* Viewpoint selection is based on the identification of potentially sensitive receptors and potentially significant views, locations or landscapes. The initial viewpoint list will shorten as the assessment is carried out, however it is important to highlight that further or alternative viewpoints may need to be considered throughout the assessment process.</li> </ul>	<p>Addressed in Chapters 5.4, 8.4 and 15.4.</p>
	<ul style="list-style-type: none"> <li>* The choice of all viewpoints should be informed by the cumulative ZTV.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Viewpoints should be selected in order to show: a full representation of views (range of distances, elevations, aspects, landscape character types and visual receptors, to include coastal views), all aspects of the proposed development, visual composition, the variety of images that the wind farm will present from coastal areas as well as important hilltops and landmarks, sequential views along specific routes, the full range of different type of views, and views from other wind farms in respect to cumulative impacts.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Viewer type: Viewpoints will need to address the full range of receptor groups and various modes of movement.</li> </ul>	
	<ul style="list-style-type: none"> <li>* All viewpoint information should be presented in a table and cross-referred to a ZTV map on which all the numbered viewpoints are plotted. We recommend that the following details are included in the ES: the precise location of the viewpoint, its orientation and distance from the proposed development, the viewpoint height, nature of view and conditions of assessment. This information should be presented alongside each visualisation including a small insert map to show the viewpoint's detailed location and direction.</li> </ul>	
<ul style="list-style-type: none"> <li>* The characteristics visible from each viewpoint that are sensitive to wind farm development should be described and assessed. The design and layout of the turbines and other components of the wind farm, as it would appear from each viewpoint, should also be described and assessed. Any lighting or other marking on the turbines should be considered.</li> </ul>		

Organisation	Summary of Response	MORL Approach
<b>Joint Nature Conservation Committee (JNCC) &amp; Scottish Natural Heritage (SNH)</b> <b>(28/10/10)</b> <b>(continued)</b>	(5) Cumulative Impacts * MORL and BOWL are incentivised to collaborate on the assessment of the cumulative landscape and visual impacts. The assessment should include a baseline of existing and consented onshore wind farms as well as any proposals in planning.	Addressed in Chapters 5.4, 8.4 and 15.4.
	(6) Potential Mitigation and Monitoring * The wind farm design process should be described in the ES - a summary and analysis of the iterations leading to the final choice of wind farm layout, and why it is the optimal design in respect of landscape, balancing the various other constraints.	A final choice of wind farm layout has not yet been identified. The final layout will only be decided upon once the specification of wind turbine has been chosen for each site. Chapter 6 (Project Description) details the range of turbines considered.
	* We welcome further liaison with MORL & BOWL over SLVIA. Marine Scotland and the relevant planning authorities should also be involved in the discussion on viewpoint selection.	Consultations held on 4/7/11 and dates in 2012 TBC.
<b>The Moray Council (TCM)</b> <b>(26/10/10)</b>	* TCM considers that the proposed EIA scope is sufficient.	Noted.
	* Highlights that impacts on commercial fishing, navigation, civil and military aviation and the offshore oil and gas industry for Moray's economy and sustainable growth.	Addressed in Chapters 5.1, 5.2, 5.3, 5.6 and 5.8.
	* Cumulative and in-combination impact assessment should be considered alongside the adjacent BOWL proposal and the future western development area. Photomontages should consider the holistic impact of wind farm development in the Moray Firth from key points along the Moray coastline.	Addressed in Chapters 5.4, 8.4 and 15.4.
	* Supports MORL's commitment to engaging statutory and non-statutory consultees, including local communities. The EIA should include a list of those consulted.	Addressed in Chapter 1.4.
	* TMC wishes to be consulted on the OFTO scoping report given the potential implications for the Moray coastline, harbours, fisheries and roads.	Scoping report released in September 2011 and TMC were included on the distribution list.

Organisation	Summary of Response	MORL Approach
<b>Aberdeenshire Council (AC)</b> <b>(15/10/10)</b>	<ul style="list-style-type: none"> <li>* The AC is satisfied that the proposal will not have any direct or indirect effects on the interests of Aberdeenshire Council.</li> </ul>	<p>Noted.</p>
<b>The Highland Council</b>	<ul style="list-style-type: none"> <li>* Issues of high importance to the Council and the public will be the visibility and visual impacts of the development from the coast. The standards for visualisation of wind energy developments recently produced by the Council should be used.</li> <li>* The assessment of the impacts and means of transportation / transshipment / assembly of components of wind farm components is of high importance to the Council. The Council is keen to have existing port and assembly / laydown facilities in the Highlands utilised and developed for the offshore wind energy industry and the ES should examine these options in detail.</li> </ul>	<p>Addressed in Chapters 5.4, 8.4, 11.4 and 15.4.</p> <p>Port and harbour facilities have not yet been identified however, ports and harbour facilities have been shortlisted for construction and operation and maintenance works. It is not considered appropriate to provide a comparison of port and harbour options within this Environmental Statement as the final selection of facilities will involve commercial processes which cannot be published in a public document.</p>
<b>Scottish Environment Protection Agency (SEPA)</b>	<ul style="list-style-type: none"> <li>* Issues to be considered in the EIA process include: River Basin Planning, Pollution Prevention and Environmental Management and Coastal Processes.</li> </ul> <p><b>Scope of the ES for marine developments</b></p> <ul style="list-style-type: none"> <li>* SEPA recommends the production of a single ES which covers all aspects of the proposed development.</li> </ul>	<p>River Basin Planning , pollution prevention and environmental management are addressed in Chapters 3.7, 9.3 and 13.3.</p> <p>Coastal Processes are addressed in Chapter 3.5, 6.2 and 9.2.</p> <p>This has been achieved as far as practicable.</p>

Organisation	Summary of Response	MORL Approach
<b>Scottish Environment Protection Agency (SEPA)</b>  <b>(continued)</b>	<p><b>Site layout and nature of construction for marine developments</b></p> <ul style="list-style-type: none"> <li>* The ES should contain plans giving detailed information on the site layout, including details of all onshore and offshore components. The plans should be supported by a statement detailing the development, as well as the reasons for the choice of site and design of the development.</li> </ul>	<p>Details have been provided as far as they are available. However, detailed site layouts cannot be provided at this stage but a Rochdale Envelope has been provided. Site choice is described in Chapter 2.1.</p>
	<ul style="list-style-type: none"> <li>* The cumulative assessment on marine processes may need to include existing renewables and marine and coastal developments.</li> </ul>	<p>Addressed in Chapters 13.1 and 13.2.</p>
	<ul style="list-style-type: none"> <li>* The ES should include information on the likely timing and duration of the Project, possible long-term locational and / or operational impacts and short-term construction impacts.</li> </ul>	<p>Addressed in Chapter 2.2.</p>
	<p><b>River Basin Management Planning</b></p> <ul style="list-style-type: none"> <li>* The wind farm development area lies close to a number of coastal and estuarine water bodies, all of which are currently at good or high ecological status. Any proposed development within these waters must have regard to the requirements of the Water Framework Directive.</li> </ul>	<p>Addressed in Chapters 3.7, 9.3 and 13.3.</p>
	<ul style="list-style-type: none"> <li>* Cumulative assessments should consider the proposals alongside any existing coastal development.</li> </ul>	<p>Addressed in Chapter 3.5, 6.2 and 9.2.</p>
	<ul style="list-style-type: none"> <li>* Maps should be included in the ES showing the areas of seabed likely to be affected by the footprint of the turbine bases and cabling, and the area of intertidal zone that is likely to be affected by shoreline infrastructure development.</li> </ul>	
	<p><b>Construction Environmental Management Document (CEMD) and pollution prevention</b></p> <ul style="list-style-type: none"> <li>* Steps should be taken where applicable to minimise pollution of the shoreline and on-shore water environment to barest minimum levels.</li> </ul>	<p>All aspects under this heading are addressed in the Draft EMP (Technical Appendix 1.3 A).</p>
	<ul style="list-style-type: none"> <li>* A draft schedule of mitigation should be produced as part of the Project Environmental Management Process (PEMP).</li> </ul>	<p>Noted.</p>
	<ul style="list-style-type: none"> <li>* The Schedule of Mitigation should include a timetable of work that takes into account all environmental sensitivities, such as fish spawning. Timing should also be planned to avoid construction of roads, dewatering of pits and other potentially polluting activities during periods of high rainfall.</li> </ul>	<p>Noted.</p>

Organisation	Summary of Response	MORL Approach
<b>Scottish Environment Protection Agency (SEPA)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* SEPA recommend that the principles of the CEMD are set out in the ES drawing together and outlining all the environmental constraints and commitments, proposed pollution prevention measures and mitigation as identified in the ES.</li> </ul>	Noted.
	<ul style="list-style-type: none"> <li>* The CEMD should form basis of more detailed site specific Construction Environmental Management Plans (CEMPs) which along with detailed method statements may be required by planning condition.</li> </ul>	Noted.
	<ul style="list-style-type: none"> <li>* SEPA recommend that the detailed CEMD is submitted for approval to the determining authority at least two months prior to the proposed commencement of development in order to provide consultees sufficient time to assess the information.</li> </ul>	Noted.
	<p><b>Waste Management</b></p> <ul style="list-style-type: none"> <li>* Details of how waste will be minimised at the construction stage should be included in the ES.</li> </ul>	This issue is addressed in the Draft EMP (Technical Appendix 1.3 A).
	<ul style="list-style-type: none"> <li>* A site specific site waste management should be produced.</li> </ul>	
	<p><b>Flood risk</b></p> <ul style="list-style-type: none"> <li>* The location of the onshore substation should be assessed for flood risk. If a flood risk is identified then a flood risk assessment (FRA) should be carried out following the SEPA's guidance.</li> </ul>	These matters have been addressed in this ES based on details currently available for the OnTI. Further information will be provided once the location and layout of the substation have been confirmed.
	<p><b>Onshore drainage strategy</b></p> <ul style="list-style-type: none"> <li>* Proposed temporary and long-term foul drainage facilities for workers associated with the onshore component of the development must be described in the ES. A site drainage strategy should also be submitted.</li> </ul>	An onshore substation location has not yet been identified.
	<ul style="list-style-type: none"> <li>* Surface water drainage arrangements associated with the new substation should incorporate the attenuation and treatment principles of sustainable drainage systems (SUDS).</li> </ul>	
<p><b>Marine ecological interests</b></p> <ul style="list-style-type: none"> <li>* Information on how the development will contribute to sustainable development should be submitted. Opportunities to enhance marine habitats should be explored.</li> </ul>	Addressed in Chapter 1.1.	

Organisation	Summary of Response	MORL Approach
<b>Scottish Environment Protection Agency (SEPA)</b> (continued)	<ul style="list-style-type: none"> <li>* During the construction phase, it is important that good working practice is adopted and that habitat damage is kept to a minimum and within defined acceptable parameters.</li> </ul>	Addressed in Draft EMP (Technical Appendix 1.3 A).
	<p><b>Marine Processes</b></p> <ul style="list-style-type: none"> <li>* Marine processes should be assessed as part of the ES. This should include a baseline to identify the marine and sedimentary processes operating in the area. The baseline should identify the following features and processes in the environment: sediments, hydrodynamics, sedimentary environment, sedimentary structures and typical suspended sediment concentrations.</li> </ul>	Addressed in Chapter 3.4 and 3.5.
	<ul style="list-style-type: none"> <li>* The hydrodynamic modelling should be robust and should represent reality as best as possible.</li> </ul>	Addressed in Chapter 3.4.
	<ul style="list-style-type: none"> <li>* The magnitude and significance of any changes to the natural processes identified in the baseline assessment should be demonstrated in the ES. It would be helpful to see a series of contour plots showing the magnitude and spatial extent of + (ve) and -(ve) changes in current velocities between the 'pre development' and 'post development' scenarios. The assessment should also identify and quantify the relative importance of high energy low frequency events. Any changes to the existing processes can then be used to infer the extent of any changes to sediment transport processes and potential impacts on the marine ecology.</li> </ul>	Addressed in Chapters 6.1 and 6.2.
<b>Royal Society for the Protection of Birds (RSPB)</b> (29/10/10)	<ul style="list-style-type: none"> <li>* RSPB is content that the proposed programme of boat surveys, coupled with the use of aerial survey data and existing data e.g. from BOWL bird surveys, meets currently-accepted standards.</li> </ul>	Noted.
	<ul style="list-style-type: none"> <li>* RSPB anticipates that there may be practical difficulties in recording bird by species, every minute, in five distance bands and six height bands with direction of flight and additional information. RSPB would seek reassurance that either our fears are unfounded or that contingency arrangements are in place.</li> </ul>	Addressed in Chapter 4.5 and Appendix 4.5 A.
	<ul style="list-style-type: none"> <li>* There will be a need to assess whether bird distribution, numbers, behaviour and species present is likely to differ significantly under more extreme conditions than the ones recorded during surveys.</li> </ul>	
	<p><b>Assessing Impacts on SPAs</b></p> <ul style="list-style-type: none"> <li>* In order to assess if the proposals are or are not likely to have an adverse effect on the integrity of any SPAs it will be necessary to determine the origin of birds present on the development site, in terms of breeding colonies, and how populations, specially SPA populations, may be impacted in terms of number and breeding success.</li> </ul>	Addressed in Chapters 4.4 and 7.4.
	<ul style="list-style-type: none"> <li>* It will be necessary to use bird tracking data in order to collect information on the directions of which birds move to or from the development site and to and from SPA seabird breeding colonies.</li> </ul>	Tracking and migration surveys were done - addressed in Chapter 4.5 and Technical Appendices 4.5 A and B.

Organisation	Summary of Response	MORL Approach
<b>Royal Society for the Protection of Birds (RSPB)</b> <b>(29/10/10)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* Boat and aerial techniques do not allow assessment of impacts on passage seabirds and migratory waders, ducks and geese and therefore radar should be considered.</li> </ul>	As above.
	<ul style="list-style-type: none"> <li>* RSPB encourages developing a comprehensive programme involving the study of sufficiently-large samples of birds, of all species, at the range of SPA colonies.</li> </ul>	Addressed in Chapter 4.5 and Technical Appendices 4.5 A, 4.5 B and 4.5 C.
	<ul style="list-style-type: none"> <li>* Bird activity on the developing site should be judged against breeding performance of the birds at the relevant colonies in the relevant year.</li> </ul>	Addressed in Chapter 4.5 and Technical Appendix 4.5 A.
	<ul style="list-style-type: none"> <li>* There will be a need to carry out a HRA to determine the proposal's impact on SPA populations of geese and swans (and perhaps other species) which are likely to fly through the area.</li> </ul>	Information to inform the HRA for SPAs is contained within Chapter 7.4.
	<p><b>Cumulative and in-combination effects</b></p>	
	<ul style="list-style-type: none"> <li>* RSPB believes that the potential for cumulative impacts also arises from other proposals - and to additional sites - not listed in the scoping report.</li> </ul>	Addressed in Chapter 14.4 and Appendix 4.5 A.
	<ul style="list-style-type: none"> <li>* For foraging seabirds RSPB suggests that it would be prudent to consider a much wider study area than detailed in the scoping report (e.g. cumulative impacts could accrue for species such as Manx shearwaters from Rum SPA or gannets from Forth Islands SPA).</li> </ul>	
	<ul style="list-style-type: none"> <li>* RSPB seeks clarification on how "Disruption to habitat function" is to be considered.</li> </ul>	
	<p><b>Mitigation</b></p>	
<ul style="list-style-type: none"> <li>* Mitigation to be considered could include designs of the wind farm layout, turbine height and/or operational limitations such as shut-down periods for example.</li> </ul>	Periods of shut-down are not an appropriate mitigation measure as they would create an uneconomical project. A Rochdale Envelope of infrastructure has been provided.	
<ul style="list-style-type: none"> <li>* The potential draw of any lighted structures to birds should be considered (lights within an area of very little light pollution means that attraction could be an issue).</li> </ul>	Lighting will be in accordance with navigational and aviation requirements.	
<ul style="list-style-type: none"> <li>* The EIA should consider whether turbine colouration (potentially including the use of ultraviolet markings) may make the turbines more visible to birds.</li> </ul>	Turbine colouration will be in line with UK guidance.	

Organisation	Summary of Response	MORL Approach	
<b>Royal Society for the Protection of Birds (RSPB)</b> <b>(29/10/10)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* Consideration should be given to the outputs of any research that may help to identify other suitable mitigation.</li> </ul>	No suitable concluded research has yet been identified.	
	<p><b>Carbon balance</b></p> <ul style="list-style-type: none"> <li>* RSPB wishes to see details of the full carbon balance budget for the proposed development detailed in the ES.</li> </ul>	Addressed in Chapters 5.8 and 8.7.	
<b>Ministry of Defence (MoD)</b> <b>(09/09/10)</b>	<ul style="list-style-type: none"> <li>* The MOD's main concern relates to the potential to create a physical obstruction to air traffic movements and cause interference to Air Traffic Control and Air Defence radar installations.</li> </ul>	Addressed in Chapters 5.8, 8.7, 11.8 and 15.8.	
	<p><b>Air Traffic Control (ATC) radar</b></p> <ul style="list-style-type: none"> <li>* The turbines will be between 33.6 and 76.8 km from, in line of sight to, and will cause unacceptable interference to the ATC radar and RAF Lossiemouth. Detrimental effect on the performance of the MoD's ATC include desensitisation of radar in the vicinity of the turbines and the creation of "false" aircraft returns which Air Traffic Controllers must treat as real. The desensitisation of radar could result in aircraft not being detected by the radar and therefore not presented to Air Traffic Controllers. The creation of "false" aircraft displayed on the radar leads to increased workload for both controllers and aircrews, and may have a significant operational impact.</li> </ul>		
	<ul style="list-style-type: none"> <li>* The MoD is willing to enter discussions with the developer with the aim of finding suitable mitigation, however research and financial responsibility rests with the developer.</li> </ul>		MORL acknowledges this and is consulting with MoD.
	<p><b>Low Flying</b></p> <ul style="list-style-type: none"> <li>* The turbines will be within EGD (UK Danger Area) 807 and will unacceptably affect military activities.</li> </ul>		This objection has been removed by MoD in November 2011.
	<ul style="list-style-type: none"> <li>* If the above issues are solved, the MoD will request the turbines to be fitted with aviation lighting.</li> </ul>		Lighting will be in accordance with navigational and aviation requirements.
	<ul style="list-style-type: none"> <li>* The applicant should take account of MoD aviation and radar operations in completing the EIA, particularly in identifying a suitable site for development and the dimensions of the turbines that are to be installed.</li> </ul>	Addressed in Chapters 5.8, 8.7, 11.8 and 15.8.	
<b>Civil Aviation Authority (CAA)</b>	<ul style="list-style-type: none"> <li>* CAA has previously recommended discussion with Wick airport and with the helicopter operators based at Aberdeen airport (BOND Offshore Helicopters and Bristow Eastern Hemisphere).</li> </ul>	Please see Appendix 1.4 C.	

Organisation	Summary of Response	MORL Approach
<p><b>Civil Aviation Authority (CAA)</b></p> <p><b>(continued)</b></p>	<p>* The ES will need to detail the associated viewpoints for both NATS and the MoD. The outcome of negotiations with these organisations and associated mitigations as agreed should be reported in the ES.</p>	<p>Addressed in Chapters 5.8, 8.7, 11.8 and 15.8.</p>
	<p>* With respect to Aviation Warning Lighting, the wind farm will fall under the requirements of Air Navigation Order 2009 Article 220 and this will need to be addressed in the ES.</p>	<p>Lighting will be in accordance with navigational and aviation requirements.</p>
	<p>* With respect to Landfall, the ES may need to address aviation impacts between Landfall and onshore substation(s) if power lines are a significant height above ground.</p>	<p>Only underground lines will be used.</p>
	<p>* The rotor blades, nacelle and upper 2 / 3 of the supporting wind turbines mast should be painted in white (international aviation regulatory documentation).</p>	<p>Turbine colouration will be in line with UK guidance.</p>
	<p>* All structures over 300 feet will need to be charted on aviation maps. CAA would be interested in any proposed schedule of promulgation of the construction of the turbines.</p>	<p>Addressed in Chapters 5.8, 8.7, 11.8 and 15.8.</p>
	<p>* Consideration should be given to the lighting and marking of meteorological masts.</p>	<p>Lighting and markings will be in accordance with standard UK guidance.</p>
	<p>* There is a CAA perceived requirement for a co-ordinated regional wind turbine development plan. Given the concentration of wind farm developments in the Forth and Tay area, a co-operative 'regional solution' between the developers in the area is seen as a desirable approach [WHERE FORTH &amp; TAY IS MENTIONED THE CONSULTEE MAY HAVE BEEN REFERRING TO MORAY FIRTH].</p>	<p>The Project is not at a design stage which will allow such collaboration. In addition, the locations for infrastructure will be dependent on the site specific wind conditions, geology and the actual types of infrastructure that is finally used. Furthermore, it is National Grid which determines the location of grid connection points and not the developer.</p>
<p><b>NERL Safeguarding</b></p>	<p>* The proposed development has the potential to affect NERL's Communications, Navigation and Surveillance (CNS) Infrastructure. NERL offer a technical and operational assessment which could explore the extent of the predicted impact. In order to carry out such assessment, NERL would require further details on the dimensions of the largest possible turbines which may be installed.</p>	<p>NATS TOPA study being undertaken.</p>

Organisation	Summary of Response	MORL Approach
<b>NERL Safeguarding (continued)</b>	* NERL wishes to engage with the developer to ascertain the extent of the potential impact of the proposed wind farm.	Meetings held on 30/11/11.
<b>Maritime &amp; Coastguard Agency (MCA)</b>	* The ES should supply detail on the possible impact on navigational issues, both commercial and recreational, including: collision risk, navigational risk, visual intrusion and noise, risk management and emergency response, marking and lighting of site and information to mariners, effect on small craft navigational and communication equipment, the risk of drifting recreational craft in adverse weather and tidal conditions, the likely squeeze of small craft into the routes of larger commercial vessels.	Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.
	* A navigation risk assessment will need to be submitted in accordance with MGN 371 (and 372) and the DTI / DfT / MCA Methodology for Assessing Wind farms.	
	* Particular attention should be paid to cabling routes and burial depth, and an anchor penetration study or burial protection index may be necessary.	
	* Reference should be made to Marine Environmental High Risk Areas (MEHRA).	
	* The reference to Marine & Coastguard Agency should be amended to Maritime & Coastguard Agency and the reference to Pilotage Association should be amended to the UK Marine Pilots Association (UKMPA).	Addressed in Chapter 15.2.
	* Any application for construction (and operation) safety zones will need careful consideration.	
	* Consideration should be given to cumulative and in-combination effects, particularly with BOWL.	Potential navigational impacts on oil and gas infrastructure are addressed in Chapters 5.8, 8.7, 11.8 and 15.8.
	* MCA does not agree that the potential impacts on oil & gas infrastructures should be scoped out. An holistic approach should be followed, including consideration of the western development zone and BOWL proposed developments.	
	* Given the volume of traffic assessing the Beatrice development area consideration may need to be given to providing a NW/SE route.	The current proposals do not interfere with this route.
	* Consideration should also be given to the arrival and departure points of the marine traffic beyond 10 miles.	Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.
* Casualty information from the MAIB and RNLI would be a good data source in establishing the risk profile for the area.		

Organisation	Summary of Response	MORL Approach
<b>Maritime &amp; Coastguard Agency (MCA)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* The principles of the Rochdale envelope should be used in the EIA.</li> </ul>	Addressed in Chapter 2.2.
	<ul style="list-style-type: none"> <li>* Particular consideration should be given to the implications of the size and location on SAR resources and Emergency Response &amp; Co-operation Plans (ERCOP) and Guard Vessel provisions.</li> </ul>	Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.
	<ul style="list-style-type: none"> <li>* The effects on ship's radar will need to be assessed on a site specific basis taking into account previous reports on the subject (MCA website).</li> </ul>	
<b>The Northern Lighthouse Board (NLB)</b> <b>(23/09/10)</b>	<ul style="list-style-type: none"> <li>* The NLB agrees that Notice to Mariners, Radio Navigation Warning and publications in appropriate bulletins will be required stating the nature and timescales of works carried out in the marine environment.</li> </ul>	See EMP (Appendix 1.3 A).
	<ul style="list-style-type: none"> <li>* All navigational marking and lighting of the site or its associated marine infrastructure will require the Statutory Sanction or the NLB prior to deployment.</li> </ul>	A statutory sanction will be applied for when the final design and infrastructure are known. Proposals for marking and lighting will be in accordance with navigational and aviation requirements.
	<ul style="list-style-type: none"> <li>* The Navigational Risk Assessment is required to be in accordance with the information given at Chapter 5.3.3 (scoping report), and in line with the requirement of MCA Marine Guidance Note 371.</li> </ul>	Addressed in Chapters 8.2, and 11.2.
	<ul style="list-style-type: none"> <li>* The NLB encourages the Navigational Risk Assessment to include a workshop approach to hazard identification and mitigation.</li> </ul>	Workshops were held on 6 & 7 July 2011.
	<ul style="list-style-type: none"> <li>* The NLB also encourages engagement with the Moray Firth Offshore Wind Developers Group to work together to minimise the cumulative impact of site development.</li> </ul>	Addressed in Chapter 15.2 (Shipping and Navigation Cumulative Impact Assessment)
<b>RYA Scotland</b>	<ul style="list-style-type: none"> <li>* RYA is pleased to see that recreational boating is considered under 'Navigation and Shipping' and 'Socio-Economics'. RYA also welcomes the statement that the rotor tip height will take into consideration the navigational safety of recreational vessels.</li> </ul>	Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.
	<ul style="list-style-type: none"> <li>* The RYA expects that data from the UK Coastal Atlas of Recreational Boating will be taken into account and represented in the ES.</li> </ul>	
	<ul style="list-style-type: none"> <li>* The RYA welcomes the statement that additional data is being collated using radar tracking for non-AIS vessels, as recreational craft do not tend to carry AIS and therefore are not represented in such surveys.</li> </ul>	

Organisation	Summary of Response	MORL Approach
<b>RYA Scotland (continued)</b>	* The RYA welcomes the commitment to undertake the Marine Navigational Risk Assessment following 'DTI Methodology'.	Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.
	* The RYA would expect to see that recreational craft are to be included in the Navigational Risk Assessment and that RYA will be part of the consultees for this assessment.	
	* Commercial and recreational navigation should be included within the assessment of cumulative and in-combination effects.	
	* The RYA considers that the creation of safety zones around individual operational turbines that exclude small craft are unlikely to increase their navigational safety and would therefore be unnecessary, impracticable and disproportionate.	Operational safety zones may be used to protect the infrastructure from various types of navigation activity.
	* The RYA recognises that increased navigational risk occurs during construction, major maintenance and decommissioning and therefore temporary safety zones are required. These activities should be supported by regular Notices to Mariners.	See EMP (Appendix 1.3 A).
	* In summary, the RYA's concerns with offshore wind energy developments and recreational boating relate to: navigational safety (collision risk, risk management and emergency responses, marking and lighting, effect on small craft navigational and communication equipment, weather), location (loss of cruising routes, squeeze into commercial routes, effect on sailing and racing areas, cumulative effects, visual intrusion and noise), end of life (dereliction, decommissioning), and consultation.	Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.
<b>Ports &amp; Harbours</b>	* The application must include a full Navigation Risk Assessment in line with MGN 371.	Addressed in Chapter 8.2.
<b>The Joint Radio Company Ltd. (JNC)</b>	* The JRC does not foresee any potential problems based on known interference scenarios and the data provided. Due to the large number of adjacent radio-links in this vicinity, clearance is given specifically for a location within 10m of the declared grid reference.	Noted.
	* MORL is advised to seek re-coordination prior to submitting a planning application, as the use of the spectrum is dynamic and the use of the band is changing on an ongoing basis.	Addressed in Chapters 5.8 and 8.7.
<b>Historic Scotland (HS)</b>	* Information on all scheduled monuments, listed buildings, gardens and designated landscapes and designated wreck is available from <a href="http://www.PASTMAP.org.uk">www.PASTMAP.org.uk</a>	Addressed in Chapter 5.5.

Organisation	Summary of Response	MORL Approach
<b>Historic Scotland (HS)</b> <b>(continued)</b>	<b>Marine Assets</b> * HS confirms that there are no designations within their statutory remit located within the proposed development area.	Noted.
	* HS recommends that the potential impact on undesignated wrecks is assessed as these could be subject to potential direct impacts, depending on the location of the sub-sea works. Indirect impacts on historic assets on the seabed within the proposed development area and possibly beyond which may be caused by alteration to tidal currents and sedimentary regimes, and by changes to the chemical balance of the water and seabed sediments, should be assessed.	Addressed in Chapter 8.5.
	* Flemming (2004) suggests that prehistoric artefacts could (admittedly with low probability) be present in almost any sediment from the seabed in SEA 5. HS encourages that archaeological analysis of grab and core samples to be undertaken, and that results of all archaeological assessments should be archived through the Royal Commission on the Ancient and Historical Monuments of Scotland.	Addressed in Chapter 5.5.
	<b>Terrestrial Assets - Potential Direct Impacts</b> * HS will provide further comments for this item separately.	OfTI scoping results see Annex 2 below.
	<b>Terrestrial Assets - Impact on Setting</b> * HS confirms that there are terrestrial assets with a seascape setting, which may be subject to an indirect impact. However, due to the separation distance, these are unlikely to be significant adverse.	Addressed in Chapters 5.5 and 8.5.
	<b>Cumulative Impact</b> * HS welcomes that potential cumulative impacts shall be assessed.	Addressed in Chapter 15.5.
	<b>Our Views on the Principle of this Proposal</b> * HS are content with the principle of the proposal. HS considers unlikely that there shall be significant adverse impacts on marine assets and on the setting of terrestrial assets within HS statutory remit.	Noted.
	* In HS's view, the proposed methodology for baseline surveys, assessment of impacts and mitigation is considered acceptable.  * The relevant Council archaeological and conservation service will be able to provide information and advice on unscheduled archaeology and category B and C (S) listed buildings.	Noted.  Addressed in Chapter 5.5.

Organisation	Summary of Response	MORL Approach
<b>Historic Scotland (HS)</b> <b>(continued)</b>	* Please refer to advice contained in HS's technical guidance note on setting.	Addressed in Chapter 5.5 and 8.5.
<b>Transport Scotland</b>	* The percentage increase in traffic on the trunk road is such that the proposed development is likely to cause minimal environmental impact on the trunk road. On this basis TRNMD have no comments to make.	Issue discussed in Chapter 11.7.
<b>Scottish Canoe Association (SCA)</b>	* The SCA do not have any concerns with this proposal.  * Given the distance out to sea this is not an area where sea Kayakers would venture into and the development should not have any significant impact on tidal flows and sediment deposition close to shore where small recreational boats such as kayaks could be affected by any potential changes to tidal flows and sandbanks.	Noted.
<b>Health and Safety Executive (HSE)</b> <b>(29/09/10)</b>	* HSE cannot usefully comment on what information should be included in the ES, however it should not include measures which could conflict with the requirements of the Health and Safety at Work etc etc. Act 1974 and its relevant statutory provisions.	Noted.
<b>Moray Firth Inshore Fisheries Group (MFIFG)</b> <b>(26/11/2010)</b>	* It is important to consider the potential impacts of EMFs produced by both AC and DC currents as within the site both types of transmission currents are likely to exist (behavioural response to electromagnetic fields associated with cabling)  * In the scoping document it mentions that "It is anticipated that a local fishing vessel will be used to carry out the otter trawl survey. The net used will be similar to nets used by commercial vessels in the area and will be ... with an 80mm mesh" - It is important to recognise that the squid fishery which is prosecuted in the area uses a mesh size of 45mm.  * The use of averaged annual landings values over extended periods should be treated with caution due to the nature of the fisheries concerned. In recent years the squid and scallop fisheries have assumed a leading economic importance from the Smith bank area, including the Eastern area of the MORL zone.  * The scoping report mentions that "There are relatively very low recorded landings values of pelagic species in the Moray Firth" - for herring and sprat this is true while for mackerel this is likely to be an artefact of the method used to compile fisheries landings statistics.	Addressed in Chapter 7.2 and 10.2.  Fish surveys were not carried out on the advice of Marine Scotland Science.  Addressed in Chapter 5.1.

Organisation	Summary of Response	MORL Approach
<b>Moray Firth Inshore Fisheries Group (MFIFG)</b> <b>(26/11/2010)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* MFIFG considers that there will be significant data gaps of squid fishery based on official data, and therefore alternative methods of gaining an accurate assessment of the fishery in the area will be required.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>* Additional comments as per BOWL scoping response are also relevant.</li> </ul>	<p>Addressed in Chapter 5.1.</p> <hr/> <p>Addressed throughout EIA where relevant. Particularly Chapter 7.2/10.2 (Fish and Shellfish Ecology) and 8.1/11.1 (Commercial Fisheries).</p>
<b>LifeScan Scotland Ltd.</b> <b>(Johnson &amp; Johnson)</b>	<ul style="list-style-type: none"> <li>* As a major manufacturing employer in the Highlands LifeScan Scotland would like to engage as stakeholder on two fronts: <ul style="list-style-type: none"> <li>o review the scoping doc (Craig Milroy, MORL, has forwarded the scoping document);</li> <li>o some long term agreement, either through power agreements or ownership of turbines to supply Electricity to our Inverness plant.</li> </ul> </li> </ul>	<p>We do not have visibility of the commercial usage of this Project. This will only come after consent.</p>
<b>The Scottish Government</b> <b>(16/09/2010)</b>	<ul style="list-style-type: none"> <li>* The SG does not wish to participate in the consultation.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>* Suggested contacting SNH to receive SG's views.</li> </ul>	<p>Noted.</p>

## Annex 2 to Chapter 1.3

Table 1.3-8 Summary of OfTI Scoping Opinions Received and Approach Taken to Issues Raised

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland (The Scottish Government) (17/10/2011)</b>	* Email of acknowledgement of receipt of MORL's offshore transmission infrastructure scoping report	Noted.
<b>Marine Scotland (The Scottish Government)</b>	<b>Introduction</b> * Scottish Ministers welcome the commitment given in the report that the EIA process will identify mitigation measures in order to avoid, minimise or reduce any adverse impacts. Marine Scotland would suggest that the range of options considered should be informed by the EIA process in order that these objectives can be achieved.	Noted.
	<b>Land Use Planning</b> * [The legislation to be considered has been provided in the consultation response document]	Noted.
	<b>Natural Heritage</b> * SNH has produced a service level statement (SLS) for renewable energy consultation. Annex A details a list of references which should be fully considered as part of the EIA process.	Incorporated into relevant chapters.
	<b>General Issues</b> <i>Economic Benefit</i> * The application should include relevant economic information connected with the project, including the potential number of jobs, and economic activity associated with the procurement, construction operation and decommissioning of the development.	Addressed in Chapters 5.6, 8.6, 11.6 and 15.6.
	<b>Contents of the ES</b> <i>Format</i> * The ES should be submitted in a user-friendly PDF format.  * It is considered good practice to set out within the ES the qualifications and experience of all those involved in collating, assessing or presenting technical information.	Incorporated in all chapters.

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland  (The Scottish Government)  (continued)</b>	<i>Non Technical Summary</i> * Should be written in simple non-technical terms to describe the various options for the development and mitigation measures.	Addressed in Volume 1 Non Technical Summary.
	* Within the ES it is important that all mitigation measures are: clearly stated, fully described with accuracy, assessed for their environmental effects, assessed for their effectiveness, their implementation should be fully described, how commitments will be monitored, and, if necessary, how they relate to any consents or conditions.	
	* The EIA must address this uncertainty so that there is a clear explanation of the potential impact of each of the different scenarios. It should be noted that any changes produced after the ES is submitted may result in the requirement of further environmental assessment and public consultation if deemed to be significant by the licensing authority.	
	<b>Archaeology</b> <i>General Principles</i> * The ES should address the predicted impacts on the historic environment and describe the mitigation proposed to avoid or reduce impacts to a level where they are not significant.  * Amongst other things, SPP Paragraph 110–112, Historic Environment, stresses that scheduled monuments should be preserved in situ and within an appropriate setting. and states that developments must be managed carefully to preserve listed buildings and their settings to retain and enhance any special architectural or historic features of interest. Consequently, both direct impacts on the resource itself and indirect impact on its setting must be addressed in any EIA undertaken for this proposed development.	Addressed in Chapters 8.5 and 11.5.
	<i>Baseline Information</i> * Information on the location of all archaeological/historical sites held in the National Monuments Record of Scotland can be obtained from <a href="http://www.PASTMAP.org.uk">www.PASTMAP.org.uk</a>  * Data on scheduled monuments, listed buildings and properties in care can also be downloaded from Historic Scotland's Spatial Data Warehouse. For further information contact <a href="mailto:hsgimanager@scotland.gsi.gov.uk">hsgimanager@scotland.gsi.gov.uk</a>	Acknowledged.

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland (The Scottish Government) (continued)</b>	<p><b>Navigation</b></p> <ul style="list-style-type: none"> <li>* The ES should supply detail on the possible impact on navigational issues for both commercial and recreational craft, through: collision risk, navigational safety, risk management and emergency response, marking and lighting of tidal site and information to mariners, effect on small craft navigational and communication equipment, weather and risk to recreational craft which lose power and are drifting, in adverse weather conditions, evaluation of likely squeeze of small craft into routes of larger commercial vessels, and visual intrusion and noise.</li> </ul>	<p>Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.</p>
	<p><b>Ecology, Biodiversity and Nature Conservation</b></p> <p><i>Species</i></p> <ul style="list-style-type: none"> <li>* The ES needs to shown that the relevant wildlife legislation and guidance were taken into account.</li> </ul>	<p>Addressed in Chapters 7.1 to 7.4.</p>
	<ul style="list-style-type: none"> <li>* The presence of protected species such as Schedule 1 Birds or European Protected Species must be included and considered as part of the application process. The presence of species on Schedule 5 (animals) and 8 (plants) of the Wildlife &amp; Countryside Act 1981 should also be considered.</li> </ul>	<p>Addressed in Chapters 7.1 to 7.4.</p>
	<p><b>Water Environment</b></p> <ul style="list-style-type: none"> <li>* Developers are strongly advised at an early stage to consult with SEPA as the regulatory body responsible for the implementation of the Controlled Activities Regulations (CAR).</li> </ul>	<p>Addressed in Chapters 3.7 and 9.3.</p>
	<ul style="list-style-type: none"> <li>* SEPA's Pollution Prevention Guidelines should be taking into account in the preparation of the ES and during development.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Prevention and clean-up measures should be considered for each of the stages of the development.</li> </ul>	<p>Addressed in Chapters 4.3, 7.2, 10.2 and 14.2 and Draft EMP (Technical Appendix 1.3 A).</p>
	<ul style="list-style-type: none"> <li>* Consultation with the local fishery board is encouraged at an early stage.</li> </ul>	
	<ul style="list-style-type: none"> <li>* The ES should identify location and protective/mitigation measures in relation to all private water supplies within the catchments impacted by the scheme, including modifications to the site design and layout.</li> </ul>	
<p><b>Other material Issues</b></p> <p><i>Traffic Management</i></p> <ul style="list-style-type: none"> <li>* The ES should provide information relating to the preferred route options for delivering equipment, etc etc. via the trunk road network. The ES should also address access issues, particularly those impacting upon the trunk network.</li> </ul>	<p>Addressed in Chapters 5.7, 11.7 and 15.7. Will also be addressed in the Town and Country Planning Application for the OnTI.</p>	

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland (The Scottish Government) (continued)</b>	<ul style="list-style-type: none"> <li>* Where potential environmental impacts have been fully investigated but found to be of little or no significance, it is sufficient to validate that part of the assessment by stating in the report: the work has been undertaken, what this has shown and why it is not significant.</li> </ul>	<p>Addressed in Chapters 5.7, 11.7 and 15.7. Will also be addressed in the Town and Country Planning Application for the OnTI.</p>
	<p><b>General ES Issues</b></p> <p><i>Consultation</i></p> <ul style="list-style-type: none"> <li>* The ES should also be submitted in a user-friendly PDF format.</li> </ul>	<p>This has been addressed throughout this ES.</p>
	<ul style="list-style-type: none"> <li>* Developers are asked to issue ESs directly to consultees.</li> </ul>	
	<ul style="list-style-type: none"> <li>* The Energy Consents Unit also requires 8 hard copies to be issued internally to Scottish Government consultees.</li> </ul>	<p>This has been addressed throughout this ES.</p>
	<p><i>Gaelic Language</i></p> <ul style="list-style-type: none"> <li>* Where s36 applications are located in areas where Gaelic is spoken, developers are encouraged to publicising the project details in both English and Gaelic.</li> </ul>	<p>MORL has received confirmation from Marine Scotland that this is not required.</p>
	<p><i>OS Mapping Records</i></p> <ul style="list-style-type: none"> <li>* A detailed Ordnance Survey plan showing the site boundary and all turbines, access tracks and onshore supporting infrastructure should be submitted in a format compatible with the Scottish Government's Spatial Data Management Environment (SDME), along with appropriate metadata, at the application stage.</li> </ul>	<p>This has been addressed throughout this ES.</p>
	<p><i>Difficulties in Compiling Additional Information</i></p> <ul style="list-style-type: none"> <li>* Developers are encouraged to outline their experiences or practical difficulties encountered when collating/recording additional information supporting the application.</li> </ul>	
<p><i>Application and ES</i></p> <ul style="list-style-type: none"> <li>* A developer checklist is enclosed with the consultation response document to help developers fully consider and collate the relevant ES information to support applications.</li> </ul>		

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland (The Scottish Government) (continued)</b>	<p><i>Consent Timescale and Application Quality</i></p> <ul style="list-style-type: none"> <li>* Developers are advised to consider all aspects of this scoping opinion when preparing a formal application, to reduce the need to submit information in support of applications.</li> </ul>	<p>This has been addressed throughout this ES.</p>
<b>Marine Scotland (The Scottish Government) Annex 1</b>	<ul style="list-style-type: none"> <li>* Marine Scotland Licensing and Operations Team (MS-LOT) feels that there are several challenges to overcome as the exact nature of the cabling is unknown. MS-LOT suggests that there should be some calculations to demonstrate the degree of alteration of natural electromagnetic fields (EMF) that would be caused by the cables. MS-LOT require MORL to model EMF under operational and shutdown conditions and relate this to fauna. This may have an effect on marine species directly (impact on species itself) or indirectly (impact on prey). Modelling the EMF will involve knowing the current in the cables, whether it is ac or dc, the degree of shielding inherent in the cable, the depth of burial and/or armouring, and the consequential alteration to natural fields at the sediment surface and in the water column. The predicted changes to fields should then be compared with what is known about sensitivity of mammals and fish to EMF. A cumulative consideration of other cables in the Moray Firth should be completed.</li> </ul>	<p>Addressed in Chapters 7.2, 10.2 and 14.2.</p>
	<ul style="list-style-type: none"> <li>* MS-LOT would comment on the use of a Rochdale Envelope for flexibility both in the Environmental Impact Assessment (EIA) process and in the final Environmental Statement (ES). It is the developers responsibility to give due consideration to what changes might be necessary and to provide details as to what might be required. The developer must also be able to justify whether or not a change is material to the EIA process. Where flexibility is required the developer should define either the alternatives or ranges within which parameters might fall. In the EIA process the various effects should be quantified and consideration given to effects on potential receptors. The ES should clearly state the reasoning for requiring such flexibility, the criteria for selecting the "worst case scenario" and the impacts which would arise from such a scenario.</li> </ul>	<p>This has been addressed throughout this ES.</p>
	<ul style="list-style-type: none"> <li>* Deemed Planning is not available as no part of the generating station is on land. All onshore aspects should be applied for through Town and Country Planning via the relevant Local Authority.</li> </ul>	<p>This has been understood. MORL will be submitting the onshore planning application to Aberdeenshire Council.</p>
	<ul style="list-style-type: none"> <li>* The applicant should be made aware of the definition of disturbance and the legal provisions on European Protected Species (EPS) and that an EPS Licence may be required. Therefore MS recommends that an EPS risk assessment is submitted to the Licensing Operations Team well in advance of planned surveys.</li> </ul>	
<ul style="list-style-type: none"> <li>* This project will require capital dredging. The dredged material will require to be chemically analysed to ensure that it is suitable for sea disposal. Guidance on pre-dredge sampling, along with the Action Levels Marine Scotland use to determine suitability for sea disposal can be obtained upon request from MS-LOT.</li> </ul>	<p>Noted.</p>	

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland  (The Scottish Government)  Annex 1  (continued)</b>	<i>Physical Environment</i> * OFTO Offshore Platform Infrastructure numbers and locations are unknown at this stage of the development making it difficult to assess the potential consequences of the installation method and operation of the structure (Section 2.3.2). More details are required on the scale of the bundled submarine export cable and how the proposed cable will be buried.	This has been addressed in the Project Description (Chapter 2.2).
	* MS seek clarification on whether the proposed methodology is also considered appropriate for construction and decommissioning, or solely for the operational phase of the project. There does not seem to be a clear distinction between these phases.	Addressed in Chapters 3.1-3.5, 6.1, 6.2, 9.1, 9.2, 13.1 and 13.2.
	* The spatial extent of changes to the levels of suspended sediment caused by construction and decommissioning need to be considered.	
	* Marine Scotland Science (MSS) have two issues related to the early scoping out of changes to regional bathymetry and changes to coastlines and sediment transport pathways (page 49). (7) There seems to be some overlap between the potential impacts identified and those that have been scoped out. Specifically, it is proposed that potential changes to regional bathymetry, coastlines and sediment transport pathways be scoped out, and yet there is a section on potential changes to the sedimentary regime and sedimentary structure. If it is decided to scope out these potential changes, then those sedimentary related issues identified earlier in the section still need to be considered. (8) MSS recommends that the issue of changing sediment transport pathways and the impact on coastlines should be included in the EIA. This is especially true for the last 10km before landfall where the proposed cable route is in relatively shallow water and overlies sediments that are likely to be relatively active. There is also little information within the scoping document regarding bedforms along the cable route, especially near the landfall site. An assessment of bedforms should be included in the EIA.	Sedimentary and Coastal Processes assessed in Chapters 3.5, 6.2 and 9.2.
	* Recent bathymetric survey work undertaken by SNH to identify potential MPA's covered the Southern Trench. This would help guide the developer on additional survey work and the potential cable route depending on the species/habitat of interest for the MPA.	Addressed in Chapter 4.2 and Technical Appendix 4.2 B.
	* MSS require clarification as to what is meant by "epibenthic community assessment" (p80).	Addressed in Chapters 4.2 and 7.1.

Organisation	Summary of Response	MORL Approach
	<ul style="list-style-type: none"> <li>* Potential changes in the sediments (loss of fines for example) should be considered as there is the potential for release of contaminants from disturbed sediments. MSS advises that sediment samples be collected for both particle size and chemical analysis. MSS advises the less than 63 micron sediment particles will also need to be quantified to give a silt content figure. Please also include sediment parameters such as skewness and kurtosis data.</li> </ul>	Sedimentary and Coastal Processes assessed in Chapters 3.1, 3.5, 6.2 and 9.2. Grab samples discussed in Chapter 4.2.
<b>Marine Scotland (The Scottish Government)  Annex 1 (continued)</b>	<ul style="list-style-type: none"> <li>* All mapping data should be provided to MS-LOT/MSS in an ESRI shape file format for GIS.</li> </ul>	Data will be provided in discussion with MS/MSS.
	<p><b>Fish and Shellfish Ecology</b></p> <p><i>Sandeels</i></p> <ul style="list-style-type: none"> <li>* Sandeel populations tend to be patchy in nature due to the reliance on a specific range of sediment. There are patches of sandeels present in and around the site and there is a strong possibility that there may be patches of sandeels along the cable route. Providing a patch is not completely within the cable route, there should be the opportunity for re-colonisation post disturbance. There may be some localised disturbance and suspended sedimentation but this should be limited due to the sediments involved.</li> </ul>	Addressed in Chapter 10.2.
	<p><i>Herring</i></p> <ul style="list-style-type: none"> <li>* It would be preferable to avoid works during the herring spawning period if possible (Aug-Sep). This becomes more of an issue towards the land fall end of the route where sediments become more suitable for herring spawning and this area is known to be important North East spawning ground. Not only are herring sensitive to disturbance from noise but their eggs and larvae may also be sensitive to noise.</li> </ul>	Addressed in Chapter 10.2.
	<p><i>Cod</i></p> <ul style="list-style-type: none"> <li>* The Moray Firth has a genetically distinct population of Cod. Little is known of the precise location of spawning grounds within the Firth but it is known that cod vocalize in spawning aggregations (key period is between Feb-Mar). The frequency range of these vocalisations is between 30-250 Hz and can travel 200-500m from the source.</li> </ul>	
	<ul style="list-style-type: none"> <li>* It would be worth ensuring good contact is made and consultation maintained with fisheries representatives in the area. This is especially important for the non-VMS vessels which are not represented by the VMS data plots. Points of contact other than the Scottish Fishermans Federation (SFF) may include local fishery offices and the inshore fisheries group coordinator for the Moray Firth (Nick Lake). MS advises to include vessels &lt;15m in the survey of shipping movements. Possible Marine Planning from The Pentland Firth is to be expanded around Scotland to show clearer activities from vessels &lt;15m.</li> </ul>	MORL has had direct consultation with SFF throughout the EIA process.

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland (The Scottish Government) Annex 1 (continued)</b>	<p><i>Aquaculture</i></p> <p>* There are no aquaculture sites within the proposed boundaries of the Moray Offshore Wind Farm. There is however, an active mussel site close to where one of the initial options for the cable route corridor joins the land between Lossiemouth Forest and Portgordon</p>	<p>As far as possible this has been addressed in Chapter 7.2, 10.2, 14.2 and Technical Appendix 4.3 B.</p>
	<p><i>Diadromous and Freshwater Fish</i></p> <p>* Offshore renewable developments have the potential to directly and indirectly impact diadromous fish of freshwater fisheries interest including Atlantic salmon, anadromous brown trout (sea trout) and European eel. In the case of Atlantic salmon information will be required to assess whether there is likely to be any significant effect of developments on rivers which are classified as Special Areas of Conservation (SAC's) for Atlantic salmon under the Habitats Directive. Where there is the potential for significant impact then sufficient information will be required to allow Marine Scotland to carry out an Appropriate Assessment. the developer should consider the site location (including proximity to sensitive areas), type of device, and the design of any array in addition to installation methodology. Specifically we request that developers provide information in the following areas:</p> <p>(9) Identify use of the proposed development area by diadromous fish</p> <p>(10) Identify the behaviour of fish in the area</p> <p>(11) Assess the potential impacts of deployed devices on diadromous fish during deployment, operation and decommissioning phases.</p> <p>(12) Consider the potential for cumulative impacts if there are multiple deployments in an area.</p> <p>(13) Assess 1-4 above to determine likely risk.</p> <p>(14) If there is any remaining doubt as to the potential impacts of a particular development, then the developer should recommend a scientifically robust monitoring strategy to assess any impacts either on stocks as a whole, or on particular rivers as necessary.</p>	
	<p><i>Marine Mammals and Birds</i></p> <p>* MS have no adverse comments for birds and mammals as the scope seems thorough. It builds on the information gathered from the main site.</p>	<p>Noted.</p>

Organisation	Summary of Response	MORL Approach
<b>Scottish Environment Protection Agency (SEPA)</b>	<p><b>Offshore Cable Works</b></p> <p><i>Site layout and nature of construction for marine developments</i></p> <p>* The ES should contain plans giving detailed information on the site layout, including details of all onshore and offshore components such as access tracks, buildings, cabling and marine devices. These plans should be supported by a statement detailing the development, as well as reasons for the choice of site and design of the development.</p>	<p>Addressed in the Project Description (Chapter 2.2).</p>
	<p>* Plans should be included in the ES showing the layout of the devices, cabling routes and associated onshore infrastructure.</p>	<p>Noted.</p>
	<p>* Background information that will help inform the ES process is available from European Marine Energy Centre (EMEC). <a href="http://www.emec.org.uk/index.asp">www.emec.org.uk/index.asp</a>.</p>	
	<p>* The submission should include information on likely timing and duration of the project, possible long-term locational and/or operational impacts and short-term construction impacts.</p>	
	<p><b>Carbon balance and peat management</b></p> <p>* We recommend that the ES contains a section systematically assessing carbon balance. This assessment should quantify the gains over the life of the project against the release of carbon dioxide during construction. It should include all elements of the proposal, including any borrow pits, construction of roads/tracks, excavation of trenches and other infrastructure such as the substations, and loss of any peat bog. Please refer to the Scottish Government guidance "Calculating carbon savings from wind farms on Scottish peat lands – A New Approach",</p> <p>* We note and welcome that the Scoping Report has identified the peat as a potentially sensitive receptor and that the ES will include a peat depth survey. Once this has been undertaken the ES should include preventative/mitigation measures to avoid significant drying or oxidation of peat through, for example, the construction of access tracks, drainage channels, cable trenches, or the storage and re-use of excavated peat. A detailed peat management scheme setting out these measures may be required through a planning condition, to ensure that the carbon balance benefits of the scheme are maximised.</p>	<p>Addressed in Chapter 5.8, 8.7 and 9.3.</p>
<p><b>Disruption to peatlands</b></p> <p>* The ES must demonstrate how the layout and design of the proposal, including any associated borrow pits, hard standing and roads; avoid impact on such areas where possible. For areas where avoidance is impossible details of how impact is minimised and mitigated should be provided, including a detailed map of peat depth for all construction elements that affect peatland habitats. The peat depth survey should include details of the basic peatland characteristics. Peatland impacts that should be considered include those from waste management, drainage, dewatering, excavation and pollution.</p>		

Organisation	Summary of Response	MORL Approach
<b>Scottish Environment Protection Agency (SEPA)</b> <b>(continued)</b>	<p><b>Disposal of waste peat to borrow pits</b></p> <ul style="list-style-type: none"> <li>* The disposal of surplus peat waste to borrow pits is not encouraged as experience has shown that peat used as cover can suffer from significant drying and oxidation, and that peat re-deposited at depth can lose structure and create a hazard when the stability of the material deteriorates.</li> </ul>	<p>Addressed in Chapter 5.8, 8.7 and 9.3.</p>
	<ul style="list-style-type: none"> <li>* There are important waste management implications of measures to deal with surplus peat. Peat disposed at depth must be considered in the context of waste being landfilled, and may not be consentable under our regulatory regimes. It is therefore essential that the scope for minimising the extraction of peat is explored and alternative options identified that minimise risk in terms of carbon release, human health and environmental impact. It is also important to discuss options with us at an early stage.</li> </ul>	<p>Addressed in Chapter 9.3.</p>
	<p><b>River Basin Management Planning</b></p> <ul style="list-style-type: none"> <li>* Although the turbines themselves will be located way beyond this limit, the onshore elements will fall within the river basin boundary. The windfarm development area lies close to a number of coastal and estuarine water bodies, all of which are currently at good or high ecological status. Any proposed development within these waters must have regard to the requirements of the Water Framework Directive to ensure that all surface water bodies achieve 'Good Ecological Status' and that there is no deterioration in status.</li> </ul>	
	<ul style="list-style-type: none"> <li>* River Basin Management Planning (RBMP) and WEWS seem to be mentioned in the best practice guidance section, section 5.1.6.6 on page 66 but are not described any further in the report. The ES should describe these and identify if the impacts of the proposal are likely to lead to deterioration of the surface water environment or present opportunities for improving the water environment. It should be recognised that RBMP applies to all surface waters including transitional (estuarine) and coastal waters out to 3 nautical miles offshore.</li> </ul>	
	<ul style="list-style-type: none"> <li>* The cumulative assessments should consider the proposals alongside any existing coastal development already present within the water bodies in which landfall locations are being considered.</li> </ul>	
	<ul style="list-style-type: none"> <li>* To allow for the RBMP classification to be updated and the assessment of cumulative impacts within these water bodies a site plan showing the location and extents of the cabling footprints, rock dumping etc., shoreline infrastructure and any temporary works, in the marine environment should be provided along with the locations of any sensitive habitats along the cable route.</li> </ul>	
<p><b>Construction Environmental Management Document (CEMD) and pollution prevention</b></p> <ul style="list-style-type: none"> <li>* Steps should be taken where applicable to minimise pollution of the shoreline and on-shore water environment to barest minimum levels. One of our key interests in relation to major developments is pollution prevention measures during the periods of construction, operation, maintenance, demolition and restoration. The construction phase includes construction of access roads, other site infrastructure and cable laying particularly across watercourses.</li> </ul>		

Organisation	Summary of Response	MORL Approach
<b>Scottish Environment Protection Agency (SEPA)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* We advise that the applicant, through the EIA process, should systematically identify all aspects of site work that might impact upon the environment, potential pollution risks associated with the proposals and identify the principles of preventative measures and mitigation. This will establish a robust Project Environmental Management Process (PEMP) for large scale (e.g. Major and Environmental Impact Assessment Projects (EIA). A draft Schedule of Mitigation should be produced as part of this process.</li> </ul>	Noted.
	<ul style="list-style-type: none"> <li>* A key issue for SEPA is the timing of works. Therefore, the Schedule of Mitigation should include a timetable of works that takes into account all environmental sensitivities, such as fish spawning, which have been raised by SEPA, SNH or other stakeholders. Timing should also be planned to avoid construction of roads, dewatering of pits and other potentially polluting activities during periods of high rainfall.</li> </ul>	Addressed in Chapter 9.3.
	<ul style="list-style-type: none"> <li>* The CEMD should form the basis of more detailed site specific Construction Environmental Management Plans (CEMPs) which along with detailed method statements may be required by planning condition or, in certain cases, through environmental regulation.</li> </ul>	
	<ul style="list-style-type: none"> <li>* SEPA recommend that the detailed CEMD is submitted for approval to the determining authority at least two months prior to the proposed commencement.</li> </ul>	
	<p><b>Marine Processes</b></p> <ul style="list-style-type: none"> <li>* Marine processes should be assessed as part of the ES. This should include a baseline assessment to identify the marine and sedimentary processes operating in the area. The baseline assessment should identify the following features and processes in the environment: <ul style="list-style-type: none"> <li>(15) Sediments (e.g. composition, contaminants and particle size);</li> <li>(16) Hydrodynamics (waves and tidal flows);</li> <li>(17) Sedimentary environment (e.g. sediment re-suspension, sediment transport pathways, patterns and rates and sediment deposition);</li> <li>(18) Sedimentary structures (e.g. protected banks);</li> <li>(19) Typical suspended sediment concentrations.</li> </ul> </li> </ul>	Addressed in Chapters 3.1 and 3.5.
	<ul style="list-style-type: none"> <li>* The magnitude and significance of any changes to the natural processes identified in the baseline assessment should be demonstrated in the ES. The assessment should identify and quantify the relative importance of high energy low frequency events e.g. storm events, versus low energy high frequency processes. Any changes to the existing processes can then be used to infer the extent of any changes to sediment transport processes and potential impacts on the marine ecology.</li> </ul>	

Organisation	Summary of Response	MORL Approach
<p><b>Scottish Environment Protection Agency (SEPA)</b> <b>(continued)</b></p>	<p><b>Marine ecological interests</b></p> <ul style="list-style-type: none"> <li>* SEPA also recommend information be submitted detailing how the development will contribute to sustainable development. Opportunities to enhance marine habitats in line with Water Framework Directive and The Nature Conservation (Scotland) Act 2004 objectives and Scottish Planning Policy guidance should be explored.</li> </ul>	<p>Addressed in Chapter 9.3.</p>
	<ul style="list-style-type: none"> <li>* During the construction phase, it is important that good working practice is adopted and that habitat damage is kept to a minimum and within defined acceptable parameters. These should be controlled through an environmental management plan.</li> </ul>	
	<ul style="list-style-type: none"> <li>* The accidental introduction of Marine Non-Native Species has been highlighted as a risk for water body degradation. SEPA recommends that, in line with WFD and MSFD objectives, the developers draw up and adopt a protocol to minimise risks of introducing marine invasive species to the area via attachment on marine plant and specialised equipment transported to the area before the constructional phase begins.</li> </ul>	
	<p><b>Wetland ecology (including groundwater dependent terrestrial ecosystems)</b></p> <ul style="list-style-type: none"> <li>* SEPA notes the identification of alteration/modification of the hydrological/hydrogeological regime of the region as a potential impact of the development and welcomes the proposal to carry out a Phase 1 habitat survey.</li> </ul>	
	<ul style="list-style-type: none"> <li>* National Vegetation Classification should be carried out for any wetlands identified. Results of these findings should be included in the ES, including appropriate maps with the location of infrastructure clearly marked.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Generally the layout of the site should be designed to avoid impacts on all wetlands. Peatland (active blanket bog in particular) should be avoided. If impacts on wetlands are likely then details of appropriate mitigation measures are required.</li> </ul>	
	<ul style="list-style-type: none"> <li>* If any groundwater dependent terrestrial ecosystems are located within a radius of (i) 100m from roads, tracks and trenches or (ii) 250m from borrow pits and foundations the likely impact of these features will require further assessment. This assessment should be carried out whether or not the features in (i) and (ii) occur within or outwith the site boundary in order that micro-siting and small changes to site layout do not necessitate further National Vegetation Classification work being carried out during unfavourable weather conditions. The results of this assessment and measures that will be taken to ensure the proposals do not have an unacceptable impact should be included in the ES.</li> </ul>	
	<p><b>Groundwater</b></p> <ul style="list-style-type: none"> <li>* To address this risk a list of groundwater abstractions sources both within and outwith the site boundary, within a radius of (i) 100m from roads, tracks and trenches and (ii) 250m from borrow pits and foundations, should be provided. Further details can be found in SEPA Planning guidance on wind farm developments.</li> </ul>	

Organisation	Summary of Response	MORL Approach
<b>Scottish Environment Protection Agency (SEPA)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* If groundwater abstractions are identified within the 100m and 250m radii from development infrastructure, then either the applicant should ensure that the route or location of engineering operations avoid this buffer area or further information and investigations will be required to show that impacts on abstractions are acceptable.</li> </ul>	Noted.
	<p><b>Waste management</b></p> <ul style="list-style-type: none"> <li>* Details of how waste will be minimised at the construction stage should be included in the ES, demonstrating that:               <ul style="list-style-type: none"> <li>(20) Construction practices minimise the use of raw materials and maximise the use of secondary aggregates and recycled or renewable materials;</li> <li>(21) Waste material generated by the proposal is reduced and re-used or recycled where appropriate on site.</li> <li>(22) To do this effectively all waste streams and proposals for their management should be identified.</li> </ul> </li> </ul>	Addressed in Chapter 9.3.
	<p><b>Flood risk</b></p> <ul style="list-style-type: none"> <li>* The onshore components of the development such as the substation may be at risk from coastal flooding. The location of the substation should therefore be assessed for flood risk from all sources in line with Scottish Planning Policy (Paragraphs 196-211).</li> </ul>	
	<ul style="list-style-type: none"> <li>* If a flood risk is identified then a flood risk assessment (FRA) should be carried out following the guidance set out.</li> </ul>	
	<p><b>Onshore drainage strategy</b></p> <ul style="list-style-type: none"> <li>* Proposed temporary and long-term foul drainage facilities for workers associated with the onshore component of the development must be described in the ES. SEPA also request the submission of a site drainage strategy, detailing methods for the collection and treatment of all surface water runoff from hard standing areas and roads using sustainable drainage principles, which should be shown on a site plan.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Surface water drainage arrangements associated with the new substation such as any new access roads and buildings should incorporate the attenuation (where appropriate) and treatment principles of sustainable drainage systems (SUDS).</li> </ul>	
<p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>* There are a number of cables being proposed in the Moray Firth, including the SHETL HVDC link, export cables for the Beatrice offshore wind proposal as well as these the export cable(s) for the Round 3 offshore windfarm zone. We recommend liaison between the various parties involved, to take a more strategic approach to planning these routes, including the cable landfall points. On Figure 2.1 it would also be helpful to present the proposed cable route options for the first development phase of the Round 3 offshore wind farm zone.</li> </ul>	Consultation with relevant stakeholders is ongoing.	

Organisation	Summary of Response	MORL Approach
<b>Scottish Natural Heritage (SNH)/Joint Nature Conservation Committee (JNCC)</b>  <b>(joint response)</b>	<p>* With regard to the transmission works, it would be helpful to know how the Rochdale Envelope principle will be applied to this part of the project. We recognise the importance of allowing some flexibility with regard to project design in the marine environment; however, it needs to be carefully balanced against an increasing complexity of assessment.</p>	<p>Addressed in the Project Description (Chapter 2.2).</p>
	<p>* It would be helpful to have confirmed details on the following technical aspects relating to the installation and operation of the offshore export cable for the MORL Phase 1 windfarm:</p> <p>(23) Type of cable (DC or AC);</p> <p>(24) Method of cable-laying and burial (jetting or ploughing);</p> <p>(25) Footprint of area affected by cable laying;</p> <p>(26) Method of cable protection if required (e.g. rock armouring or concrete mattresses);</p> <p>(27) Footprint of area affected by cable protection;</p> <p>(28) Duration and rate of cable-laying (how long will it take?);</p> <p>(29) Direction of cable-laying (offshore in or inshore out etc.);</p> <p>(30) Number and types of vessels to be used in cable-laying operations;</p>	<p>Noted.</p>
	<p>(31) Routes of vessels to cable works;</p> <p>(32) Estimation of electromagnetic fields (EMF) potentially arising from cables both at exterior of cables and at surface of seabed above buried cables;</p> <p>(33) Estimation of noise emissions from cable-laying works;</p> <p>(34) Anticipated lifespan of cable in this location (using any proposed method(s) of protection);</p>	<p>Noted.</p>
	<p><b>Hydrodynamic Processes &amp; Coastal Geomorphology</b></p> <p>* We strongly recommend that the direct, indirect and cumulative effects of the cable landfalls are considered within the joint study (MORL and BOWL). It is important that any cable route through the 'wave base' (the region where waves actively affect the seabed) is carefully chosen, as well as the cable landfall point itself.</p>	<p>Addressed in Chapters 9.1, 9.2, 13.1 and 13.2.</p>
	<p>* Given the number of proposed cables requiring landfall there is the potential for cumulative impact. We would welcome early dialogue with the applicant in this regard, and recommend their ongoing liaison with Beatrice and discussion with SHETL.</p>	<p>Noted.</p>

Organisation	Summary of Response	MORL Approach
<p><b>Scottish Natural Heritage (SNH)/Joint Nature Conservation Committee (JNCC)</b> <b>(joint response)</b> <b>(continued)</b></p>	<p><b>Benthic Ecology</b></p> <ul style="list-style-type: none"> <li>* We recommend that the applicant checks for Annex 1 habitats and Priority Marine Features1 (PMF) during survey work as well as any Biodiversity Action Plan (BAP) habitats and species.</li> </ul>	<p>MORL confirms that survey sought to identify these habitats / features.</p>
	<p><i>Cumulative Impacts</i></p> <ul style="list-style-type: none"> <li>* Indirect effects on key prey species could result from changes to benthic and pelagic ecology as a result of construction noise, reef effects from foundation structures and reef effects from scour protection. While these effects may be small from any one structure, the in-combination effects from all of the MORL proposed OFTO structures, MORL proposed turbines and all of the proposed BOWL structures (and Aberdeen Bay EOWDC) could be significant. The proposed desk-based studies may be sufficient to assess the potential impacts. Suitable mitigation for some aspects can be achieved using mattress scour protection which would maintain surface level soft substrates as well as minimising the amount of scour protection applied, to only that which is strictly necessary. The use of floating moored structures would also provide a level of mitigation as it would introduce fewer hard structures into habitats dominated by soft substrates.</li> </ul>	<p>Cumulative effects on benthic and pelagic (fish) species have been addressed in Chapters 14.1 and 14.2 respectively.</p>
	<p><b>Fish &amp; Shellfish</b></p> <ul style="list-style-type: none"> <li>* We advise that table 5.1 in the scoping report has included the relevant SAC rivers with diadromous fish interests and welcome the recognition that potential impacts on freshwater pearl mussel will need to be considered in the EIA.</li> </ul>	<p>Addressed in HRA within Chapters 7.2, 10.2 and 14.2.</p>
	<ul style="list-style-type: none"> <li>* Diadromous fish species may be sensitive to increased sediment concentrations, but it is unclear whether they are included as a receptor within habitats and ecosystems.</li> </ul>	
	<p><i>Additional Sources of Information</i></p> <ul style="list-style-type: none"> <li>* Data from the International Herring Larval Survey (IHLS) may provide further indication of areas important for spawning herring. MSS could advise further, including on the adequacy of existing data to inform an impact assessment and on the adequacy of existing data for impact assessment for sandeels, or whether a targeted survey is required.</li> </ul>	<p>Addressed in Chapter 4.3.</p>
	<ul style="list-style-type: none"> <li>* MS-S should advise whether the benthic studies completed/proposed are sufficient to provide supplementary data regarding fish and shellfish, particularly regarding habitats with which herring and sandeels are associated.</li> </ul>	<p>Addressed in Chapters 4.2 and 4.3.</p>
<ul style="list-style-type: none"> <li>* The EIA should draw appropriate links between sections in the assessment, identifying trophic links (e.g. sandeels as prey for seabirds and mammals) that may affect assessment outcomes.</li> </ul>	<p>Addressed in Chapters 10.2, 10.3 and 10.4.</p>	

Organisation	Summary of Response	MORL Approach
<p><b>Scottish Natural Heritage (SNH)/Joint Nature Conservation Committee (JNCC)</b>  (joint response)  (continued)</p>	<p><i>Potential Impacts</i></p> <ul style="list-style-type: none"> <li>* The applicant should also consider the potential for less mobile fish and shellfish species as well as for the eggs of species which spawn in the area to be smothered by the sediment released from cable-laying and/or trench-digging works. Clarification of the footprint of the cable route and the timing / seasonality of operations would help in the assessment of these potential effects.</li> </ul>	<p>Addressed in Chapters 7.2, 10.2, 14.2 and Appendix 4.3 D.</p>
	<ul style="list-style-type: none"> <li>* Evaluating suspended sediment impacts will likely involve comparison with background levels, including storm events. In doing this, seasonality of storm events and any species-specific seasonality of sensitivities should be considered alongside potential construction periods.</li> </ul>	<p>Addressed in Chapters 3.4,3.5,6.1,6.2,9.1 and 9.2.</p>
	<ul style="list-style-type: none"> <li>* We recommend that underwater noise modelling work explicitly includes cable-laying and associated vessel activity as potentially noisy construction activities. This will ensure that these aspects are adequately considered with regard to the EIA and HRA processes.</li> </ul>	<p>Addressed in Chapter 10.2.</p>
	<ul style="list-style-type: none"> <li>* The installation of transmission infrastructure may result in both the loss and creation of habitat. Matters regarding benthic habitats are discussed in above, but the ES should also consider the extent of habitat loss or creation for fish and shellfish.</li> </ul>	
	<ul style="list-style-type: none"> <li>* The response of fish and shellfish to electromagnetic fields (EMF) is poorly understood and as outlined in the scoping report will need consideration under EIA and HRA. It would be helpful if the applicant could estimate the EMF emissions from the chosen cable type (AC or DC) and compare this as follows:  (35) EMF emitted without any mitigation.  (36) Any residual EMF emitted after adoption of mitigation methods.</li> </ul>	<p>Addressed in Chapters 7.2, 10.2, 14.2 and Appendix 4.3 D.</p>
	<ul style="list-style-type: none"> <li>* In particular, we seek to understand whether cable burial limits the strength, or reach, of EMF effects and whether more advanced cable casing might limit such effects. The adoption of precautionary mitigation may be particularly relevant in respect of reducing potential cumulative effects from the range of cables proposed in the Moray Firth. If a Rochdale envelope approach is proposed for the MORL cable works, and the choice of cable type cannot be confirmed prior to a Section 36 application for consent, then the applicant will need to consider EMF transmissions from both cable types, AC and DC, in order for comparisons to be made.</li> </ul>	
	<ul style="list-style-type: none"> <li>* The potential effect of EMF on the qualifying interests of the River Spey SAC needs consideration. Other fish and shellfish may also need consideration with regard to EMF.</li> </ul>	

Organisation	Summary of Response	MORL Approach
<p><b>Scottish Natural Heritage (SNH)/Joint Nature Conservation Committee (JNCC)</b> <b>(joint response)</b> <b>(continued)</b></p>	<p><b>Marine Mammals</b> <i>Detailed Marine Mammal Comments</i></p> <p>* Some of the information in Section 5.2.4.1 with reference grey seals in particular, is inaccurate and out of date. Table 5.2 notes that grey seals in the area are seasonal visitors; we do not agree with this statement as recent telemetry studies and the fact that there are haul-outs throughout the region indicates that grey seals are present all year round.</p>	Noted.
	<p>* We highlight the sharp fall in the UK population of harbour (common) seals and that the applicant will need to consider this in their EIA.</p>	Noted.
	<p><i>Potential Impacts to Marine Mammals</i></p> <p>* Potential impacts on terrestrial sites for seals also need to be considered. The scoping report identifies a number of haul-out sites within the Moray Firth. Further to these sites, and as well as the various SAC's for which seals are a qualifying feature, there are also sites in the wider area recently consulted upon for protection under Section 117 of the Marine (Scotland) Act 2010. Under the Marine (Scotland) Act 2010 it is an offence to harass seals at designated haul-out sites, and we recommend that any development (i.e. cable landfall) or works (i.e. boat transit; noise from installation / operation activities,) that may cause potential disturbance to seal haulouts is considered in the EIA as is the presence of the Moray Firth Seal Conservation Area.</p>	Addressed in Chapter 4.4.
	<p>* The scoping report refers to the JNCC disturbance guidance on EPS6 which while a helpful reference for general good practice regarding mitigation, we highlight that its legal interpretation of disturbance solely applies beyond 12 nautical miles i.e. under the Offshore Marine Conservation (Natural Habitats, &amp;c.) Regulations 2007. As the transmission infrastructure includes cabling within Scottish territorial waters, the applicant should ensure that they are also aware of the definition of disturbance and the legal provisions for EPS that are set out in The Conservation (Natural Habitats, &amp;c.) Regulations 1994.</p>	Noted.
	<p><i>Cumulative Impacts</i></p> <p>* In assessing cumulative impacts, the applicant will need to consider proposals outwith the Moray Firth in relation to the timing and method of construction and potential impacts on wide-ranging species such as Bottlenose dolphins and grey seals in particular.</p>	Addressed in Chapter 14.3.
	<p><b>Ornithology</b></p> <p>* As agreed at our initial meeting with BOWL and MORL over their transmission works, held on 28 February 2011, we consider that ornithological interests can be addressed through desk-based appraisal.</p>	Addressed in Chapter 10.4. Relevant cross references to fish chapters have been made.

Organisation	Summary of Response	MORL Approach
<p><b>Scottish Natural Heritage (SNH)/Joint Nature Conservation Committee (JNCC) (joint response)</b> <b>(continued)</b></p>	<p>* For marine birds at sea, we consider there are likely to be few significant impacts from construction as these are at a small spatial scale for a relatively short period. Potential impacts could occur if there was significant boat-based disturbance from cable laying and associated vessel activity close to (within 500m) breeding seabird colonies, having said that the four potential cable routes do seem to avoid this potential impact. Either way, we're confident suitable timing could provide adequate mitigation if necessary.</p>	<p>Addressed in Chapter 10.4. Relevant cross references to fish chapters have been made.</p>
	<p>* We consider the likely important sources of impact to marine birds at sea are from indirect effects on key prey species such as those discussed in the Benthic Ecology section above and from lighting on hubs and substations. Lighting has the potential to attract large numbers of migrant birds which has been shown to result in large mortality events at onshore wind farms.</p>	
	<p><b>Landscape, Seascape and Visual Impact Assessment</b></p> <p>* As agreed at our initial meeting with MORL and BOWL over their transmission works, held on 28 February 2011, we advise that landscape and visual interests can be scoped out of the EIA for the offshore cable works – as indicated in Section 3.4.1 (p45) of the applicant's report. Advice in relation to the onshore Landscape and Visual follows.</p>	<p>Scoped out of OfTI assessments (Chapter 11.4).</p>
	<p><b>Onshore Cable Works</b> <b>Biological Environment</b></p> <p>* In general we are content with the approach outlined in the scoping report although we highlight the importance of providing adequate detail of the cable laying technique (s), including timing, rate and duration of work so that we may fully assess the potential impacts to sensitive species and habitats during the construction phase.</p>	<p>Addressed in the Project Description (Chapter 2.2) and Chapter 10.1.</p>
	<p>* In addition to the data sources indicated in Section 5.1.1, we recommend that you also contact the following organisations, individuals and databases:</p> <ul style="list-style-type: none"> <li>(37) NBN Gateway</li> <li>(38) North East Scotland Biological Records Centre</li> <li>(39) RSPB Scotland</li> <li>(40) County Bird Recorder</li> <li>(41) The BTO in relation the Wetland Bird Surveys</li> <li>(42) The North Sea Bird Club</li> <li>(43) The local Raptor Study Group</li> <li>(44) Saving Scotland's Red Squirrels</li> <li>(45) District Salmon Fishery Boards</li> <li>(46) Aberdeenshire Council Planning Authority (in relation to Sites of Interests to Natural Science).</li> </ul>	<p>Addressed throughout this ES.</p>

Organisation	Summary of Response	MORL Approach
<b>Scottish Natural Heritage (SNH)/Joint Nature Conservation Committee (JNCC) (joint response)</b>  <b>(continued)</b>	<p><b>Terrestrial Ecology</b></p> <p><i>Terrestrial Species</i></p> <p>We advise that the applicant consults with the relevant District Salmon Fishery Board regarding potential impacts to salmonids and other fish species at river crossings and in particular whether any electro-fishing surveys are required to proceed with the assessment of impacts.</p>	<p>District Salmon Fisheries Boards consulted.</p>
	<p>* In addition, the scoping report outlines that a habitat scoping study will assess the river's potential to support freshwater pearl mussel (FWPM), and this would be followed by intensive survey in specific circumstances. We suggest however, that it may be more efficient to use an experienced FWPM surveyor to carry out the initial survey, as this could remove the need for subsequent surveys.</p>	<p>Survey conducted and results summarised in Chapter 4.7.</p>
	<p>* The EIA should include details of the proposed locations and methods to be used for the crossing of water courses including any relevant mitigation measures.</p>	<p>Addressed and appropriate mitigation suggested.</p>
	<p>* We support the proposal to carry out breeding bird surveys and a desk-based targeted winter bird assessment.</p>	<p>Noted.</p>
	<p><i>Natural and Semi-natural Habitats</i></p> <p>* We advise that any areas of carbon rich soils are identified in the EIA and would refer the applicant to SEPA to provide further advice on this matter.</p>	<p>Soil analysis conducted in Chapter 9.3.</p>
	<p><b>Designated sites</b></p> <p><i>Coastal Geomorphology and Geology</i></p> <p>* While Section 5.1.6 of the scoping report correctly identifies Kirkhill and Loch of Strathbeg SSSIs as having geomorphology and geological interest features, we highlight that Philorth Valley SSSI, designated for its subsurface sediments also appears to lie within the OFTO study area. In particular, we highlight the sand dune and coastal geomorphology features of the Loch of Strathbeg SSSI as this is a key geomorphological site for its extensive and varied dune topography. While Section 5.2.5.1 suggests that the cable lay will go through sand dunes, it is mentioned elsewhere that micro-siting will be undertaken to avoid important habitats. The scoping report does not indicate whether impacts to the dune system can be avoided or what mitigation is proposed – all of which will need to be addressed in the EIA.</p>	<p>Potential effects on sand dune habitat are considered in Chapter 4.7 and appropriate mitigation measures are presented.</p>

Organisation	Summary of Response	MORL Approach
<p><b>Scottish Natural Heritage (SNH)/Joint Nature Conservation Committee (JNCC) (joint response)</b> <b>(continued)</b></p>	<p><i>Ornithology</i></p> <ul style="list-style-type: none"> <li>The scoping report correctly identifies that the protection afforded to SPA species, e.g. Loch of Strathbeg SPA wintering wildfowl assemblage feature, goes beyond the physical SPA boundary. Consideration of the potential impacts to these species is therefore required while they are outwith the SPA, and we suggest that foraging ranges are used to ascertain connectivity to the SPA. Mitigation, such as undertaking construction activities out with key periods, may be appropriate however this must balance the needs of all the bird species that are qualifying features for this site.</li> </ul> <p><i>Habitats</i></p> <ul style="list-style-type: none"> <li>Where there are water dependant features such as at Rora Moss SSSI which is notified for its peatland interest feature, effects upon hydrology and pollution should be considered.</li> </ul>	<p>Addressed in Chapters 4.7 and 10.6.</p> <p>Addressed in Chapters 3.7, 9.3, 13.3 and Technical Appendix 3.7 A.</p>
	<p><b>Human Environment</b></p> <p><i>Landscape and Visual</i></p> <ul style="list-style-type: none"> <li>In the assessment of baseline seascape character and sensitivity it is expected that this work would take due cognisance and sharing of the outputs of the Beatrice Offshore Windfarm and Transmission Works assessment information, to ensure continuity and agreement of information and assessment were practical and appropriate. This would also include choice of viewpoint locations and potentially photographic resources.</li> </ul>	<p>Addressed in Chapters 5.4, 8.4, 11.4 and 15.4. Further information will also be submitted with the Town and Country planning application to Aberdeenshire Council.</p>
	<ul style="list-style-type: none"> <li>The SNH Landscape Character Assessment dataset referred to in the scoping report was produced at a regional scale of assessment so it may be that a further more detailed level of landscape characterisation should be undertaken - in particular to inform any proposed mitigation in terms of location and siting of the substation with appropriate planting and mounding. Of note, mitigation by incorporating high mounds, whilst potentially screening visual impacts, can also constitute a landscape and visual impact in its own right. So the use of mounds and their subsequent location, size and detailed alignment and design should be carefully considered.</li> </ul>	<p>Addressed in Chapters 5.4, 8.4, 11.4 and 15.4. Further information will also be submitted with the Town and Country planning application to Aberdeenshire Council.</p>
	<ul style="list-style-type: none"> <li>Choice of viewpoint locations and photomontages should not be constrained by the number of proposed locations as outlined in the scoping report - for the substation (proposed six viewpoint locations) and for the offshore substations (proposed three viewpoint locations). There should be flexibility in the number of viewpoint locations and subsequent photomontages produced, in relation to predicted patterns of development visibility (ZTVs) and in consultation with Statutory and community organisations.</li> </ul>	<p>OSPs included in 24 viewpoints in Volume 7. Onshore substation viewpoints will be Town and Country planning application to Aberdeenshire Council.</p>
	<ul style="list-style-type: none"> <li>As part of the embedded and additional mitigation proposals as outlined in the scoping report SNH are aware of on-going master-planning work in relation to the Energetica Corridor (the Eastern Aberdeen City and Shire coastal seaboard) and in particular the Peterhead Southern Gateway. SNH would expect due cognisance to be taken of this work as part of consultation with Aberdeenshire Council.</li> </ul>	<p>Addressed in Chapter 11.4.</p>

Organisation	Summary of Response	MORL Approach
<b>British Telecom (BT)</b>	* BT has studied this proposal with respect to EMC and related problems to BT point-to-point microwave radio links. The conclusion is that, the project indicated should not cause interference to BT's current and presently planned radio networks.	Noted.
<b>Civil Aviation Authority (CAA)</b>	* CAA has reviewed the information in the Scoping Report and while CAA expects any civil aviation impact to be minimal the following points should be considered and discussed with aviation stakeholders.	Addressed in Chapters 5.3, 8.3, 11.3 and 15.3. No above ground cables proposed onshore.
	* As highlighted on page 34 there may be a requirement or recommendation to ensure that any offshore substation is appropriately marked and lit, particularly if helicopter operations are envisaged. The guidance in Civil Aviation Publication 437.	Addressed in Chapters 5.8 and 8.7.
	* If the onshore transmission cables are above ground there may be an impact on aviation operations, particularly those at Longside aerodrome near Peterhead which lies on the intersection of the preferred cable routes	Addressed in Chapters 5.3, 8.3, 11.3 and 15.3. No above ground cables proposed onshore.
	* This statement does not negate any previous CAA comment relating to meteorological masts or the wind farm itself.	Addressed in Chapters 5.3, 8.3, 11.3 and 15.3. No above ground cables proposed onshore.
<b>Chamber of Shipping</b>	* The Chamber wish to highlight the following issues of high significance for the commercial shipping industry:	Addressed in Chapters 5.3, 8.3, 11.3 and 15.3. No above ground cables proposed onshore.
	* Although the developers do not consider the Moray Firth to be a particularly busy area for commercial shipping (see Section 5.3.3.1), the Chamber feels that the traffic density illustrated in Figure 5.17 is significant. The developers should ensure that any proposed wind farm development does not create unacceptable safety or commercial risks for shipping in the area. With this in mind, turbines should be located at least 2nm from the main traffic routes (based on 90% of vessel movements).	Addressed in Chapters 5.3, 8.3, 11.3 and 15.2.
	* It should be noted that AIS and radar data traffic surveys may not necessarily pick up bad weather routing options. Local vessel operators, coastguards and ports should therefore be consulted in order to assess the potential impacts of wind farm development on vessels' options in adverse weather conditions.	Addressed in Chapters 5.3, 8.3, 11.3 and 15.2. Also see the Navigational Risk Assessment – Technical Appendices 5.2 D and 5.2 E.

Organisation	Summary of Response	MORL Approach
<p><b>Chamber of Shipping (continued)</b></p>	<p>* Figure 5.17 indicates that a number of vessels transited the project area or passed within 2nm of it during the traffic survey period. The navigational risk assessment should provide clear details of the number and types of vessels transiting the zone and propose acceptable alternative routing options for them. These proposals should assess the extra voyage distances and times that vessels would incur as a result of any wind farm development.</p>	<p>Addressed in Chapters 5.3, 8.3, 11.3 and 15.2.</p> <p>Also see the Navigational Risk Assessment – Technical Appendices 5.2 D and 5.2 E.</p>
	<p>* The cumulative impacts of the Moray Firth and Beatrice wind farms are a key factor for consideration and the Chamber welcomes the effort demonstrated by MORL and Beatrice Offshore Wind Farm Ltd (BOWL) to work together on this issue. While this joint work will be important, cumulative impacts should also be given due consideration in the individual risk assessments for each project. With this in mind, COS would prefer to see the project boundaries for Beatrice included in traffic density maps such as Figure 5.17. This will provide a holistic view of the region and allow us to make a more accurate assessment of the overall impacts on navigation.</p>	<p>Addressed in Chapter 15.2.</p>
	<p>* From a cumulative impact perspective, the impacts on traffic passing to the north west of the site are a particular area of concern. Although the Moray Firth site appears to be at least 2nm from the highest traffic density, the Beatrice wind farm will encroach further on this route, significantly reducing space available between turbines and the coast.</p>	<p>Addressed in Chapter 15.2.</p> <p>Floating Turbines no longer considered. Information on anchoring in Chapters 5.2, 8.2 and 11.2.</p>
	<p>* The Chamber is pleased to note that the anchoring of large vessels in the general area around the proposed cable route has been recognised by the developers. The navigational risk assessment should clearly identify those areas where anchoring takes place and the cable route should be planned in such a way that it avoids important anchoring locations, which may not necessarily be marked on charts. Alternatively, cables should be buried to depths where impairment is less likely, as suggested in Section 5.3.3.7. The Chamber has some concerns over the floating turbine solutions proposed in Section 2.3.2. Floating turbines are yet to be demonstrated in UK waters and we believe that developers should avoid proposing such solutions until they have been successfully trialled at a test project scale. Some of the mooring system options available have the potential to significantly increase the footprint of individual turbines and we would also require detailed information on the degree to which turbines may swing on their moorings. In addition, the risk of the main turbine structure breaking free of its moorings must be assessed thoroughly before floating solutions become a viable option for developers. Such a situation would present significant safety risks to mariners and therefore must be discussed in detail with the MCA, which does not currently specifically cover floating turbines in MGN 371. Suitable lighting, marking and charting measures for floating turbines would also need to be agreed with the Northern Lighthouse Board and UKHO.</p>	<p>Addressed in Chapter 15.2.</p> <p>Floating Turbines no longer considered. Information on anchoring in Chapters 5.2, 8.2 and 11.2.</p>

Organisation	Summary of Response	MORL Approach
<b>Chamber of Shipping (continued)</b>	<p><b>Marine Assets - Potential Impacts</b></p> <p>* In relation to the submitted study areas, HS can confirm that there are no designations within our statutory remit located within these identified areas. HS can also confirm that there are no such designations within the immediate vicinity of these study areas.</p>	<p>Noted.</p>
	<p>* HS note that the Scoping Report identifies that there are numerous charted wrecks along the offshore export cable route study area. In addition, HS note that there are five 'dangerous wrecks' within the shallow waters near Fraserburgh and Rattray, of which three are within the offshore export cable route study area and one of these is a protected wreck ('Victory').</p>	<p>Export cable will make landfall at Fraserburgh. All assets / potential assets within the offshore export cable route are identified in Chapter 5.5.</p>
<b>Historic Scotland</b>	<p>* HS recommend that the potential impact on these be assessed with appropriate involvement of archaeological expertise as these could be subject to potential direct impacts, depending on the specific location of works and the sub-sea cabling route.</p>	<p>Export cable will make landfall at Fraserburgh. All assets / potential assets within the offshore export cable route are identified in Chapter 5.5.</p>
	<p>* As part of the proposed assessment, HS note that archaeological analysis of geophysical surveys will be undertaken, which is consistent with guidelines set down in 'Historic Environment Guidance for the Offshore Renewable Energy Sector' (Cowrie 2007). Beyond this, HS note the scoping document's reference to the low potential for submerged prehistoric remains within the study area. HS welcome that archaeological analysis shall be undertaken in relation to the geophysical survey data which HS understand is to be gathered for the study area.</p>	<p>Archaeological analysis of geophysical and geotechnical survey data has been undertaken – see Chapter 5.5.</p>
	<p>* HS are content that the potential for cumulative and in-combination impacts on marine archaeology has been scoped out.</p>	<p>Noted.</p>

Organisation	Summary of Response	MORL Approach
<b>Historic Scotland (continued)</b>	<b>Terrestrial Assets - Potential Direct / Indirect Impacts</b> * The following assets would appear to be either within the study area or within the immediate vicinity of it:	Noted.
	<i>Scheduled Monuments</i> <ul style="list-style-type: none"> <li>○ Fraserburgh Cemetery, pill box 280m ENE of Kirkton Cottages (Index no. 8220)</li> <li>○ Knockmonean Cairn (Index no. 11138)</li> <li>○ Trefor Hill, motte (Index no. 11141)</li> <li>○ St Ethernan's, Rathen old parish church (Index no. 5810)</li> <li>○ Rattray Line, pill boxes (Index nos. 11307, 11308, 11309, 11310, 11311, 11312, 11313)</li> <li>○ Ravenscraig Castle (Index no. 2496)</li> <li>○ Mount Pleasant, enclosure (Index no. 3999)</li> <li>○ Boddam Castle (Index no. 3252).</li> </ul>	All assets within the onshore transmission study area have been identified in this ES, see Chapter 5.5 and supporting appendices.
	<i>Category A Listed Buildings</i> <ul style="list-style-type: none"> <li>○ Cairness House (HB no. 9263)</li> <li>○ Crimonmogate House (HB no. 9270)</li> </ul>	All assets within the onshore transmission study area have been identified in this ES, see Chapter 5.5 and supporting appendices.
	<i>Gardens and Designed Landscapes</i> <ul style="list-style-type: none"> <li>○ Cairness (newly designated)</li> <li>○ Crimonmogate (newly designated)</li> </ul>	All assets within the onshore transmission study area have been identified in this ES, see Chapter 5.5 and supporting appendices.
	<b>Historic Scotland Views on the Principle of this Proposal</b> * On the basis of the information supplied, HS are content with the principle of the proposal; however, there are certain aspects of the proposal which will need to be assessed. This relates to the potential for direct and indirect impacts on both the marine and terrestrial historic environment. HS would expect the assessment to contain a full appreciation of the historic environment assets potentially affected and the likely impacts on their site and setting. HS shall of course provide further comments upon receipt of the full Environmental Statement.	The EIA has assessed all direct, indirect and secondary effects. Assessment findings are presented in Chapters 8.5 and 11.5.

Organisation	Summary of Response	MORL Approach
<b>Historic Scotland (continued)</b>	<p>* In terms of assessing marine archaeology, in HS view the proposed methodology for baseline surveys and assessment of impacts is considered acceptable. The proposed sources and archives are also appropriate.</p>	<p>Noted.</p>
	<p>* In terms of assessing the impact of the onshore elements of the proposal on terrestrial assets, HS acknowledge that the Scoping Report commits to assessing the impact on the site and setting of historic environment assets and we are content with the proposed methodology.</p>	<p>Noted.</p>
<b>Inshore Fisheries Group (IFG)</b>	<p>* Reference to the "zones" presumably encompasses the eastern and western development zones of the MORL site? It is unclear as to whether the intended infrastructure and especially the HVDC infrastructure will in addition also be used for the western zone or if additional infrastructure will be required in the future? This consideration of cumulative environmental impact of MORL site development is further noted in the cumulative impact assessment chapters.</p>	<p>Addressed In all Cumulative Impact Assessments and detailed in the Project Description (Chapter 2.2).</p>
	<p>* It is considered that the range of potentially sensitive receptors should be widened to sensitive life history stages of some fish and shellfish which have a direct linkage to the benthic environment. The "spat" settlement stage of the King Scallop is dependent typically on hydroid and bryozoan communities at a first stage of development before settling on a suitable sandy substrate. Any smothering of such communities at this stage has the potential to impact juvenile survival. Mitigation to prevent such an occurrence could involve appropriate timing of seabed disturbance to avoid the spat settlement period. Equally the depositing of squid eggs is likely to be dependent on suitable biogenic material being present and smothering by suspended sediment loads may be a significant factor in egg or juvenile survival at depth.</p>	<p>SHETL has been included in the Assessment of Alternatives (Chapter 2.1). However, since the Hub is not consented and un-built and given the high level of uncertainty regarding connection due to the regulatory regime, MORL is unable to treat the Hub as an option at the present time. The Hub option has therefore not been considered further in this ES other than as a development included, where relevant, in the Cumulative Effect Chapters.</p>
	<p>* Additional commercially important species not covered by the above receptors would include the whelk (<i>Buccinum</i> spp.) which is a detritivore. Such links to the human food chain of commercially important species should also be considered.</p>	
	<p><i>Additional impacts from heat transfer from cabling are understood to cause little or no effect on benthic communities.</i></p>	
<p>* The above sentence is surprising and seems difficult to substantiate without additional information being provided. It is considered that thermal load of cabling can have a significant impact on the predator/prey balance within seabed communities and that this should be recognised in any cumulative impact assessment. The issue of thermal load has been clearly made by SNH in the BOWL Transmission Works Scoping Opinion and without mitigation it is difficult to perceive how MORL could avoid any such environmental impact arising from its own developments or in combination with others.</p>		

Organisation	Summary of Response	MORL Approach
<b>Inshore Fisheries Group (IFG)</b> <b>(continued)</b>	<p>* The mobile shellfish species should also be recognised in any baseline assessment of the environment. Squid eggs are deposited in the shallower regions within the area with juveniles progressively migrating towards the mouth of the Firth. In addition both brown crab and lobster are known to undertake spawning migrations of egg carrying females with subsequent release of larval stages into the water column. This process has not been adequately recorded in the Moray Firth however; various studies on the north east coast of England have indicated the importance of such processes to the recruitment of stock to established fishery areas. It is extremely important that any such migration and spawning processes are fully understood within the Moray Firth as the squid, lobster and brown crab fisheries are of considerable economic importance.</p>	<p>Addressed as far as possible in Chapters 4.3, 7.2, 10.2 and 14.2.</p>
	<p>* The proposed export cable route for the MORL development with cumulative impacts from BOWL and possible links to the Caithness coast, in combination with other power cable developments in the area would effectively enclose the outer Moray Firth. It is extremely important at this stage to determine the importance of spawning migrations and aggregations of mobile shellfish species in order to assess any potential environmental impact of the export cable laying and operational process. There is some evidence that crustacean species can be impacted by EMF from buried cables and any possible impact of this on spawning migrations would need to be established.</p>	<p>Addressed as far as possible in Chapters 4.3, 7.2, 10.2 and 14.2.</p>
	<p>* From a national perspective the option with the minimum environmental impact would appear to be the SHETL HVDC Hub. In the context of the marine environment this would appear to avoid duplication of infrastructure associated with separate OFTO arrangements for the eastern and western zones of the MORL site coupled with additional arrangements for the BOWL site. From a commercial fisheries perspective any minimisation of unnecessary infrastructure would be welcomed as each is likely to contribute to combined impacts with respect to access to fishing grounds. In addition the SHETL option also appears to minimise the number of export cables coming ashore at various locations along the coast and resultant disturbance of fishing activities, fish stocks and the wider marine environment.</p>	<p>SHETL has been included in the Assessment of Alternatives (Chapter 2.1). However, since the Hub is not consented and un-built and given the high level of uncertainty regarding connection due to the regulatory regime, MORL is unable to treat the Hub as an option at the present time. The Hub option has therefore not been considered further in this ES other than as a development included, where relevant, in the Cumulative Effect Chapters.</p>
	<p>* It is considered that thermal pollution of the seabed surrounding the export cables should be added to the list of possible impacts. The potential for an imbalance of predator prey communities with the additional energy input associated with the thermal load of the cable should be assessed. This is particularly important with respect to all life stages of high value shellfish species such as the King Scallop and the impact of predators such as starfish which have a relatively short reproductive cycle at elevated temperatures.</p>	
	<p>* In addition to the recognition of potential impacts of the effects of electromagnetic fields associated with cabling on a site specific or cumulative and in combination basis for fish and shellfish species, thermal load should also be scoped in. In terms of a primary effect the impact of thermal load on vulnerable life stages such as herring, sandeel and squid eggs with direct contact to the substrate should be assessed. In addition any secondary impact associated with increased predator species reproduction and predation on the egg or juvenile stages such as starfish predation on scallop spat should also be considered.</p>	<p>Addressed in Chapters 7.2, 10.2 and 14.2.</p>

Organisation	Summary of Response	MORL Approach
<b>Inshore Fisheries Group (IFG)</b> <b>(continued)</b>	<p>* There is a need to ensure that for fisheries with naturally highly variable landings such as the scallop and squid fisheries within the Moray Firth that any data analysis and the use of long term data averages does not mask the importance of such fisheries to the fishing community. Equally in the context of the hand line mackerel fishery the unit value of landings to niche markets far exceeds the national average landings unit value figures.</p>	<p>Addressed in Chapter 5.1.</p>
	<p>* In addition to historic landing patterns and values it is also important to recognise the value of near shore fishing grounds and species in relation to national management measures of days at sea and quota restrictions placed on various fish stocks. The squid fishery has no such restrictions and is extremely economically important. In the context of days at sea the near shore area is becoming increasingly important not just in terms of fishing opportunities in relatively sheltered waters, but also in terms of shorter trip durations, fuel economy, and use of fewer days at sea. Such considerations need to be factored into the overall impact on the fishing industry of renewables infrastructure development.</p>	<p>Addressed in Chapter 5.1.</p>
<b>Joint Radio Company</b>	<p>* In the case of this proposed wind energy development, JRC does not foresee any potential problems based on known interference scenarios and the data you have provided. However, if any details of the wind farm change, particularly the disposition or scale of any turbine(s), it will be necessary to re-evaluate the proposal.</p>	<p>Noted.</p>
<b>Maritime Coastguard Agency (MCA)</b>	<p>* There is limited data on shipping activity contained within the document which is understandable in relation to transmission works and cable routes, however the ES should supply detail on the possible impact on navigational issues for both Commercial and Recreational craft, viz.</p> <ul style="list-style-type: none"> <li>o Collision Risk</li> <li>o Navigational Safety</li> <li>o Visual intrusion and noise</li> <li>o Risk Management and Emergency response</li> <li>o Marking and lighting of site and information to mariners</li> <li>o Effect on small craft navigational and communication equipment</li> <li>o The risk to drifting recreational craft in adverse weather or tidal conditions</li> <li>o The likely squeeze of small craft into the routes of larger commercial vessels.</li> </ul>	<p>Addressed in Chapter 5.1.  Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.</p>
	<p>* The shipping and navigation study should include radar and manual observations in addition to AIS data to ensure vessels of less than 300gt are captured. Given the potential to displace current traffic routes, full consideration of the implications to all identified marine users will need to be assessed.</p>	<p>Addressed in Chapters 5, 8 and 8.7.</p>

Organisation	Summary of Response	MORL Approach
<b>Maritime Coastguard Agency (MCA)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* Casualty information from the MAIB and RNLI would also be good data sources, in establishing the risk profile for the area.</li> </ul>	Addressed in chapters 5.2, 8.2, 11.2 and 15.2.
	<ul style="list-style-type: none"> <li>* Particular attention should be paid to cabling routes and where appropriate burial depth for which a Burial Protection Index study should be completed and, subject to the traffic volumes, an anchor penetration study may be necessary. The developer must ensure that 'the works' do not encroach on any recognised anchorage, either charted or noted in nautical publications, within the proposed consent area.</li> </ul>	Noted.
	<ul style="list-style-type: none"> <li>* The cumulative and in combination effects require serious consideration, particularly the adjacent Scottish Territorial Waters wind farm projects, the positive interaction with MFOWDG is noted.</li> </ul>	Noted.
	<ul style="list-style-type: none"> <li>* The offshore human environment should also include recreational and other sport activities. Any application for operational safety zones will need to be carefully assessed.</li> </ul>	Noted.
<b>Ministry of Defence (MoD)</b>	<ul style="list-style-type: none"> <li>* The MOD has no objections to the proposed routes and therefore we have no comments to make on the scoping opinion.</li> </ul>	Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.
<b>Moray Firth Sea Trout Project</b>	<p><b>General Comments</b></p> <ul style="list-style-type: none"> <li>* MFSTP specific concern with the MORL outlined Transmission Works is the potential impact on sea trout in the Moray Firth. The Moray Firth is a common resource for sea trout from all the rivers that surround it. Sea trout migrate to sea primarily to feed and we are very conscious of ensuring that they are not directly threatened or that the resources they rely on are disrupted. Although not protected by SAC designations sea trout are recognised under the UK Salmon and Freshwater Fisheries Act (1975) and are a UK BAP Priority Species and support important local fisheries and tourism.</li> </ul>	Addressed as far as possible in Chapter 10.2.

Organisation	Summary of Response	MORL Approach
<b>Moray Firth Sea Trout Project</b>  <b>(continued)</b>	<p><b>Electromagnetic Fields</b></p> <p>* Aside from the physical disturbance of the benthos our primary concern is with the potential impact of electromagnetic fields on migrating and feeding sea trout. Very little is known about the precise movements of sea trout within the Moray Firth but the various cabling routes outlined will all likely cross potential migration routes and feeding areas. If the trout have an avoidance reaction to the electromagnetic fields then the transmission works could severely impact the movement and marine feeding of Moray Firth sea trout. This would have a hugely detrimental impact on the species and local populations. MFSTP seek assurances that appropriate mitigation will be required to limit the exposure of migrating fish to Electromagnetic Fields. By ensuring the cable is buried to an adequate depth and through insulation of the cabling the potential impact on sea trout and other migratory fish can be reduced to an acceptable level.</p>	<p>Addressed in Chapters 7.2 and 10.2.</p>
	<p>* Having considered the EIA Scoping report for the transmission infrastructure, NERL does not anticipate an impact on its infrastructure.</p>	<p>Addressed in Chapter 11.3.</p>
	<p>* Although Civil Aviation is mentioned in the Non-Technical Summary of the EIA Scoping report, there is no mention in the transmission Infrastructure report.</p>	<p>Addressed in Chapter 11.3.</p>
<b>NERL</b>	<p>* Looking at the proposals for the transmission lines/network from landfall to the Peterhead power station, the path is in close proximity to a number of assets that NERL safeguards.</p>	<p>Addressed in Chapter 11.3.</p>
	<p>* However, for the avoidance of doubt, NERL believe that it would be worth having a Section on Civil Aviation highlighting that these sites will be considered.</p>	<p>Addressed in Chapter 11.3.</p>
<b>Northern Lighthouse Board (NLB)</b>	<p>* NLB would require that Notice(s) to Mariners, Radio Navigation Warning and publication in appropriate bulletins will be required stating the nature and timescale of any works carried out in the marine environment relating to this project.</p>	<p>Addressed in Chapter 11.3.</p>
<b>Ports and Harbours</b>	<p>* PH has no comments on this case.</p>	<p>Noted.</p>

Organisation	Summary of Response	MORL Approach
<p><b>Royal Society for the Protection of Birds (RSPB)</b></p>	<p>* It should be made clear why there may be “potential for a further 2 HVDC offshore platform structures to be located outwith the development zone.” In particular, the ES should indicate in what circumstances these may be necessary or desirable.</p>	<p>Addressed in Project Description, Chapter 2.2.</p>
	<p>* The ES should offer a rationale behind the eventual selection of a particular combination of offshore and onshore routes, making clear the economic, environmental, safety or other considerations. This would include consideration of linking, or not linking, to the proposed Moray HVDC Hub.</p>	<p>The Moray HVDC hub has been considered in Chapter 2.1 (Assessment of Alternatives). Noted.</p>
	<p>* The preferred landfall has been identified as that at Fraserburgh, with Rattray, which involves a shorter land crossing, as second choice. It should be noted that the landfall zone south of Rattray Head crosses some intertidal land that RSPB leases from the Crown Estates as part of our Loch of Strathbeg reserve.</p>	<p>The potential Rattray route has been discounted.</p>
	<p>* The Environmental Management Plan should have a component document specifically addressing Wildlife Management. It is unclear whether “collision risk” applies to wildlife colliding with turbines, vessels or other structures or to vessel collisions with each other or with structures.</p>	<p>See Technical Appendix 1.3 A</p>
	<p>* Mention should also be made of proposed East Coast (offshore) transmission route from the Fraserburgh area to NE England.</p>	<p>Noted.</p>
	<p>* Refers to the Loch of Strathbeg’s position downstream of the cable route: impacts on water quality must be assessed, although RSPB expect that these will not be significant after mitigation.</p>	<p>Addressed in Chapter 9.3.</p>
	<p>* Cable-laying on land may cause disturbance and temporary loss of feeding areas to birds associated with the following SPAs: Buchan Ness to Collieston Coast SPA (herring gull only), Loch of Strathbeg SPA (pink-footed goose, greylag goose, barnacle goose, and whooper swan), Troup, Pennan and Lion’s Head SPA (herring gull). Habitats Regulation assessments will be required.</p>	<p>Addressed in Chapters 4.7 and 10.6.</p>

Organisation	Summary of Response	MORL Approach
<b>Royal Society for the Protection of Birds (RSPB)</b> (continued)	<ul style="list-style-type: none"> <li>* The proposed Breeding Bird Survey methodology involves surveyors recording birds within 250m on either side of a transect on three visits. This will undoubtedly lead to many birds being missed – especially small and non-vocal species - and, at best, will provide only an indicative picture of bird distribution across the surveyed area. This may be sufficient information for inputting into decision-making on route choice where non-designated sites are concerned. Impacts on breeding birds can mostly be avoided by avoiding the period April-July for cable-laying but more detailed bird survey of particular sections may be required once route selection has been made to influence micro-siting.</li> </ul>	<p>Addressed in Chapter 10.6</p> <p>Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.</p>
<b>Royal Yachting Association (RYA)</b>	<ul style="list-style-type: none"> <li>* The view of RYA Scotland is that these proposals will have little, if any, negative impact on recreational boating. RYA note that offshore platforms are no different from other fixed structures at sea in terms of marking, lighting and representation on charts. Cable laying operations are normal activities covered by the International Regulations for Preventing Collisions at Sea, to which recreational sailors must conform. RYA know that modern installation techniques such as trenching and directional drilling can return the landfall site to its original condition so that beaches and adjacent shallow waters can still be used for landing and for temporary anchoring of small recreational craft. Section 2.7 notes that ports and harbours used for operation and maintenance are likely to be smaller than the ports used during the construction phase and this increased usage could have benefits for the recreational sector, e.g. by the increased income from harbour dues being invested in repairs and maintenance of these harbours to the benefit of all users.</li> </ul>	<p>Addressed in Chapter 10.6.</p>
<b>Scottish Government - Planning</b>	<ul style="list-style-type: none"> <li>* SGP have reviewed the Scoping Report and in terms of national planning policy are content that reference has been made to the National Planning Framework and Scottish Planning Policy (SPP). In considering the onshore infrastructure requirements, the Environmental Statement should also make reference to the Proposed Aberdeenshire Local Development Plan.</li> </ul>	<p>Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.</p>
<b>Scottish Wildlife Trust</b>	<ul style="list-style-type: none"> <li>* In general SWT would expect the EIA to consider the potential impact of the proposed development on protected sites and species on land and at sea. The EIA should make use of the most up to date sources of information and where necessary conduct specific surveys where data is lacking.</li> <li>* In particular, SWT would like to highlight the presence of the Scottish Wildlife Trust Reserve at Longhaven Cliffs. The reserve occupies a 1.5 mile stretch of the Buchan coastline south of Peterhead.</li> </ul>	<p>Noted.</p>
<b>Surfers Against Sewage</b>	<ul style="list-style-type: none"> <li>* The developers should consult the literature, the Scottish Surfing Federation and the local surfing community for baseline information on the location and quality of surf spots in the area. They should then study the possible consequences of installing the landfall points close to surfing areas, for example, interference with the local hydrodynamics, changes in the local bathymetry and changes in the sediment transport, all of which could have serious negative effects on the surfing waves. All this should be done before the most suitable landfall point(s) are decided upon. It might turn out that moving the landfall point a suitable distance away from a surf spot will not alter any of the other considerations, such as cabling distance from the substations or access for the developers.</li> </ul>	<p>Addressed in Chapter 4.1 and 4.7.</p> <p>Addressed in Chapters 6.1, 6.2, 9.1, 9.2, 13.1 and 13.2.</p>

Organisation	Summary of Response	MORL Approach
<b>Surfers Against Sewage (continued)</b>	* SAS consider the situation unsatisfactory unless the developers consult the Scottish Surfing Federation, the Broch Surf Club and the local surfing community before deciding on the exact position of the landfall point.	Addressed in Chapter 4.1.
	* SAS recommends that the developers consider these potential problems before deciding on the final landfall points. It is unsatisfactory if a surf spot is rendered unusable for a period of two years if the situation could have been avoided by moving the landfall point.	Addressed in Chapters 6.1, 6.2, 9.1, 9.2, 13.1 and 13.2.
	* SAS believe that the scoping report is insufficient to inform the EIA process in accordance with the requirements of, for example, Regulation 7 (2) (b) of the Electricity Works (Environmental Impact Assessment, Scotland) Regulations 2000 (as amended), which states that a request for a scoping opinion shall be accompanied by "a brief description of the nature and purpose of the proposed development and of its possible effects on the environment".	Addressed in Chapters 6.1, 6.2, 9.1, 9.2, 13.1 and 13.2.
	* It may be necessary to include proposed wave and tidal devices in the Moray Firth into the in-combination assessments.	Addressed in Chapters 6.1, 6.2, 9.1, 9.2, 13.1 and 13.2.
<b>Whale and Dolphin Conservation Society</b>	* WDCS agree that disturbance and injury as a result of noise should be included as potential impacts. WDCS note that where modelling is proposed, ground-truthing should be considered.	Addressed in Chapter 10.3.
<b>Health and Safety Executive (HSE) (05/10/2011)</b>	* HSE's principle concerns are the health and safety of people affected by work activities. HSE cannot usefully comment on what information should be included in the environmental statement of the proposed development. However, the environmental statement should not include measures which would conflict with the requirements of the Health and Safety at Work etc etc. Act 1972 and its relevant statutory provisions.	Addressed in Chapter 10.3.
	* With regard to the consultation and the scope of the assessment, we would only comment on any part relating to Shipping and Navigational safety contained within Section 5.3.3 of the supporting documentation. We would require that Notice to Mariners, Radio Navigation Warning and publication in appropriate bulletins will be required stating the nature and timescales of any works carried out in the marine environment relating to the project.	Addressed in Chapter 10.3 and 14.3.
<b>Northern Lighthouse Board (28/09/2011)</b>	* NLB have noted information and data collected by means of AIS tracking but would request that in addition to this, radar and visual data collection should be carried out to ensure greater validation of information relating to smaller fishing and leisure craft transiting and operating within the area of consideration. As detailed in Section 5, a navigational risk assessment is required, making best use of all vessel data sources.	Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.

Organisation	Summary of Response	MORL Approach
<b>Northern Lighthouse Board</b> <b>(28/09/2011)</b>  <b>(continued)</b>	<ul style="list-style-type: none"> <li>* With regards to various types of support structures suggested for the offshore substation, any recommendations for marking and lighting be best delayed until we have received a final decision and selection on the preferred design option.</li> </ul>	Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.
	<ul style="list-style-type: none"> <li>* It may be necessary to mark the landfall sites of the export cable routes depending on the chosen location. Would require lit cable marker boards positioned as near as possible to the shoreline to mark where the cable comes ashore. These boards should be diamond shaped, dimensions 2.5 m long and 1.5 m wide, background painted yellow with inscription 'cables' painted horizontally in black. Mounted at least 4 m above ground level with a navigational light flashing yellow once every 5 seconds. Nominal range of these lights should be 3 nm. All navigational marking and lighting and its associated marine infrastructure will require the Statutory Sanction of the Northern Lighthouse Board prior to development.</li> </ul>	Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.
	<ul style="list-style-type: none"> <li>* We will require that cable routes, offshore substations and cable landing points be communicated to the UK Hydrographic Office in order that all relevant charts and publications can be directly updated.</li> </ul>	Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.

### Annex 3 to Chapter 1.3

**Table 1.3-9 Summary of Draft ES Feedback and Approach Taken to Issues Raised**

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland Science</b>	<p><b>Marine Physical and Environment - Offshore Generating Station</b></p> <p>* We have some concerns over the statement at the end of page 194, "Given no significant effect on the driving parameters, there can be no corresponding difference in the potential rates and directions of sediment transport through the site". The effect on the driving parameters is expected to be, according to this ES, up to 19% decrease in the significant wave height. The ES argues that this decrease is within the range of natural variability, and that therefore there is no significant effect on the driving parameters. This could well be the case, it would be useful to review the relevant technical appendix to find out more, but it could also mean that some of the largest naturally occurring waves, for example 1 in 1 year storm waves, are reduced significantly. The ES mentions in section 7.5.4.1 (p. 71) that such storm waves are responsible for much of the wave driven transport of the coarser sediment. This may lead to a degree of sediment retention, i.e. net accretion, in the area. This is acknowledged to an extent at the beginning of page 195, but we would recommend that the statement above be altered slightly to acknowledge this possible effect of the reduction in significant wave heights. We would also recommend the removal, or alteration, of the statement "However, as stated above, the absolute difference in sediment transport attributable to the wind farm is less than the potential for natural variability over the same period" near the beginning of page 195. We would question the validity of the developer's conclusion that there will be "no effect on the form and function of Smith Bank" (p. 195). It is acknowledged that the 19 % change is a worst case scenario given particular wave forcing conditions, and that the possible effect is therefore very slight. It should still be acknowledged in the ES though. We would suggest that there is a potential danger here, when assuming that just because something is 'within natural variability' it is okay. In particular, this is a dangerous assumption when it is the extremes of the natural variability that are potentially the most important/significant, as is the case in this example. Figure 1 illustrates the above issue.</p>	<p>Addressed in Chapters 3.1-3.5, 6.1 and 6.2.</p>
	<p><b>Offshore Transmission Infrastructure</b></p> <p>* The cable landfall may change the rates of longshore sediment transport and should therefore be considered of minor significance.</p>	<p>Addressed in Chapters 9.1 and 9.2.</p>
	<p><b>Fish and Shellfish Ecology/Commercial Fish – Baseline</b></p> <p>* When describing commercial species/fisheries it would be worthwhile including figures with average value landed in £ as this will give a better indication of the commercial importance of the species to the fishing industry.</p>	<p>Addressed in Chapter 7.2 and 8.1.</p>
	<p>* Other than the mention of freshwater pearl mussels, there is very little information of any other shellfish of conservation importance. <i>Arctica islandica</i> are listed on the OSPAR list as an important species and are known to be present in the Moray Firth area.</p>	

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland Science</b>  <b>(continued)</b>	<p><b>Offshore Generating Station</b></p> <ul style="list-style-type: none"> <li>* When describing 'Loss of habitat' in table 11.2.2.2, will the affected area not be 125m diameter (dredger affected diameter table 4.1) instead of the 65m diameter as quoted, Its noted that the 65m would be net loss but this is assuming that the 125m area that is initially disturbed by ground preparation/dredging is suitable for re-colonisation by similar organisms post disturbance, and that this re-colonisation actually takes place.</li> </ul>	<p>Addressed in Chapter 7.2.</p>
	<ul style="list-style-type: none"> <li>* Has there been any consideration for maintenance noise?</li> </ul>	
	<ul style="list-style-type: none"> <li>* When considering 'Changes to fishing activity' the inter array cabling and cable route should also be considered as this may affect types of fishing that can occur and may exclude fishing on parts of the ground depending on whether/what cable protection systems are used rather than deep burial of the cables.</li> </ul>	<p>Addressed in Chapter 10.2 and 14.2.</p>
	<p><i>Disturbance during construction</i></p> <ul style="list-style-type: none"> <li>* How long will construction take? We agree that a short, low level of sedimentation will only have a minor negative effect but if the construction and associated sedimentation will be taking place over a prolonged period of time then this may in fact pose a more significant impact. Especially when looking at early life stages of fish and also on sandeels in general.</li> </ul>	<p>Addressed in Chapter 7.2.</p>
	<ul style="list-style-type: none"> <li>* Is 264 days of activity over 4 years really short term?</li> </ul>	
	<ul style="list-style-type: none"> <li>* More information, specifically around timing and length of construction, would be useful to help clarify the significance of potential herring, sandeel and cod impacts.</li> </ul>	
	<ul style="list-style-type: none"> <li>* The important question with regards to habitat disturbance/loss for sandeels and herring is what proportion of suitable habitat in the area will be disturbed/lost? Not what proportion of the whole wind farm site will be disturbed, as indicated by the 2.03% figure given on page 214.</li> </ul>	
	<p><i>Noise</i></p> <ul style="list-style-type: none"> <li>* We agree with the developer's assumption that salmon and sea trout will transit and forage within and around the proposed site. As a result we would recommend that the developer take a precautionary approach to the assessment of the potential of impact and change this to minor-moderate significance and probably.</li> </ul>	
<ul style="list-style-type: none"> <li>* Has the developer considered that due the possibility that the herrings drive for reproduction overrides its avoidance to noise that this may result in fish entering areas of noise which may be harmful and would have otherwise been avoided?</li> </ul>		

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland Science</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* Unless the developer can prove that cod are not present in/around the site we would again recommend the developer re-assess the potential for impact of noise on cod to probable. Especially as the impact has been considered of moderate-major significance. This could apply to both construction and operational noise.</li> </ul>	Addressed in Chapter 7.2.
	<p><i>Loss of habitat</i></p> <ul style="list-style-type: none"> <li>* As mentioned above the loss of habitat should look at the percentage loss of suitable sand/gravel habitat and not just the loss against the whole wind farm site. We would recommend that this is assessed before the potential impact can be considered as of minor significance and unlikely.</li> </ul>	
	<ul style="list-style-type: none"> <li>* There is a limited ability for sandeels to cope with loss of habitat or any other form of direct impact as they tend not to move from settled locations. Until locations of actual turbines can be given its difficult to see how the impact on sandeels can be assessed accurately. We would recommend that this impact be considered as minor-moderate significance and probable pending the results from the sandeel survey.</li> </ul>	
	<p><b>Offshore Transmission Infrastructure</b></p> <p><i>Disturbance</i></p> <ul style="list-style-type: none"> <li>* As discussed in the wind farm section above, we would recommend the total area of disturbance and not just the net disturbance be assessed for impact.</li> </ul>	Addressed in Chapter 10.2.
	<p><b>Cumulative Impact Assessment</b></p> <p><i>Noise</i></p> <ul style="list-style-type: none"> <li>* It is misleading to class the overall cumulative impact of noise as minor when salmon and sea trout may be minor-moderate, herring is moderate and cod moderate to major.</li> </ul>	Addressed in Chapter 14.2.
	<p><i>Changes to fishing activity</i></p> <ul style="list-style-type: none"> <li>* Displacement and changes to fishing activity should not be classed as not significant if it has been stated that the potential for impact is dependent on the level of activity that is resumed.</li> </ul>	
	<ul style="list-style-type: none"> <li>* This implies an impact could occur and if fishing is displaced as a result this could mean a moderate to major impact both on the fishers who will have increased competition but also on the fishing grounds themselves as there may be increased fishing pressure on a smaller fishing area resulting on increased pressure on the fishery/stock. For example, in terms of the scallop fishery, if the areas where the vessels are displaced to are a source for spawning then this could result in a detrimental impact on the scallop stocks in the area.</li> </ul>	

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland Science</b> <b>(continued)</b>	<b>Commercial Fisheries</b> <ul style="list-style-type: none"> <li>* The statement that squid tend to be fished on hard ground appears to be contradicted by the map depicting the various squid vessels fishing grounds. A large proportion of which are within the proposed site and on predominantly softer/sandy sediments.</li> </ul>	Addressed in Chapters 5.1, 8.1, 11.1 and 15.1.
	<ul style="list-style-type: none"> <li>* We would also recommend that the developer looks at the value in £s of landings rather than just the weight as the value will provide a clearer indication of commercial value/importance of the various fisheries and species.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Complete exclusion of fishing by the scallop fleet from the MORL site due to inter array cabling would pose a significant impact to the fleet and potentially to the stocks if displacement caused increased pressures on scallop stocks.</li> </ul>	
	<b>Benthic Ecology – Offshore Generating Station</b> <ul style="list-style-type: none"> <li>* We do not agree with the examples given of fast burrowing polychaetes, both <i>Magelona</i> and <i>Spiophanes</i> are accepted as being sedentary polychaetes, which we do not believe to be particularly fast burrowing.</li> </ul>	Acknowledged.
	<ul style="list-style-type: none"> <li>* When the developer is assessing the potential significance of sediment disturbance on page 2004 Para. 1, they have established that there will be an impact however this will only be a minor impact. Yet the developer has highlighted this as not significant. We would recommend this is changed to minor as there is a perceived impact therefore it must be above no significance.</li> </ul>	Acknowledged and reflected in Chapter 10.1.
	<ul style="list-style-type: none"> <li>* Can the developer provide evidence to support the claim that "Active borrowers will be able to re-locate to preferred feeding depths following burial and those which feed upon surface and sub-surface deposits may actually benefit from raised SSCs as a result of increased food availability".</li> </ul>	Reference provided in Chapter 10.1.
	<ul style="list-style-type: none"> <li>* The deposition of sediment to 5.1m is considered to be a significant amount. We would therefore consider this to be a significant, admittedly localised, impact. We would also dispute the statement that all crabs and prawns are highly mobile. Some will be buried and the developer should note this.</li> </ul>	Acknowledged and text reflects this in Chapter 10.1.
	<ul style="list-style-type: none"> <li>* The developer should consider that the change in benthic species diversity as a result of creating artificial reef from the rock armour/scour protection and the turbine structures themselves may constitute a significant impact. These communities are likely to very different to the natural occurring communities that are indigenous to the site.</li> </ul>	
<ul style="list-style-type: none"> <li>* The spreading on NIS is a very important issue and of high importance. We would recommend taking a precautionary approach and reassessing this impact as moderately significant.</li> </ul>		

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland Science</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* The developer has concluded that “Potential effects on physical conditions and related biological changes due to the operation of the wind farm are therefore anticipated to be not significant”. This assessment does not reflect the significant amounts of disturbed sediments. This is a significant impact; therefore we recommend this be raised to moderate.</li> </ul>	<p>Acknowledged and text reflects this in Chapter 10.1.</p>
	<ul style="list-style-type: none"> <li>* When assessing decommissioning of the turbines. There has been no mention of the effects or problems associated with the build up of dead shells and other debris around the bases of the turbines. Are these deposits to be removed on decommissioning?</li> </ul>	<p>In line with guidance, MORL has provided a Preliminary Decommissioning Programme (Technical Appendix 1.3 E). A more detailed programme will be developed post-consent and once MORL has confirmed project components and construction methods.</p>
	<p><b>Offshore Transmission Infrastructure</b></p>	
	<ul style="list-style-type: none"> <li>* The Annex 1 stony reef and <i>Sabellaria spinulosa</i> reef are protected habitats; theoretically no trenching or disturbance that had a damaging effect on these habitats would be permitted under current legislation.</li> </ul>	<p>Following consultation this comment is reflected in Chapter 10.1, where the effect is considered to be of major significance prior to mitigation.</p>
	<ul style="list-style-type: none"> <li>* The developer has assessed the impact significance of this as moderate but we would conclude that a detrimental impact to an Annex 1 habitat would constitute an impact of major significance.</li> </ul>	
	<ul style="list-style-type: none"> <li>* In paragraph 2 on page 277, the reduction of habitat and subsequent reduction in species diversity expected as a consequence of mattresses/rock dumping along the cable route etc would constitute a negative impact. The developer should highlight this.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Due to the limited evidence supplied supporting claims that the Annex 1 habitats are patch and not continuous we would recommend that it would be difficult to say that micro-siting of the cables would have only a minor impact. If the developer could provide sufficient supporting evidence for these claims then this impact may be reduced by mitigation but as the evidence stands this is difficult to claim.</li> </ul>	<p>Supporting evidence provided in Chapter 10.1.</p>
	<ul style="list-style-type: none"> <li>* The “change to the ambient sedimentary habitats to a more heterogeneous coarse, hard substrate” could be assessed as minor rather than not significant if the increase in species biodiversity is to the detriment of indigenous species.</li> </ul>	<p>Reflected in Chapter 10.1.</p>
<p><b>Metacocean</b></p> <ul style="list-style-type: none"> <li>* More information on the percentage distribution of sediment size fractions for the sediment samples collected would be really useful. %&gt;1 mm, %&lt;1 mm - &gt; 0.5 mm, %&lt;0.5 mm &gt;0.25 mm and so on.</li> </ul>	<p>Addressed in Chapter 3.1-3.5, 6.1, 6.2, 9.1, 9.2, 13.1 and 13.2. Also addressed in Appendices 3.4A.</p>	

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland Science</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* The information presented in Chapter Six referenced the Technical Appendix Chapters for 11, 12 and 15. Based on the information provided in the sections 2.5.2, 2.5.3 and 3.1 of the appendix, I have made the following comments.</li> </ul>	<p>Addressed in Chapters 3.1-3.5, 6.1, 6.2, 9.1, 9.2, 13.1 and 13.2.</p> <p>Also addressed in Technical Appendices 3.4A, 3.4B and 3.4C.</p>
	<ul style="list-style-type: none"> <li>* Will individual turbines installed using GBS be located only at sites that have 5 m or more surface marine sediments?</li> </ul>	
	<ul style="list-style-type: none"> <li>* The rates of extraction quoted in section 2.5.3 are based on the aggregate extraction of unconsolidated sand and gravels. How would the rates of 3 to 4 hours to fill a 5,000m<sup>3</sup> hopper compare to sediments comprising:                             <ul style="list-style-type: none"> <li>o Lower Cretaceous Clay</li> <li>o Glacial fill</li> <li>o Finer materials associated with deeper waters.</li> </ul> </li> </ul>	
	<ul style="list-style-type: none"> <li>* If elements of the above are likely to be encountered during the preparation for the installation of the gravity based structures, how would this influence the time required to extract almost 40,000m<sup>3</sup> per installation? Have the potential impacts associated with prolonged sediment extraction been taken into consideration? What disposal options have been considered for the extracted sediment? What will be the potential impacts arising from the disposal of 1,200,000 m<sup>3</sup> of sediment (300 x 40,000m<sup>3</sup>). The maximum sea disposal operation in Scottish waters is the Grangemouth Harbour operation which would still be less than the proposed volume being considered for the MORL. Will the sediment be reused as ballast in the GBS?</li> </ul>	
	<ul style="list-style-type: none"> <li>* Were boreholes collected from the application sites to ground truth the sub-bottom profiling? Were samples taken to assess the physical properties of the glacial till and Cretaceous Clay?</li> </ul>	
	<ul style="list-style-type: none"> <li>* Will sediment mobilisation occur at the sea bed during dredging/extraction as well as resulting from the discharge of overspill at the surface?</li> </ul>	
	<p><b>Hydrology</b></p> <ul style="list-style-type: none"> <li>* Increase of Coastal Flood Risk</li> </ul>	<p>Addressed in Chapter 9.3.</p>
	<ul style="list-style-type: none"> <li>* The potential for flood risk could be easily assessed using GIS or through information held by SEPA. Can the developer demonstrate why the cable construction route through the dunes is unlikely to affect the integrity of coastal flood protection systems?</li> </ul>	
<ul style="list-style-type: none"> <li>* Damage to Geological or Geomorphological SSSI sites.</li> </ul>	<p>Addressed in Chapter 9.3.</p>	
<p>Can the developer put the excavated area into the context of the areal extent of the SSSI?</p>		

Organisation	Summary of Response	MORL Approach
<b>Marine Scotland Science (continued)</b>	<b>Migratory Fish</b> <ul style="list-style-type: none"> <li>* We note that Hawkins and Johnstone (1978) is provided as the reference on noise reception for salmon. The developer should confirm that this is still the best source of information and that there are not additional sources of information e.g. Knudsen et al., (1994). They should also clarify whether they have read and considered the review of EMF and noise impacts commissioned by SNH</li> </ul>	Hawkins and Johnstone (1978) contain widely accepted peer reviewed audiogram. Knudsen et al., (1994) has also now been reviewed.
	<ul style="list-style-type: none"> <li>* River Spey SAC. Why is lamprey not listed as an EIA receptor? We assume SNH will have a particular interest in this area.</li> </ul>	
	<ul style="list-style-type: none"> <li>* This distinguishes between species interests in SACs which were selected as primary interests from those selected as secondary interests. This is unnecessary as both types are dealt with identically in the legislation.</li> </ul>	Addressed in Chapter 7.2, 10.2 and 14.2.
	<ul style="list-style-type: none"> <li>* The likely impacts are often assessed as probable, but minor and negative. The biological information on which this is based is very limited (as noted by the SNH commissioned review by Gill). As such we do not consider that a confident assessment can be made. The developer should therefore identify that this assessment is associated with a low level of confidence.</li> </ul>	
	<ul style="list-style-type: none"> <li>* The potential cumulative impacts of other developments on salmon and sea trout will be an important consideration. This is especially true for fish migrating a long distance around the Scottish coast. The developer should also consider cumulative impacts associated with other developments including tidal turbine developments in the Pentland firth etc.</li> </ul>	Addressed in Chapter 14.2.
	<ul style="list-style-type: none"> <li>* Given the substantial uncertainty associated with potential impacts on fish migration and consequences for individual rivers, the developer / MS LOT, may wish to consider the need for monitoring of fish movement through the area and / or the health of salmon populations.</li> </ul>	Addressed in Chapter 7.2, 10.2 and 14.2.
<b>Scottish Natural Heritage (SNH) (05/04/2012)</b>	<b>Fish and Shellfish Ecology – Noise</b> <ul style="list-style-type: none"> <li>* It is important to know the expected timing and duration of activities that will generate noise, and for noise impacts to be considered in respect of key periods of sensitivity for each species. For example, in respect of Atlantic salmon we would wish to be able to determine whether there is any possibility of extensive piling coinciding with the bulk of the smolt run.</li> </ul>	As far as possible, this has been addressed in Chapter 7.2.
	<ul style="list-style-type: none"> <li>* In respect of salmonids the draft states that 'areas in the immediate vicinity of the rivers will not be affected (by noise) and hence fish will not be disturbed immediately prior to river entry or immediately after leaving the rivers...'. Figure 11.2.2.3 indicates that a significant area of the Moray Firth would be affected by the 75 dBht (salmo salar) noise level, so possible impact on fish outside of the areas 'immediately' offshore should also be considered.</li> </ul>	As far as possible, this has been addressed in Chapter 7.2.

Organisation	Summary of Response	MORL Approach
<p><b>Scottish Natural Heritage (SNH)</b> <b>(05/04/2012)</b> <b>(continued)</b></p>	<p>* Currently the underwater noise modelling assumes that such noise is halted when it reaches the shore. While much of the noise is likely to be absorbed by land or dissipates to the surface in shallow water, it is not clear how noise waves behave when being 'funnelled' into shallow water (e.g. into the narrower part of the firth) or to what extent noise is reflected back into open water. While we acknowledge the difficulty of modelling such effects, the ES would benefit from discussion of this.</p>	<p>There is a certain degree of 'funneling' in shallow water but, in fact, this leads to increased absorption as it concentrates the energy in the proximity of the seabed and allows absorptive processes in the seabed to remove energy from the water column more rapidly.</p>
	<p>* We would welcome further detail on the noise modelling for simultaneous piling events. Does this simply result in a larger area (but shorter period) of impact, or does it mean that animals may be exposed to louder noises? (i.e. do multiple noise sources combine, and if so, is this in an additive, synergistic or reductionistic manner?).</p>	<p>It may be shown that even where the pile strikes occur at the same time, the peak level of noise does not increase as the impacts are not coherent.</p>
	<p>* Other mitigation options besides soft-start piling should be considered – it is too early, and there is too little detail available with regard to the construction programme, to be able to categorically state, at this stage, that mitigation is not required.</p>	
	<p><b>Suspended Sediment Concentrations</b></p> <p>* We would find it helpful if sediment concentrations (as discussed on page 213) were mapped in order to consider possible impacts on fish (including Atlantic salmon migration to and from relevant SACs in the area).</p>	<p>Addressed in Chapter 3.6.</p>
	<p>* As we have previously advised, increases in suspended sediment concentrations cannot simply be dismissed as less than natural background conditions. It is important to consider seasonality and to understand that peaks in concentrations due to windfarm construction may occur at different times of year compared to natural peaks, and may coincide with periods of particular sensitivity in species' lifecycles. For example, the period of greatest sensitivity for herring is likely to be during and subsequent to their spawning in late summer and autumn. Peaks in the natural range of suspended sediment mostly occur over the winter and therefore are less likely to coincide with herring spawning, whereas increased levels from windfarm construction might do and therefore need evaluation.</p>	
<p>* For each turbine it would be helpful to have an estimate for the (maximum) total duration of seabed preparation and piling / drilling activity, as well as timings (year round?).</p> <p>* We would welcome estimates for the higher levels of suspended sediment relating to 'local effects around construction vessels' and 'inter-array cable installation'. Again we would welcome further detail on these activities – number of vessels required, likely duration etc.</p>	<p>Addressed in Chapter 3.6.</p>	

Organisation	Summary of Response	MORL Approach
<b>Scottish Natural Heritage (SNH)</b> <b>(05/04/2012)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* Further detail should be provided in respect of any required dredging, including that for turbines with gravity bases and for the offshore substation platforms. It is also not apparent how dredged material is to be brought to the surface and where it might be disposed of.</li> </ul>	Noted.
	<b>EMF</b> <ul style="list-style-type: none"> <li>* We recommend presenting quantitative information on induced electric fields (iE) as well as on magnetic fields (i.e. produce a table for iE equivalent to Table 13.2.2.6 for magnetic fields). It is thought that teleost fish show no response to iE fields &lt;6V/m, but that elasmobranchs can be sensitive to DC iE fields ranging from 0.5-1000 BV/m (smaller range for AC).</li> </ul>	Addressed in Chapter 7.2, 10.2 and 14.2.
	<ul style="list-style-type: none"> <li>* With regard to diadromous fish, we consider it will be important to evaluate cable burial in shallower waters, where these fish could be expected to be in closer proximity to emitted EMF.</li> </ul>	
<b>Scottish Natural Heritage (SNH)</b> <b>(SLVIA specific)</b> <b>(22/03/12)</b>	<ul style="list-style-type: none"> <li>* There is a wide range of relevant information and analysis of this. Together with those aspects outstanding, to be included in the final ES – atmospheric visibility, night-time effects etc. as outlined in 11.3.9.8 – this proves to be a useful draft assessment of the Development's likely impacts. From my review of this draft SLVIA I cannot make substantive comments about any apparent 'lack' of information or assessment that should be included. I look forward to receiving the completed SLVIA, which would appear to be well on track to presenting the likely seascape, landscape and visual effects of the Development.</li> </ul>	Addressed in Chapters 5.4, 8.4, 11.4 and 15.4.
<b>Joint Nature Conservation Committee (JNCC)</b> <b>(22/03/12)</b>	<b>Designated Sites</b> <ul style="list-style-type: none"> <li>* The process of initially defining a search area (and then refining with foraging range) applies predominantly in the breeding season. Seabirds in the non-breeding seasons and non-seabirds will require a different approach and should be accounted for.</li> </ul>	Addressed in Chapter 4.5.
	<ul style="list-style-type: none"> <li>* For breeding seabirds, MORL use mean maximum foraging ranges which is ok but it would be good if they included some kind of buffer – a % or a SD of the mean max, to include SPAs close to boundary of mean max.</li> </ul>	Addressed in Chapter 4.5 and Technical Appendix 4.5 A.
	<ul style="list-style-type: none"> <li>* Maps would be really helpful to illustrate the SPA selection.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Foraging ranges should extend from boundaries of the wind farm site(s).</li> </ul>	

Organisation	Summary of Response	MORL Approach
<b>Joint Nature Conservation Committee (JNCC)</b> <b>(22/03/12)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* SPA list:               <ul style="list-style-type: none"> <li>• There are up to date population estimates for some SPAs – why have these not been used?</li> <li>• They should account for trend</li> <li>• What about FCM?</li> <li>• Why is there 'no data' for a number of sites?</li> </ul> </li> </ul>	<p>Addressed in Chapter 4.5 and Technical Appendix 4.5 A.</p>
	<ul style="list-style-type: none"> <li>* There are a number of species (most listed in Table 3) that have SPAs somewhere in the network. There needs to be some consideration of a process of account for the potential impact of the developments on SPA features from further afield, particularly for seabirds in the passage seasons (e.g. skua sp, tern sp).</li> </ul>	
	<ul style="list-style-type: none"> <li>* 1.4 - Species on Annex 1 AND regularly occurring migratory species are protected within the network of SPA sites.</li> </ul>	
	<ul style="list-style-type: none"> <li>* There is not a difference in level of protection between Annex 1 and ROM at a site level – therefore perhaps no point in distinguishing.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Why is Gannet not identified as 'SPA feature'?</li> </ul>	
	<ul style="list-style-type: none"> <li>* How is 'SPA feature' defined – presumably this means SPAs within some area – foraging range perhaps? Or the generic 100km?</li> </ul>	<p>Addressed in Chapter 4.5 and Technical Appendix 4.5 A.</p>
	<ul style="list-style-type: none"> <li>* Could explanations be provided for the terminology used, i.e. what is the difference between 'frequent' and 'regular'; and how is 'regularly recorded' defined?</li> </ul>	<p>Addressed in Chapter 7.4 and Technical Appendix 4.5 A.</p>
	<p><b>Ornithology – Impact Assessment</b></p> <p><b>Data Analysis</b></p> <ul style="list-style-type: none"> <li>* This section outlines the method for calculating density of birds on the water. We request explanation of a) how densities of birds in flight were calculated, and b) how estimates of birds in flight and on the water were combined to produced overall density and abundance. If population estimates are produced from the on-water data alone (excluding birds in flight), these will under-estimate (in some cases considerably so) the total number of birds.</li> </ul>	
<ul style="list-style-type: none"> <li>* It is stated that recommendations from CREEM were incorporated into the methodology – could these recommendations be expanded upon?</li> </ul>		

Organisation	Summary of Response	MORL Approach
<b>Joint Nature Conservation Committee (JNCC)</b> <b>(22/03/12)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* It is noted that Distance analysis was not used to calculate density for species with fewer than 60-80 observations. What method was used instead to estimate density? We note that herring gull, with 58 observations, was excluded from distance analysis – we suggest in some cases it may be possible to fit a reliable detection function with less than 60 obs, and encourage MORL to examine the data on this species.</li> </ul>	Addressed in Chapter 7.4 and Technical Appendix 4.5 A.
	<ul style="list-style-type: none"> <li>* Segments of transects – we query if the process of dividing transects into segments, and using the 48 segments as replicates has been checked with CREEM? The segments will not be independent sampling units.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Detection functions – for species with large number of observations (e.g. auk sp), it may be preferable to use a survey specific detection function, as opposed to a global one.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Were any covariates used to improve the detection functions?</li> </ul>	
	<ul style="list-style-type: none"> <li>* The methodology section for Density surface modelling should be considerably expanded, it currently does not contain sufficient information to review the method used, however, a few initial comments:</li> </ul>	
	<ul style="list-style-type: none"> <li>* The aims of using DSM should be made clearer - in what way will this process refine the estimates (better precision? Ability to produce estimates for sub-areas? Etc)</li> </ul>	
	<ul style="list-style-type: none"> <li>* The term 'usage' would be better replaced with 'density and distribution' – usage suggests some added level of detail (e.g. birds were foraging).</li> </ul>	
	<ul style="list-style-type: none"> <li>* Please expand on the preparation of the data - effort data needs to be segmented and sightings assigned to segments. The detection function is then used to correct counts on each segment and estimate density per segment (knowing the effective strip half width). Then density (or abundance) per segment in the response variable in the GAM.</li> </ul>	
	<ul style="list-style-type: none"> <li>* What is the effect of including covariates in both Distance stage, and the DSM stage (i.e. sea state?)</li> </ul>	
	<ul style="list-style-type: none"> <li>* Please expand (and reference) the process of model selection.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Please detail the spatial resolution of the covariates.</li> </ul>	
	<ul style="list-style-type: none"> <li>* How was autocorrelation in the data dealt with?</li> </ul>	
<ul style="list-style-type: none"> <li>* Methods for calculating both CIs and CVs should be detailed (for both Distance estimates and DSM).</li> </ul>		

Organisation	Summary of Response	MORL Approach
<p><b>Joint Nature Conservation Committee (JNCC)</b> <b>(22/03/12)</b> <b>(continued)</b></p>	<p>Results - Tables (e.g. table 24) present both Distance-only and DSM data . No CIs are presented for DSM – why not? Presumably the 'DSM' column is abundance, nothing explains this in the table legends or column headers.</p>	<p>Addressed in Chapter 7.4 and Technical Appendix 4.5 A.</p>
	<p><b>Collision Risk</b></p> <p>* More detail is required in this section – MORL offer to supply spreadsheets of the analysis for each species – we agree it would be useful to supply one or two example spreadsheets.</p>	<p>Spreadsheet to be provided on request.</p>
	<p>* The statement 'Flights observed at PCH were extrapolated up in order to estimate the number of individuals that would be likely to pass through the risk area per year', is not very clear and seems to suggest that density of birds in flight was not used to calculate collision risk. If using the Band 2011 recommendations, density would be the correct metric.</p>	
	<p><b>Displacement Analysis</b></p> <p>* Does the mean breeding season population estimate include birds in flight?</p>	<p>Discussion on Robin Rig Wind Farm provided in Technical Appendix 4.5 A.</p>
	<p>* The proportion of non-breeders (at 50%) was suggested by JNCC/SNH if there was an absence of species specific data – has this been found to be the case for the species modelled? Have age classes been used to examine the % of pre-breeders, for example pre-adult gannets should be distinguishable and recorded.</p>	
<p>* We note that the 'realistic approach' (nice choice of phrase) is based on the Robin Rigg data set that JNCC have not seen. Until the data set is available (with accompanying methodology and sample sizes) then we cannot comment on it's general applicability. It is encouraging however, that the 'realistic approach' figures fall within the range of displacement we suggested be modelled.</p>	<p>Discussion on Robin Rig Wind Farm provided in Technical Appendix 4.5 A.</p>	
<p><b>Joint Nature Conservation Committee (JNCC)</b> <b>(Marine Mammals specific)</b> <b>(22/03/12)</b></p>	<p>* Given some areas of uncertainty in the framework (e.g. harbour seal and bottlenose dolphin behavioural responses to pile driving) we may advise the regulator that a research and monitoring programme should be put in place by the regulator in collaboration with the developers in the area to increase the evidence in those areas. In particular, the evidence on seal and dolphin behavioural responses to piling noise is limited and research could be put in place to help address this.</p>	<p>Discussion on proposed monitoring programme provided in Chapter 7.3 and Technical Appendix 7.3 A.</p>
	<p>* Whilst we are satisfied with the rationale given for not using the 186 Db threshold for permanent threshold shift (PTS) onset in seals, we remain unconvinced that there is more supporting evidence for using 198 Db for seals. Therefore we would advice MORL to also present the assessment using the 186 Db threshold so that it provides an idea of the range of potential impacts and a visualisation of this unlikely scenario. This should also demonstrate how sensitive is the assessment framework outputs to this parameter. We currently think it is reasonable to assume that the true average threshold for the onset of PTS might lie somewhere between the 186 and the 198 Db thresholds and therefore it would be useful to see what difference to the overall conclusions that would make.</p>	<p>Addressed in Chapter 7.3, 10.3, 14.3 and Technical Appendix 7.3 A.</p>

Organisation	Summary of Response	MORL Approach
<b>Joint Nature Conservation Committee (JNCC) (Marine Mammals specific) (22/03/12) (continued)</b>	<p>* We are in general satisfied that the approach undertaken by MORL is the best currently possible and it is presented in a logical and robust framework that we anticipate will enable SNCB's advice and decisions by the regulator to be made with a reasonable level of confidence. However, we await the conclusions of the peer review process that will highlight any areas that might benefit from further exploration.</p>	<p>Addressed in Chapter 7.3, 10.3, 14.3 and Technical Appendix 7.3 A.</p>
	<p>* We welcome the incorporation of SAFESIMM and an exploration of possible piling scenarios and seal recovery times in the final ES. We would also welcome clarification of how appropriate it is to use the percentages of population per 4x4 cell to estimate those individuals affected by disturbance, <i>i.e.</i> is it a reasonable assumption that in one year the maximum number of animals that could be displaced correspond to the sum of percentages from the 4x4 cells within the noise impact footprint?</p>	
	<p>* We assume that for the final ES different piling locations will be used in the model. It will be useful to see some discussion around the representativeness of any chosen piling location, <i>i.e.</i> would this represent an average scenario in terms of the number of animals displaced/injured? Would another location make much difference to the outputs?</p>	<p>Addressed in Chapter 3.6 and Technical Appendix 3.6 A, and Chapters 7.3, 10.3, 14.3 and Technical Appendix 7.3 A.</p>
	<p>* In line with some of the comments above, we would welcome the exploration of the sensitivity of the final outputs to different parameters in order to identify those that seem to have a greater influence in the final outputs. In particular, it might be useful to see a number of different simulations using a different range of values, for those datasets and parameters for which the confidence is medium to very low.</p>	
	<p>* The approach as it is or variations of it could be used for all species of concern, although acknowledging that the quantity and quality of data will vary and will result in varying needs for expert judgement and consequently the level of confidence in the assessments. We are keen to see this approach adapted for the east coast bottlenose dolphin population and acknowledge the additional information presented that will be considered for the final ES. We would expect to see an assessment of the potential cumulative effects on the east coast bottlenose dolphin population from all windfarm developments within the range of this population, not just that potentially arising from concurrent periods of construction but also subsequent ones.</p>	
<p>* For species which are part of wide ranging larger populations (harbour porpoise, minke whale, white beaked dolphins), although we acknowledge the usefulness of such approach we advise that the assessment of potential population level effects needs to be carried out at the strategic level by the regulator taking into account several developments within the large ranges of the populations and not by individual developers as given the number and scale of developments this would not be feasible. However, in the final ES we would expect to see an estimation of what potential contribution will the MORL development do the overall potential impact (<i>i.e.</i> how many days/area affected by piling and how many individuals could be affected and in what way) as presented in the draft ES. This should be then put in the context of population estimates and Favourable Conservation Status assessments (from 2007).</p>		

Organisation	Summary of Response	MORL Approach
<b>RSPB (offshore)</b> <b>(28/02/12)</b>	<ul style="list-style-type: none"> <li>* Pentland Firth Islands SPA is missing from Figure 9.1.2. Table 9.7.4 Great Skua is omitted.</li> </ul>	Addressed in Chapters 4.1, 7.4 and Technical Appendix 4.5 A.
	<ul style="list-style-type: none"> <li>* There is a case for making a case for greater allowance for nocturnal flights across the Moray Firth, at least in the autumn.</li> </ul>	
	<ul style="list-style-type: none"> <li>* How reliable are Robin Rigg rates of displacement with data from only one year post construction.</li> </ul>	Discussion on Robin Rigg data provided in Technical Appendix 7.4 A.
	<p><b>Technical Appendix 9.7 C</b></p> <ul style="list-style-type: none"> <li>* I wonder whether adding tracking devices altered birds prosperity for making long or short flights? Or is it a case a case of abandonment of nests? The assumption that birds fitted with these devices behave normally is fundamental to any extrapolation from data obtained in this way.</li> </ul>	Discussion provided in Technical Appendix 7.4 A.
	<ul style="list-style-type: none"> <li>* It would be informative to provide evidence of how long birds may be away from nests if not caught and fitted with tracking devices but fish shortage in recent years may cloud this issue.</li> </ul>	Discussion provided in Technical Appendix 7.4 A.
	<ul style="list-style-type: none"> <li>* A contrast is made between the recovery rates of razorbill (high) and guillemot and fulmar (low). These species are of comparable body mass but were weights or fat scores taken on capture?</li> </ul>	
	<ul style="list-style-type: none"> <li>* With 24 tags deployed on kittiwakes and 15 retrieved, how can they have &lt;1% lost tags when tail mounted?</li> </ul>	A detailed monitoring programme will be agreed with regulatory authorities post-consent.
	<p><b>Benthic Ecology</b></p> <ul style="list-style-type: none"> <li>* We would point out that, once disturbed, any benthic assemblage is highly unlikely to return to the same community structure that was present initially: as communities are dynamic it is pointless to expect simple bounce-back. Should these developments be consented, we would expect comprehensive monitoring programmes which include good reference sites and use Before-After-Control-Impact approaches to sampling design.</li> </ul>	
<p><b>Fish and Shellfish</b></p> <ul style="list-style-type: none"> <li>* We agree that impacts at the scale of the North Sea are negligible but would suggest that with the scale of the wind farm they are potentially more severe than suggested. Perturbation of seabed ecology is likely to have longer lasting impacts if works go ahead in late spring/summer in a year with calm weather, but this cannot be mitigated for such a large scale project in a harsh physical environment. Nevertheless, within the timescale of the development most of the localised effects of construction activity will have worn off. While a creation of new habitat for new or different species is certain e.g. artificial reef creation, a bigger impact on local fish stocks is likely to arise from the restriction of trawling among the towers. If trawlers are excluded there will be significant benefits to the environment that will more than offset construction damage.</li> </ul>	Addressed in Chapter 7.2.	

Organisation	Summary of Response	MORL Approach
<b>RSPB (offshore)</b> <b>(28/02/12)</b> <b>(continued)</b>	<p><b>Intertidal Ecology</b></p> <ul style="list-style-type: none"> <li>* As rocky shore assemblages are subject to annual changes, there should be some statement about sampling dates.</li> </ul>	<p>Survey dates are supplied in Chapter 4.6.</p>
	<p><b>Appendix 1</b></p> <p><b>Benthic Ecology Baseline</b></p> <ul style="list-style-type: none"> <li>* Whilst studies associated with the Beatrice Oilfield and the Beatrice Demonstrator Project are relevant, extrapolation from a site which is some distance away must be done with caution and conditions can change substantially over a 30 year period.</li> </ul>	<p>Acknowledged.</p>
	<ul style="list-style-type: none"> <li>* The sampling scheme on page 101 misses out many key ecosystem components. Grabs quantify small bodied animals (and occasionally collect bigger ones) in the top 10-20 cm of sediment but sample very small areas. Video and trawling methods overlap by quantifying larger animals living in the sediment surface but neither method collects large bodied deep burrowing animals such as thalassinid shrimps or larger bivalves, important in ecosystem function. Close examination of high quality, near bottom video can reveal the holes such animals produce but identification and quantification of species is extremely difficult. Fig 9.2.4 has images of burrowing shrimps but they are not part of the species list and not used in the classification process. Large box cores, extracted over a 5 mm mesh which sample to the depth that the shrimps live would have been useful.</li> </ul>	<p>Survey methods were agreed with Marine Scotland and are detailed in Technical Appendices 4.2 A and B,</p>
	<ul style="list-style-type: none"> <li>* It should be acknowledged on page 102 that in a coarse sediment a substantial part of the biodiversity is small annelids which will pass through 1 mm mesh.</li> </ul>	
	<ul style="list-style-type: none"> <li>* It should be acknowledged that not all 5-minute video tows are the same and data quality is very much sea condition dependant.</li> </ul>	
	<ul style="list-style-type: none"> <li>* It is unclear in Fig 9.2.5.4 whether biotope boundaries derived from acoustic data are real or a function of the analytical tools used for the interpretation.</li> </ul>	
	<ul style="list-style-type: none"> <li>* In page 188 it should be acknowledged that foundations laid on the seafloor are likely to have an impact on local current speed and turbulence and hence on sediment grain size and species composition. In addition, the displacement of one meter or more (up to 5 m) of sand would smother the benthos and while some recovery would be rapid, longer lived species might take some years to recover. Seven mm of mud would smother a substantial proportion of the benthic fauna that underpin local fisheries. Comments on normal variation in the level of seafloor are rather generalised and would seem to pertain more to a mobile sandy bottom rather than mud or muddy sand. However, we concede that, if the area impacted is truly less than 2 km<sup>2</sup> then it is of little more than local concern.</li> </ul>	

Organisation	Summary of Response	MORL Approach
<b>RSPB (offshore)</b> <b>(28/02/12)</b> <b>(continued)</b>	<p><b>Benthic Ecology Technical Appendix</b></p> <ul style="list-style-type: none"> <li>* "Each trawl tow was approximately 500 m distance at a speed of 2-3 knots." – it would be useful to give an indication of how long the beam trawl was effectively trawling the sea floor.</li> </ul>	<p>Survey methods were agreed with Marine Scotland and are detailed in Technical Appendices 4.2 A and B.</p>
	<ul style="list-style-type: none"> <li>* The conclusion may be less sound than is suggested as the sampling procedure for mega-fauna is poor (See comments above).</li> </ul>	
	<p><b>Additional Information</b></p> <p><b>Representativeness of bird tracking data</b></p> <ul style="list-style-type: none"> <li>* It cannot be overemphasised that tracking data from East Caithness Cliffs SPA have been obtained from a small sample of birds and cover only a limited period in a single year. Any extrapolation of results must be done with caution. Other data sets, such as that from the FAME project, show that relative usage of different foraging locations may differ from year to year. For example, data collected on Orkney by the FAME project has shown a higher incidence of seabirds travelling to feed off the Aberdeenshire coast in 2010 than during 2011. Maps of seabird tracking data from the FAME project will shortly be available to view and download from the RSPB website. If similar variation exists among birds from the Caithness cliffs, then one might expect a greater proportion of birds to be heading south-east to the Aberdeenshire coast, and potentially commuting through the development area, than was found in 2011. An additional consideration is that the assumption is made that birds fitted with tracking devices behave normally.</li> </ul>	<p>Discussion provided in Technical Appendix 7.4 A.</p>
	<ul style="list-style-type: none"> <li>* There is also the possibility that birds which desert following tag deployment may be wholly, or disproportionately, of one particular age or sex class (e.g. younger females) whose foraging pattern may therefore be under-represented by this study. Other studies have shown gender differences in seabird foraging locations, so data presented here may be biased.</li> </ul>	
	<p><b>Birds transiting windfarm site</b></p> <ul style="list-style-type: none"> <li>* This issue is explored for East Caithness Cliffs birds but not for birds from other colonies, such as those further north on the Caithness cliffs, as well as those in Orkney and Fair Isle which, as noted above, feed off Aberdeenshire. Birds tracked from colonies in Orkney by the FAME project have transited through the MORL site. Movements of North Caithness Cliffs SPA birds are unknown and it is quite likely that they also pass through the site.</li> </ul>	

Organisation	Summary of Response	MORL Approach
<b>RSPB (offshore)</b> <b>(28/02/12)</b> <b>(continued)</b>	<p><b>Modelling Work</b></p> <ul style="list-style-type: none"> <li>* We welcome the use of modelling to try to overcome some of the shortcomings of observational and tracking work. The methods section suggests that information on colony size and location were combined with tracking and oceanographic data to predict at-sea densities of seabirds. However, it is not clear from the results that this combination of approaches has in fact been achieved. Instead separate maps are presented for colony-based distributions (Fig. 3) and distributions based on habitat association with tracking data (Fig. 4). It would be highly instructive to combine these two approaches.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>* Two important shortcomings of modelling are referred to on page 18: the projections do not account for transiting behaviour which will be important if birds fly through the windfarm (when they will be exposed to collision risk) or, if they avoid the windfarm by skirting round it, their energy budgets may be adversely affected. Further consideration of these matters in respect of the modelling work may be required. Secondly, the lack of a fulmar projection (because the low Nagelkerke value indicates a low explanatory power of this model) is perhaps all the more important in view of the finding that, of all four species investigated, this one appears to make most use of the MORL site either for foraging or in transit.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>* We seek clarification of the term “maximum mean” (with reference to foraging trips on page 10 and in the legend to Fig 3 on page 14). Does it refer to the mean of each tracked individual’s recorded maximum foraging distance? If so, this is more usually referred to as “mean maximum” in the scientific literature.</li> </ul>	<p>Discussion provided in Technical Appendix 7.4 A.</p>
<b>RSPB (onshore)</b> <b>(23/03/12)</b>	<ul style="list-style-type: none"> <li>* Seven valued ecological receptors were identified for assessment, four of which relate to ornithological interests: Loch of Strathbeg SPA, terrestrial breeding birds, coastal wintering birds and habitats.</li> </ul> <p><b>Loch of Strathbeg</b></p> <ul style="list-style-type: none"> <li>* The cable route does not pass through the SPA itself so there will be no direct habitat loss or damage to the SPA. At its closest point the cable lies 1.2 km away from the SPA. We accept species disturbance and displacement is unlikely.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>* The Draft ES indicates the main impact on the SPA to be likely loss of foraging habitat used by Loch of Strathbeg goose population, as well as goose disturbance/displacement from foraging areas during construction and decommissioning phases of the development. RSPB agrees any impacts will be temporary and reversible as foraging ground elsewhere. Any impact will be further reduced by the proposed mitigation and by phasing construction and decommissioning works along the length of the cable route.</li> </ul>	<p>Acknowledged.</p>

Organisation	Summary of Response	MORL Approach
<p><b>RSPB (onshore)</b> <b>(23/03/12)</b> <b>(continued)</b></p>	<p><b>Terrestrial Breeding Birds</b></p> <ul style="list-style-type: none"> <li>* Although there will be loss of potential breeding habitat during construction and decommissioning, it is accepted that this will be temporary, reversible and will cover a relatively small area. Therefore impact not expected to be significant.</li> </ul>	<p>Acknowledged.</p>
	<ul style="list-style-type: none"> <li>* Works must comply with Wildlife and Countryside Act 1981, as amended by the Nature Conservation (Scotland) Act 2004. Wherever possible, groundworks should take place outwith the breeding season in order to minimise the risk or damage and/or disturbance to breeding birds. Where this is not possible, the risks should be minimised by the proposed mitigation, namely to follow SNH Best Practise Guidance, the detail of which is described on page 412 of the Draft ES.</li> </ul>	
	<p><b>Coastal Wintering Birds</b></p> <ul style="list-style-type: none"> <li>* Construction and decommissioning will result in the temporary loss of a small area of foraging and/or roosting habitat. The work is also likely to result in disturbance to coastal birds using the shoreline within the immediate vicinity of the development site. However, RSPB Scotland accepts that these impacts will be temporary, reversible and will cover a relatively small area of the locally available habitat. RSPB agrees impact on coastal wintering birds is likely to be low.</li> </ul>	<p>Acknowledged. Proposed mitigation measures presented in Chapter 10.6.</p>
	<ul style="list-style-type: none"> <li>* This will be further minimised by proposed mitigation to undertake coastal works during summer months, however please see the point below regarding the potential impact of construction on the Buchan Ness to Collieston SPA.</li> </ul>	
	<p><b>Habitats</b></p> <p><i>Buchan Ness to Collieston SPA</i></p> <ul style="list-style-type: none"> <li>* Buchan Ness to Collieston SPA abuts the south of the joint route. Page 409 of the Draft ES identifies the potential for construction works to cause disturbance to the qualifying ornithological features of the SPA, however the Draft ES makes little assessment of the impact of any disturbance. Therefore, there is currently insufficient evidence to conclude that the construction works will not have a negative impact on SPA seabird populations.</li> <li>* Disturbance to breeding seabirds could largely be avoided by undertaking work on this section during the winter months. If construction work is to take place during the breeding season, an Appropriate Assessment under the terms of the Habitat Regulations will be required. Most of the cliff-nesting species would not be affected by onshore construction activity but breeding Herring Gulls, a qualifying feature of the Buchan Ness to Collieston SPA, forage in agricultural land in the Buchan area. The impact on foraging Herring Gulls is anticipated to be similar to that of wintering geese, namely a temporary and reversible loss of foraging habitat and some displacement within the immediate vicinity of the works.</li> </ul>	<p>Given refinements in cable routing, this SPA and SAC is no longer considered in assessment. This approach has been agreed with the RSPB.</p>

Organisation	Summary of Response	MORL Approach
<b>RSPB (onshore)</b> <b>(23/03/12)</b> <b>(continued)</b>	<p><i>Loch of Strathbeg</i></p> <ul style="list-style-type: none"> <li>* Page 409 notes that the cable route may affect the Loch Strathbeg SSSI. The impact of potential disturbance to the ornithological qualifying features of Loch of Strathbeg SSSI, as well as any damage to qualifying habitat features, should be assessed in greater detail.</li> </ul>	<p>Acknowledged. Proposed mitigation measures presented in Chapter 10.6.</p>
	<ul style="list-style-type: none"> <li>* The impact on water quality at the Loch of Strathbeg is not expected to be significant after the mitigation described.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Overall RSPB does not have serious concerns about the proposed development but recommends that further consideration is given to the potential impact on the Buchan Ness to Collieston SPA and the Loch of Strathbeg SSSI.</li> </ul>	
<b>Helmsdale River Board</b> <b>(29/03/12)</b>	<ul style="list-style-type: none"> <li>* The sandeel survey done off Holland was commissioned by the 'owners' of the wind farm and is therefore not objective, secondly the wind farm is not described so the size of any impact is impossible to compare. This is an inadequate paper in the context.</li> </ul>	<p>Addressed as far as possible in Chapter 7.2 and 10.2.</p>
	<ul style="list-style-type: none"> <li>* The papers fail to understand salmon and sea-trout relevance in that there is no discussion of smolts. At the meeting held with river interests in Inverness it was made clear that the threat to smolts is paramount for salmon angling interests. Unless they are protected there are no salmon. This appears not to have sunk in. There is reference to elvers or young common eels, but these are fish returning to freshwater not leaving it. It is the impact on smolt's feeding as they leave rivers which needed attention and does not get it. At the meeting it was requested that development managers consider the possibility of not doing seismic and drilling work during the smolt run: this idea is omitted.</li> </ul>	
	<ul style="list-style-type: none"> <li>* There is no mention of the considerable economic value of salmon fishings in the preface sections. They are treated the same as lampreys, or creatures without economic significance.</li> </ul>	
	<ul style="list-style-type: none"> <li>* On the all-important matter of sandeels (basic feeding for outgoing smolts), the report concedes that nothing is known and then offers no precautionary suggestion about mitigating impacts.</li> </ul>	<p>Addressed in Appendix 4.3 C.</p>
	<ul style="list-style-type: none"> <li>* Despite the admitted lack of knowledge about adult salmon migrations no proposals are made to lower impacts on them. The theme is, let's plough on regardless. In the Biological Environment section there is mention of salmon's ability to respond to electro-magnetic pulses but apparently no understanding of the fact that they possess magnetite in their lateral line. Electro-magnetic orientation is part of the make-up, as identified in the multi-million pound international research done and recently published under SALSEA. Indeed, there is no indication the authors made any effort to acquaint themselves with SALSEA or are even aware of its existence.</li> </ul>	<p>Addressed as far as possible in Chapter 7.2, 10.2, 14.2 and Appendix 4.3 D.</p>

Organisation	Summary of Response	MORL Approach
<b>Helmsdale River Board</b> (29/03/12) (continued)	<p>* It is mentioned that salmon swim in the upper water surface. This is incorrect. An acquaintance with current knowledge would disabuse the authors of this assumption. In fact, salmon dive deep. In any case in the Moray Firth project the water on the sandbanks is shallow, so there would be very little water beneath any fish swimming through the development zone anyway.</p>	<p>Addressed as far as possible in Chapter 7.2, 10.2, 14.2 and Appendix 4.3 D.</p>
	<p>* The gobbledegook gives an impression of incoherent waffle. For example, the sentence, 'Indirect impacts may however occur if the ecology of the species is adversely affected' is meaningless and reduces any confidence that the authors adequately understand their subject.</p>	<p>Noted.</p>
<b>Historic Scotland</b> (26/03/12)	<p>* We broadly concur with the conclusions reached in this draft ES in terms of the predicted impacts on heritage assets within our remit. With regard to marine assets, we confirmed in our previous letter of 15 November 2011 that there are no designations within our statutory remit located within the Inner and Outer Study Areas. However, there are some chartered wrecks along the offshore subsea export cable route. We are satisfied that a Protocol for Archaeological Discoveries (PAD) will be put in place to mitigate construction impacts in the event of any unexpected archaeological discoveries. In terms of the onshore heritage assets that can experience indirect impacts as a result of the offshore wind farms, given the distances involved we do not consider that these impacts would be of such a significance to warrant an objection from Historic Scotland. While a number of turbines may be visible from some nationally important heritage assets, in our view this would not have a major adverse impact on the key aspects of their setting. Notwithstanding this, please note that our comments here are provisional and we would need to see the ES and planning application to give our final view on the proposal.</p>	<p>Noted.</p>
	<p>* We understand that the route of the onshore underground cable and location of the substation have yet to be finalised. We would welcome further consultation in relation to how these aspects of the proposal can impact on the onshore heritage assets within our remit in due course.</p>	
<b>MCA</b> (20/03/12)	<p>* The first point is one of presentation, the structure of the document makes it extremely hard to navigate around, it took some time to work out the inter relationship between the sections, you have the main ES within which I find the appendix on Shipping &amp; Navigation inside that are technical appendices and further appendices to the appendices!. Reading back, this sentence is clearly difficult to interpret, which reflects precisely the problems with the structure of the overall ES, to assist future readers I suggest this needs to be addressed before the document is finalised.</p>	<p>Addressed in Chapters 5.2, 8.2, 11.2 and 15.2. MCA consulted on approach to ES.</p>
	<p>* Moving onto more technical issues, the ES and NRA have been reviewed against MGN 371, the compliance checklist details noted, the following comments are provided:</p>	

Organisation	Summary of Response	MORL Approach
<p><b>MCA</b> <b>(20/03/12)</b> <b>(continued)</b></p>	<p>* It is noted you have adopted the Rochdale Envelope approach to scenario development for turbine and OSP layout. Unfortunately this does not lend itself to supporting a constructive NRA review, scenario 1 &amp; 3 place substations in odd isolated locations, which does not sit well from the NRA perspective. The shape of McColl places isolated turbines at the NE corner and more pronounced isolated structures to the SW arm which raises significant concerns from the risk perspective, and should be avoided. The general issues identified with the proposed scenarios have been used to apply the NRA review, consent will be subject to submission of finalised layout plans against which conditions will then be applied.</p>	<p>Addressed in Chapters 5.2, 8.2, 11.2 and 15.2. MCA consulted on approach to ES.</p>
	<p>* It would be helpful if the scenarios adopted a more realistic rather than the current purely generic approach to help address the NRA issues.</p>	
	<p>* It is of concern that turbine layout may not be homogenous across the zone, para 4.4.2 of the ES referring to different turbine ratings for each of the three wind farms, this raises a number of issues regarding the development, which is now effectively three separate wind farms. ID marking may become interrupted and confusing, WTG grouping may result in isolated or separated blocks, MCA would seek assurances that the three windfarms are planned to ensure structures are effectively blocked together as per suggested groupings at 4.4.2. but taking due cognisance of concerns raised in previous paragraph.</p>	
	<p>* In developing the ERCOP, the distinct and separate wind farm developments within the licence area need to ensure that a cohesive approach is developed ensuring a single ERCOP provides full cover across the development area, this will have to include the operation and management of the OSPs which may be under the control of a third party.</p>	<p>No Semi Submersible structures proposed anymore.</p>
	<p>* If the semi submersible approach to OSP is undertaken the NRA will need to address any impacts from the mooring arrangements which will also require the provision of a Third Party Verification (TPV), it is essential that any deployed mooring arrangement or cable arch does not impact drafts for shipping or general fishing activity.</p>	
	<p>* Cable routes and burial indices need to be carefully addressed, where trenching cannot be achieved to the required depth, any protection methods that produce a reduction in available water depth should be such as to ensure that no impact is placed on surface navigation of transiting vessels. Cable routes need to ensure existing anchorages are not impacted. it is noted the proposed route passes through a recognised anchorage in Fraserburgh Bay. Comment at 13.3.2.3 that vessels will migrate away from the anchorage once the cables are laid cannot be assumed, It is a chartered 'recommended anchorage' as such MORL will have to ensure adequate sea room for vessels to effectively use it.</p>	<p>Application included along with S36 application.</p>
<p>* Any proposed operational safety zones will require formal justification as part of the application process upon which the MCA will consider the application.</p>		

Organisation	Summary of Response	MORL Approach
<b>MCA</b> <b>(20/03/12)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* Para 3.3 of the NRA refers to the clearance height of 22m above HAT, this is correctly reported in figure 3.5, but in the sentence that immediately precedes the figure the reference is above LAT and needs to be corrected.</li> <li>* Despite earlier comment, the NRA section on salvage and SAR remains incorrect, currently placing the full burden of response on the MCA, furthermore ETV contracts have now lapsed and therefore need to be removed. The Shipping Minister has made it very clear that wind farms will need to be able to manage a self help response to handle an emergency within their development. The emphasis of the statements needs rewording to place responsibility for 1st response with the developer/operator, for both emergency tug provision and initial evacuation/SAR activity. Details of that response resource should be provided in this section.</li> </ul>	<p>Application included along with S36 application.</p>
<b>Northern Lighthouse Board (NLB)</b> <b>(22/02/12)</b>	<ul style="list-style-type: none"> <li>* The significant or likely effects have been identified within the Shipping and Navigation Sections of the Environmental Statement on which we have previously commented. We would not comment on any other considerations.</li> <li>* We would prefer the final Environmental Statement in hard copy and CD as this allows easier solution for both study/assessment and storage.</li> <li>* The observations to mitigation and monitoring previously supplied by the Northern Lighthouse Board have been made in response to proposed site layouts and methodology for establishing the sites. We would however reiterate that we will recommend marking and lighting regimes for all stages of the development once a final turbine layout has been agreed.</li> </ul>	<p>Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.</p>
<b>Scottish Enterprise (SI)</b>	<ul style="list-style-type: none"> <li>* p344 offshore transmission works impact - haven't seen this section (ref says reported separately in its own socio-economic chapter) - why? - and when headline impact estimates are presented, these should state that they exclude the OTW impacts, or include them... is it usual to assess/ report OTW impact separately?</li> <li>* p348 base case 20%, high case 50%... Cian Conroy was mentioning an 8%(?) figure from somewhere (DECC?) as a low supply chain input number... good to confirm that 20% is reasonable/ achievable without supply chain stimulation (i.e. not ambitious). Report mentions just one Tier 1 supplier located in local area - I imagine contracting (or not) with a local Tier 1 supplier could have a large bearing on ultimate economic impact?</li> <li>*</li> </ul>	<p>Separate applications will be applied for the offshore generating station and transmission infrastructure, therefore separate assessments have been carried out. Chapter 12 summarises the Whole Project Assessment.</p> <p>Discussion on supply chain provided in Chapter 5.6.</p>

Organisation	Summary of Response	MORL Approach
<p><b>Scottish Enterprise (SI)</b> <b>(continued)</b></p>	<p>* Cian forwarded an impact doc on Robin Rigg attached (off Cumbria/ Dumf &amp; Gall) stating 37% UK supply chain share (11% Scotland (only 0.2% D&amp;G), 5% NW England). This also quoted 48% UK share for Scroby Sands (East of England) and 50% for Ormonde (Cumbria), and 10-20% for London/ Thanet (tier 1 only).</p>	<p>Discussion on supply chain provided in Chapter 5.6.</p>
	<p>* p348 Table 11.3.1.5 and subsequently in text/ tables - consultants need to clarify at each mention that 'Scotland' includes the 'local area', and also where they put 'rest of the UK' whether this really is rest of UK, or UK including Scotland/local area</p>	
	<p>* p350 Magnitude first para, at end, after 'over 1,000 jobs' add 'during construction'</p>	
	<p>* p350 in the presentation of the impacts, two things might be useful: a) a high case minus base case set of numbers, showing the potential scale of impact that might be achievable if we get our act together on the supply chain front; b) a comparison of the job estimates with levels of local sectoral employment currently... e.g. making point that if x jobs got located in the local area (excl Aberdeen), the scale of these are significant for the local labour market; could also supplement this with consideration of ave/ median salaries that might be expected relative to local area (non-Aberdeen) averages - i.e. no/% of high value (&gt;£34k) of higher than average salary jobs expected (these additions might be more for SE/HIE case making rather than a requirement of the EIA, but they help to make the numbers more real.</p>	<p>Addressed in Chapters 8.6 and 11.6.</p>
	<p>* general on tourism impact... I expect it to be positive overall, since there won't be measurable negative impact (to the extent that there is even an element of negative impact, as long as the dolphins don't flea the firth!), and there will be impact as mentioned in local guesthouses of contractor overnights, and possibly ultimately tourism impact associated with e.g. sea trips around the turbines).</p>	
	<p>* On the components of net economic impact modeling, the approach seems reasonable:</p>	
	<p>* deadweight and displacement - what would happen otherwise: reasonable to exclude 'macro' factors such as effects on net impact on energy market by: distortion through subsidies to renewables or displacement of e.g. oil &amp; gas economic activity by this renewables project (growing energy demand/ markets and displacement of e.g. imported gas rather than N Sea oil &amp; gas are two arguments for thinking local displacement would be negligible. The skills consideration may be worth flagging up - i.e. if skilled labour is in short supply and the project hired this labour from other local companies, this could have a negative effect on them in terms of bidding up salaries and recruitment - but I'd expect people to move to where the jobs are in a recession, and the public sector knows it needs to ramp up on the skills side - and is doing so - e.g. Nigg Skills Academy, so I don't think we need worry too much about labour displacement either</p>	<p>Discussion provided in Chapters 8.6, 11.6 and 15.6.</p>
<p>* leakage - the modeling accounts for this explicitly by defining the local and Scotland areas and the base and high case content %s</p>		

Organisation	Summary of Response	MORL Approach
<b>Scottish Enterprise (SI) (continued)</b>	* multipliers - the ones used and the adjustments made seem appropriate (good if the paper set these out in a table)	Discussion provided in Chapters 8.6, 11.6 and 15.6.
<b>Highlands and Island Enterprise (HIE) (20/03/12)</b>	* p. 240 - 3d bullet point after the table - should read HIE (rather than Caithness and Sutherland!)	Addressed in Chapter 8.6.
	* 10.11.3. - I would add a reference to the HM Green Book guidance used by all public sector in the UK.	Discussion provided in Chapter 8.6.
	* p. 243 - GVA and in particular ASHE earnings data are not reliable at sub-regional levels. This is true in particular for Moray, where RAF wages are not accounted for in surveys - a caveat should be provided.	
	* p. 244 - SIMD is not a great measure for rural region like Highland, it applies to urban, densely populated areas.	
	* p. 247 - Supply development - 1st para - add an update on WTL at Machrihanish and Nigg. Skills - more detail needed on the relevant geographic area's labour market capacity and skills available locally (current and future). Need to highlight where the potential required labour might come from. Any potential displacement issues (this might need covered later in the impacts section).	
	<b>Impacts</b>	
	* p. 343 - Whilst mentioned that it is not within the scope of the study to address impacts of electricity generation activity I think it is important to highlight the significance of these impacts.	Addressed in Chapters 8.6 and 11.6.
	* p. 344 - More analysis and evidence is needed here on the chosen options for 'base case' and 'high case' scenarios.	
	* Table 11.3.1.1. - Can we add the timespan for phases and sub-phases of the development.	
	* p. 346 - How much insight does the detailed sensitivity analysis add to the overall assessment in this case?	
* 11.3.11.3 - 1st para - the ratio used from Renewables UK - I have seen a different rule of thumb used in other sources: 'for every megawatt installed, approximately £1 million of economic expenditure occurs, of which a portion will be within the local area' (DTI, 2002). This was actually mentioned in a piece of work for MORL (courtesy of Google). How does this compare to the one used in the study?		

Organisation	Summary of Response	MORL Approach
<p><b>Highlands and Island Enterprise (HIE)</b> <b>(20/03/12)</b> <b>(continued)</b></p>	<p>* p. 349 - the overall employment figure seems a bit low considering the scale of the developments. Can we sense check these figures against company's projections/expectations? Any info on incomes?</p>	<p>Based on information from MORLs current financial models and information provided by suppliers during RFI process.</p>
	<p>* p. 350 - GVA - would be useful to add a comment on composition of GVA and how much of it occurs locally (considering the ownership of the company and where the profits are likely to be retained).</p>	
	<p>* A bit more clarity would be useful on the overall impacts - maybe put them together in a table and highlight the impacts from the particular phases of the proposed developments (incl. OTI).</p>	<p>Addressed in Chapters 8.6, 11.6 and 15.6.</p>
	<p>* More generally, wider socio-economic impacts should also be considered and mentioned in the study (e.g. impacts on communities, landscapes and sceneries etc etc. - this might have partly been covered in the environmental assessment?).</p>	<p>SLVIA presented in Chapters 8.4, 11.4 and 15.4. Commercial Fisheries assessments provided in Chapters 8.1, 11.1 and 15.1.</p>
<p><b>Scottish Environmental Protection Agency (SEPA)</b> <b>(27/03/12)</b></p>	<p><b>Site layout and nature of construction</b></p> <p>* The ES does not provide maps of the NVC habitat types identified. These maps are required to give an overview of the habitats present in the corridors and should be reference to the Target Notes detailed in the finalised ES. In addition there has been no assessment of whether the identified wetland habitats are groundwater dependant terrestrial ecosystems (GWDTE). The ES must identify all GWDTE within 100m of cable trenches and other associated transmission infrastructure and provide and assessment of the likely impacts of the proposed development.</p>	<p>This information will be followed up when a specific onshore export cable route is finalised.</p>
	<p>* For GWDTE, other wetlands, deep peat and riparian woodland, a much more precise indication of the location of the cable trench would be required to accurately assess impact or a commitment that these habitats will be avoided. In addition the location of watercourse crossings will be required. It is understood that there will be a maximum 10m width working zone when cable laying and the ES states that the final trench route will be micro-sited to minimise environmental impacts. Any habitat restoration options of the ecological receptors detailed above and on watercourses should be agreed with SEPA prior to the commencement of the works.</p>	
	<p>* Sediment transport from the Strathbeg catchment (which is largely agricultural) has contributed to the currently enriched state of the loch, which in turn is affecting the survival of species of interest, including macrophyte species. If possible, avoidance of these tributaries would be advised, but if that is not possible it is imperative that sediment controls are strictly adhered to during construction as an incident risks undermining years of inter-agency work to improve the status of the Burn of Savocho and Loch of Strathbeg.</p>	
	<p>* In siting the cable trench, the potential to add to the fine sediment load of the Ugie should be carefully considered.</p>	<p>Addressed in Chapter 9.3.</p>

Organisation	Summary of Response	MORL Approach
<p><b>Scottish Environmental Protection Agency (SEPA)</b> <b>(27/03/12)</b> <b>(continued)</b></p>	<ul style="list-style-type: none"> <li>* The ES doesn't make reference to the two EC Designated bathing waters at Fraserburgh, Fraserburgh Tigerhill and Fraserburgh Philorth with regard to minimising water quality impacts during construction and amenity impacts.</li> </ul>	Addressed in Chapter 9.3.
	<p><b>River Basin Management Planning</b></p> <ul style="list-style-type: none"> <li>* It would be helpful to note in the finalised ES that the requirements of the Water Framework Directive (WFD) are to ensure that all surface water bodies, including transitional and coastal waters, out to 3nm, achieve 'Good Ecological Status' and that there is no deterioration in status. This includes the consideration of ecological, chemical and hydromorphological parameters in transitional and coastal water bodies.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Physical Environment (Onshore) describes the ecological status classification of the terrestrial water bodies in the study area but the same has not been done for the coastal water bodies in Chapter 15 Physical Environment (Offshore), this should be addressed in the finalised ES.</li> </ul>	
	<ul style="list-style-type: none"> <li>* We have noted the recognition of rivers and groundwater bodies, and the use of RBMP classification data. The Loch of Strathbeg (a water body at bad ecological status because of diffuse source pollution) should also be considered here, and it may also be appropriate to refer to Bathing Water designations in the Fraserburgh area.</li> </ul>	
	<ul style="list-style-type: none"> <li>* The onshore infrastructure proposals have the potential to create morphological and diffuse pollution impacts on water bodies, on the River Ugie catchment and the Burn of Savocho in particular. It will be important to follow best practice to prevent any deterioration in the ecological status of water bodies.</li> </ul>	
	<p><b>Construction Environmental Management Document (CEMD) and pollution prevention</b></p> <ul style="list-style-type: none"> <li>* SEPA recommends that, in line with WFD and MSFD objectives, the developers draw up and adopt a protocol to minimise risks of introducing marine invasive species to the area via attachment on marine plant and specialised equipment transported to the area before the constructional phase begins.</li> </ul>	Addressed in Chapter 9.3. mitigation proposed to control possible impacts on water quality and catchment.
	<ul style="list-style-type: none"> <li>* In addition the CEMP does not outline monitoring and mitigation measures for works through sand dunes and does not include reference to CIRIA C584 – Coastal and Marine Environmental Site Guide, this should be addressed in the finalised ER.</li> </ul>	
	<p><b>Marine Processes</b></p> <ul style="list-style-type: none"> <li>* Technical Appendix 7.4A states that 'Any onshore infrastructure (jointing bays, etc) should be sited at least 100m behind the present day coastline at Fraserburgh and at least 200 m behind the present day coastline at Rattray Head.' The appendix does not seem to include an assessment of the likely rates of coastal retreat at the two landfall options over the lifetime of the project to support these limit, this should be included in the finalised ES.</li> </ul>	

Organisation	Summary of Response	MORL Approach
<b>Scottish Environmental Protection Agency (SEPA)</b> <b>(27/03/12)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* The maps showing the surface water features and ecological and geological designated sites (Technical Appendix 8.1A – Hydrology Technical Report Figures 9 and 10) do not seem to be included in this appendix. Are these available?</li> </ul>	<p>Addressed in Chapter 9.3. mitigation proposed to control possible impacts on water quality and catchment.</p>
	<p><b>Marine/ Wetland ecology</b></p> <ul style="list-style-type: none"> <li>* Use of the HDD technique beneath the sand dunes would be our preferred option with regard to minimising impacts to the sand dune habitats and any water dependent features (e.g. dune slacks) and maintaining dune integrity in the longer term.</li> </ul>	<p>MORL will consider this as far as possible in the Cable Route Detailed Alignment Development, and where it is not possible the mitigation measures relating to sediment control will be employed.</p>
	<ul style="list-style-type: none"> <li>* Should trenching through the dunes be taken forward as the preferred option then justification for this should be provided in the finalised ES describing how the dune habitats will be restored and the potential for erosional problems avoided in the future.</li> </ul>	
	<ul style="list-style-type: none"> <li>* SEPA requests a more precise indication of the location of the cable trench to assess impact or a commitment that these habitats will be avoided.</li> </ul>	
	<p><b>Waste management</b></p> <ul style="list-style-type: none"> <li>* The re-use of soils for backfilling excavations is acceptable. If excess soils exist that need to be spread other than from the area they were excavated then they should be directed to an appropriate Landfill or a Waste Management Licence Exemption will need to be obtained.</li> </ul>	
	<p><b>Flood risk</b></p> <ul style="list-style-type: none"> <li>* In those situations where avoidance is not an option, we would recommend storage of excavated material where possible, to be made outwith the flood plain, so that the ability of the flood plain to store and convey water would not be compromised.</li> </ul>	
	<ul style="list-style-type: none"> <li>* If it is necessary to store excavated material close to the proposed cable trench for a considerable period of time then we would recommend that a risk based approach is adopted on a site by site basis and that if the site is in a flood sensitive area such as close to houses or buildings then further analysis is undertaken.</li> </ul>	
	<ul style="list-style-type: none"> <li>* For those locations where watercourses will be disturbed we would recommend a risk approach is also adopted on a site by site basis and that if the site is in a flood sensitive area such as close to houses or buildings then further analysis of risk is made.</li> </ul>	

Organisation	Summary of Response	MORL Approach
<p><b>Scottish Environmental Protection Agency (SEPA)</b> (27/03/12) (continued)</p>	<p>* If any small buildings to house infrastructure are proposed along the cable route, consideration should be given to whether or not they lie within the Indicative River &amp; Coastal Flood Map (Scotland) and if possible be located outwith the flood plain.</p>	<p>MORL will consider this as far as possible in the Cable Route Detailed Alignment Development, and where it is not possible the mitigation measures relating to sediment control will be employed.</p>
<p><b>Royal Yachting Association (RYA)</b> (27/02/12)</p>	<p>* We had a long discussion about the matrix approach. Since then I have experienced a number of cases where I felt that the Matrix approach underplayed some important impacts. The matrix approach works well where risks are moderate and the impacts not too severe. The problem comes when impacts are potentially very severe but the possibility is assessed as low. In these cases it is easy for potentially serious impacts to be diminished. The risk of an accident like the Braer shipwreck on Shetland was very low but the impact was severe. Moreover, the risk that the impact may depend on any mitigating measure put in place. If the crew of a vessel for example is keeping a good watch as required by the ColRegs, risks of collision should be very low. However, if they are not (with reference to the MAIB case studies will demonstrate can happen) then the risks increase significantly. Finally there may be interaction between probability and impact in that it is less easy to prepare adequately for the rare events. For these reasons we support the use of a maximum credible accident scenario with an action plan for each eventuality. However, there may be a role for matrices in scoping out activities that do not need to be considered.</p> <p>* I agree with the impacts on recreational boating although there are some details that should be clarified. It is clear that some recreational craft will pass through the wind farm site and that this could be day or night. In 10.2.4.7 it is noted that 45% of the recreational craft passing through the site in the summer were picked up on AIS. Although there are no formal records of the percentage of craft equipped with AIS, the figure is much higher than is thought to be the case by RYA. Of course it may be that the vessels choosing to attempt the route are more highly equipped than cruising vessels in general. As the survey was by radar and AIS it is possible that some recreational vessels were not detected. Nevertheless, these comments invalidate the conclusions drawn. Note that the cruising routes are not advisory routes but rather the best assessment by knowledgeable sailors of where vessels normally go. The actual routes chosen will depend on wind and wave conditions at the time and whether a vessel is under power or under sail. The statements in 10. 11.4.3 sailing require to be interpreted with caution. For example, the route north to the Northern Isles is well advertised, e.g. by Sail Scotland and Orkney Islands Council even if the area is thought not to be well known. The number of berths in a marina is a global figure. It is really the number of berths for visitors that is significant as local boat owners quickly learn to adapt to changes. The 2011 publication Sailing Tourism in Scotland (downloadable from <a href="http://www.tourism-intelligence.co.uk">www.tourism-intelligence.co.uk</a>)</p>	<p>Addressed in Chapters 11.2 and associated appendices. Professional Judgement is applied in addition to the matrix approach in all significance assessments.</p> <p>Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.</p>

Organisation	Summary of Response	MORL Approach
<b>Royal Yachting Association (RYA)</b> <b>(27/02/12)</b> <b>(continued)</b>	<p>provides useful background to sailing tourism. In table 11.3.2.1 the assumptions for recreational craft include a maximum air draft of 22 m, rather than a minimum as correctly stated elsewhere in the document. Finally in section 18.2.3 it is stated that there is unlikely to be cumulative impact from all the win farms on the east coast of Scotland. It is quite possible that some skippers may be discouraged from travelling up and down the east coast of Scotland if they have to pass through several wind farm sites. Making a direct passage can be hard work, particularly if areas of activity have to be passed at night. For example, a prudent skipper will ensure there is more than one person on outlook when passing Aberdeen by night, which has implications for watch-keeping.</p>	<p>Addressed in Chapters 5.2, 8.2, 11.2 and 15.2.</p>
<b>Ness and Beaully Fisheries Trust</b> <b>(10/04/12)</b>	<p>* Marine Scotland Science regard the monitoring undertaken at existing offshore developments such as Robin Rigg as yielding unsatisfactory results in respect of fish, therefore we find the proposed lack of meaningful monitoring in the present proposals equally unsatisfactory. It is currently difficult to give a reasoned opinion on the draft assessment as there is little detailed information provided on issues such as the actual likely size of the scheme, the type of devices to be deployed and the degree of confidence attached to the assessment of impacts. As an example, the assessment as it stands suggests that the loss of sandeel habitat due to the presence of the structures will be negative, of minor-moderate magnitude and to be probable-unlikely (i.e. confidence levels are 5-95%). While we accept that some additional research will be undertaken in respect of sandeels in 2012, it is clear that the assessment as it stands is inherently weak. Similarly, the assessment of construction noise on salmon and sea trout does not instil confidence, particularly as no mitigation is proposed to offset any potential effects. We note that the SNH commissioned report on the effects of electromagnetic fields and noise on fish concludes that there is considerable uncertainty with regard to the findings of the research that has been undertaken so far and that more research is required. Given these levels of uncertainty, it is inappropriate to not fully utilise mitigation measures where they are available. Rather, we feel that a precautionary approach is advisable.</p>	<p>Addressed as far as possible in 7.2, 10.2 and 14.2.</p>
	<p>* Whilst the monitoring of sandeels pre and post construction has considerable merit in assessing impacts on the sandeel populations themselves within the development area, its use as a surrogate species for salmonids is inherently flawed given the large differences in the life cycle of salmonid and sandeel species, particularly the physiological and behavioural differences. For example, the effects of noise on a fish with a swim bladder (salmon) may well differ considerably from fish that lack a developed swim bladder (sandeels). Should the approach of monitoring what is considered to be a 'surrogate species' in sandeels reveal a decline in that species within the area will it be automatically assumed that there will be a proportionate impact on the status of salmon SAC rivers? If so, what measures will be taken to mitigate for these impacts? Additionally, what measures will be taken to ensure that the sandeel information is backed up by monitoring of adult salmon and sea trout populations in their native rivers?</p>	<p>Addressed as far as possible in 7.2, 10.2 and 14.2.</p>

Organisation	Summary of Response	MORL Approach
<p><b>Ness and Beaully Fisheries Trust</b>  <b>10/04/12</b>  <b>(continued)</b></p>	<p>* The impact assessment has been formulated without fundamental knowledge of the usage, or otherwise, of the area by salmon and sea trout as well as other key species such as sandeel and as such it is difficult to be confident in its findings as currently presented. Additionally, the results of key research programmes such as the behaviour of salmonids in relation to electromagnetic fields are not yet available while other potential impacts such as noise still remain poorly understood. In terms of the proposed mitigation, the document explicitly states that no specific mitigation is proposed for salmon and sea trout. Thus the effects of construction activities on migrating smolts, a critical period during the life history of both salmon and sea trout, is apparently not considered to be worthy of mitigation despite the fact that potential measures are available in the form of the avoidance of sensitive activities during such crucial periods. There appears to be nothing in the document to suggest that there will be any effort to obtain baseline information in respect of salmon and sea trout movements, abundance, swimming depth, feeding behaviour etc. and without this any post construction monitoring in the wind farm area would be rendered extremely difficult. Whilst the results of the assessment as they stand appear to be in accordance with those previously published by the Scottish Government <i>i.e. Habitat Regulations Appraisal of Draft Plan for Offshore Wind Energy in Scotland Territorial Waters Appropriate Assessment Review</i> we view the contents of that document as deficient in a number of key aspects and to be subordinate to other work commissioned by Government agencies. There appears to remain a fundamental contradiction between the initial scoping advice from Marine Scotland Science and the sensitivity that has been assigned to the receptors in the aforementioned document published by the Scottish Government</p>	<p>Noted.</p>
<p><b>Whale and Dolphin Conservation Society (WDCS)</b>  <b>(09/03/12)</b></p>	<p>* Recognising the considerable amount of uncertainty surrounding the acoustic threshold and behavioural data available; that a long-term analysis hasn't been completed for any cetacean species yet; and adding to this, the additional level of uncertainty surrounding population trends, movements and potential impacts; overall, we do not believe that it is possible to be as confident about the significance of impacts on cetaceans as the draft ES concludes. Some significant impacts have been identified and then dismissed without reasonable evidence.</p> <p>* Given all of these uncertainties, if developments are allowed to proceed, it is important that a well considered research monitoring strategy is in place to understand and recognise potential individual and population level impacts on both nationally and internationally important species. Further, an adaptive approach will be key in the event that unanticipated but significant impacts are observed.</p> <p>* Before considering the draft ES itself, we would like to draw your attention to the response of five world-leading marine mammal scientists to the US Arctic Ocean Draft Environmental Impact Statement (DEIS) (attached). This short statement, whilst focused on oil and gas activities in the Arctic, raises the key issues surrounding cumulative impacts, use of appropriate impact thresholds, additional baseline data and appropriate monitoring and mitigation for marine mammals, that are just as relevant for pile driving activities, including suggestions for meaningful monitoring and mitigation measures that should be more fully considered and implemented in this draft ES.</p>	<p>Addressed in Chapters 7.3, 10.3, 14.3 and Technical Appendix 7.3 A.</p> <p>Addressed in Chapters 7.3, 10.3, 14.3 and Technical Appendix 7.3 A.</p>

Organisation	Summary of Response	MORL Approach
<b>Whale and Dolphin Conservation Society (WDCS)</b> <b>(09/03/12)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* In addition, the ICES-Working Group on marine mammal ecology (WGMME) produced a "Review of the effects of wind farm construction and operation on marine mammals and provide advice on monitoring and mitigation schemes" in 2010.</li> </ul>	Noted.
	<ul style="list-style-type: none"> <li>* The draft ES appears to have made a number of assumptions in various sections, such as assuming the outcomes of the Framework for assessing impacts on harbour seal would be the same for all cetacean species without doing this work, which then allows determinations to be made about the lack of significance of activities without evidence at all in some cases.</li> </ul>	Addressed in Technical Appendices 7.3 A and 7.3 B.
	<ul style="list-style-type: none"> <li>* Minke whales are an important migratory species that reside in the Moray Firth during the summer months to forage. Baseline data collection (section 9.4.4) occurred for minke whales, however we note the low numbers recorded. It's not clear whether these low numbers are because data have been pooled to provide a population and density estimate over a whole year. This may not be appropriate for seasonal visitors like minke whales. You might expect the density estimate from the SCANS survey, which was undertaken in July when minke whales are anticipated to be in the region, to be higher than a wider analysis that includes winter months, when no minke whales are anticipated to be encountered (section 9.4.4.9).</li> </ul>	Addressed in Chapter 4.4 and Technical Appendix 4.4 A.
	<ul style="list-style-type: none"> <li>* We consider visual surveys to be an important component of ongoing monitoring work to understand potential impacts. Firstly, no studies currently exist to understand the potential impacts of wind developments for minke whales and secondly, minke whales are resident in Scottish waters seasonally and we can anticipate that they may move between the Moray Firth and the Firth of Forth developments, making it very important that we can monitor levels of potential displacement and put this in to a context of understanding both potential individual and population level impacts.</li> </ul>	Discussion provided in Technical Appendix 7.3 A.
	<ul style="list-style-type: none"> <li>* We note that it was not possible to calculate densities for any species other than harbour porpoises, which raises questions about the requirement to adequately focus research questions and resulting survey techniques.</li> </ul>	Discussion provided in Technical Appendix 7.3 A.
	<ul style="list-style-type: none"> <li>* We note that pin pile foundations or gravity based structures are planned (section 1.3.2) for the wind turbines and the potential offshore transmission infrastructure. We acknowledge that monopoles will not be used. It is our hope that this will reduce the noise levels during construction. However the diameter of the pin piles is still considerable and so noise levels can be anticipated to be an issue. Noise levels during construction remains a key concern and, as a very minimum, should be monitored. All noise modelling should be ground-truthed.</li> </ul>	Noted.
	<ul style="list-style-type: none"> <li>* Crown Estate recently held a workshop on Marine Mammals and Noise at the Royal Society in London and many presenters, including scientists and industry representatives, highlighted alternatives to pile driving as being desirable. WDCS advocates alternatives to pile driving.</li> </ul>	Noted.

Organisation	Summary of Response	MORL Approach
<b>Whale and Dolphin Conservation Society (WDCS)</b> <b>(09/03/12)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* Given the development size and considerable time-span for construction of this whole development, long term population impacts are a considerable issue. Whilst we have reasonable population estimates for harbour seals and bottlenose dolphins, there is considerable uncertainty about the distribution and population parameters of other species, including minke whales and harbour porpoises.</li> </ul>	Noted.
	<ul style="list-style-type: none"> <li>* We acknowledge that an EPS licence is being applied for. We concur that a HRA should be undertaken (section 2.4) and should include bottlenose dolphins and harbour seals.</li> </ul>	Addressed in Chapters 7.3, 10.3, 14.3 and Technical Appendices 7.3 G and 7.3 H.
	<ul style="list-style-type: none"> <li>* Some serious questions remain about appropriate and effective mitigation measures. Table 11.2.3.8 identified soft start as the only management measure for marine mammals during construction. The effectiveness of soft start has not been tested. Further, soft start is a management measure and is not a mitigation measure, unless it leads to shutting down the sound source once an animal enters a pre-determined radius of the source. Once again we draw your attention to the US scientists' response to the Arctic DEIS, as mentioned above.</li> </ul>	Discussion provided in Chapters 7.3, 10.3, 14.3 and Technical Appendix 7.3 A.
	<ul style="list-style-type: none"> <li>* In addition, recent publications on the potential impacts of intense noise sources on baleen species require serious consideration, especially as no data currently exists on impacts of pile driving. A JNCC published study reported that "studies have indicated some level of stress, with alterations in surfacing, respiration and dive cycles being observed in mysticetes in response to the use of seismic airguns, sometimes at considerable distances from the source. Although effects of active airguns on the physiology of the mysticetes found around the UK are largely unknown, in one study, shorter blow intervals indicated an increase in the respiration rate of fin whales within 1km of the airguns during periods of shooting". More recently, for two days after the 9/11 attacks in the US, shipping traffic ground to a halt in the Bay of Fundy, Canada, and underwater noise fell by six decibels. During that time, stress-hormone levels in endangered north Atlantic right whales there were lower than in readings taken during September in the following four years. The implications of similar impacts as a result of continuous pile driving in primary foraging habitat cannot be known but should be considered.</li> </ul>	Discussion provided in Chapters 7.3, 10.3, 14.3 and Technical Appendix 7.3 A.
	<ul style="list-style-type: none"> <li>* Construction is anticipated to span a continuous six year period, with overlap at two or three sites during construction. This provides no opportunity for broad scale management, such as seasonal restrictions, to minimise impacts on seasonal visitors, especially minke whales.</li> </ul>	Discussion provided in Chapters 7.3, 10.3, 14.3 and Technical Appendix 7.3 A.
	<ul style="list-style-type: none"> <li>* In section 7.6.4.7 we acknowledge that avoidance is an important behavioural impact to be considered. It may not be the most significant, as is reported in the draft ES, however it may be the most likely to be observable and measurable. Separation of a mother and calf may also have a serious consequence, for example, but would be much more difficult to monitor.</li> </ul>	

Organisation	Summary of Response	MORL Approach
<p><b>Whale and Dolphin Conservation Society (WDCS)</b> <b>(09/03/12)</b> <b>(continued)</b></p>	<p>* More generally, we note the considerable uncertainty surrounding the thresholds developed by Southall, Nedwell and others. Since the introduction of these criteria more research has increased our understanding and highlighted the sensitivities of some species, predominantly harbour porpoises. On the other hand, we are never likely to increase our knowledge base of auditory impacts for baleen whales, including minke whales. This was also a subject of much discussion at the Crown Estate workshop. Given the considerable time-span of construction, it would be appropriate to ensure an adaptive approach to desk-based review of current literature and impact monitoring to ensure that they remain adequate to offer strict protection to European Protected Species, including cetaceans, and to meet other legal requirements.</p>	<p>Noted.</p>
	<p>* Whilst there has been some research in other parts of Europe on the impacts of pile driving on harbour porpoises, none exists for minke whales. The Moray Firth is a primary foraging area for minke whales and the impacts on them are not known at all. They should remain a focus of attention. An adaptive approach to monitoring and mitigation within the lifespan of construction is vital.</p>	<p>Noted.</p>
	<p>* For clarity, the tables in this section would benefit from clearer labelling. Does 'impact' refer to behavioural impact or injurious impact? It's not clear if it's the same in all tables in this section.</p>	<p>Noted.</p>
	<p>* Section 7.6.5 discusses the cumulative impact of cumulative noise exposure during multiple piling at the same time. However, it doesn't consider the cumulative piling over the lifespan of up to six years of the site construction activity. This is a critical and necessary assessment.</p>	<p>Discussion provided in Chapters 7.3, 10.3, 14.3 and Technical Appendix 7.3 A.</p>
	<p>* Tables 11.2.3.1/13.2.3.1/1.1 (of Appendix 11.2.3A) include stranding as a result of EMF. However minke whale strandings have been associated with intense noise pollution on a number of occasions in various parts of the world, largely in multi-species strandings. Whilst these have been during documented use of military sonar, and there is no evidence as yet of stranding associated with pile driving, minke whales are clearly vulnerable to intense noise pollution and it would be premature at this stage to rule it out (including in Table 11.2.3.4).</p>	
	<p>* Section 11.2.3.4 suggests that operating the JNCC guidelines will be adequate to mitigate six years of continuous pile driving. As stated above, we do not agree with this.</p> <p>* Section 13.2.3.3 states no impacts for offshore transmission too.</p> <p>* We note in Table 11.2.3.9 that some bottlenose dolphin data will be included at a later date.</p>	
<p>* Section 11.2.3.8 states that "papers on Permanent Threshold Shift assessment criteria and the seal assessment framework will be revised to incorporate relevant feedback and comments from stakeholder and scientific colleagues as appropriate. This revision may include updating of the rationale for applicability of the seal assessment framework to other species;" We have provided detailed comments on this framework below.</p>		

Organisation	Summary of Response	MORL Approach
<b>Whale and Dolphin Conservation Society (WDCS)</b> <b>(09/03/12)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* Section 17.3 on cumulative assessment. Seal culls may need to be included in cumulative assessment as PBR quotas for some sites, including in the Moray Firth, as we understand they are at a maximum.</li> </ul>	<p>Discussion provided in Chapters 7.3, 10.3, 14.3 and Technical Appendix 7.3 A.</p>
	<ul style="list-style-type: none"> <li>* There is evidence of movement of minke whales from the west to east coast, therefore displacement of minke whales from east coast development sites might mean that whales move around to the west coast to forage. As a result, west coast developments, including wave and tidal devices should also be considered in the cumulative assessment (section 17.3.1).</li> </ul>	
	<p><b>Appendix 11.2.3A</b></p> <ul style="list-style-type: none"> <li>* The definition of short term (Appendix 11.2.3A) is somewhat misleading in that construction might last for six years. The maximum longevity of a harbour porpoise in the UK is reported to be about 24 years (Lockyer, 1995), whereas most don't live longer than 10 years (Jefferson et al, 2008). Impacts that could span for half an animal's life could not be considered short-term.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Table 4.3 appears to calculate that between 84-89% of minke whales encountered will be impacted by pile driving in year 1. It's unclear whether this impact is assumed to be behavioural or injury.</li> </ul>	
	<ul style="list-style-type: none"> <li>* We look forward to seeing the results of the impact modelling for the bottlenose dolphin (4.2.2.3).</li> </ul>	
	<ul style="list-style-type: none"> <li>* We are concerned about this statement which seems to have no basis in evidence "It is proposed that, if appropriate information were available to perform similar population prediction models for grey seal, porpoises and minke whale (assuming they have at least a similar life span as harbour seals, if not longer), the outputs would produce similar results in that impacts would be temporary and the population would recover once the source of the disturbance was removed."</li> </ul>	
	<ul style="list-style-type: none"> <li>* This information is not available and as a result, we do not believe it is possible with any certainty to agree with the following conclusion of this section "In conclusion, the potential impacts on harbour seals, grey seals, porpoise and minke whales from increased noise due to piling are predicted to be significant, but temporary and reversible in nature, and thus not significant to the long term viability of the populations." No evidence is provided to support this conclusion.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Section 4.2.3 (assessment of significance) seems to be based on no evidence at all and yet the conclusion of this section is key to the whole assessment of impact. Section 7.1.1 links back to Section 4.2.3 to demonstrate the same result, but again without any basis in evidence at all.</li> <li>* As we discuss in detail below in comments on Appendix 11.2.3C we disagree with section 7.1.1. Where PTS is used. Where pile driving will be occurring continuously for a number of years, there is the potential for damage from PTS from repeated exposure to TTS. This is therefore a more appropriate threshold to use</li> </ul>	

Organisation	Summary of Response	MORL Approach
<b>Whale and Dolphin Conservation Society (WDCS)</b> <b>(09/03/12)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* We note in Table 7.2 that a large percentage of the harbour seal population are anticipated to be displaced from the area due to pile driving (56-68%). These figures are even higher for harbour porpoises (83-88%) and minke whales (84-90%), yet no efforts are made to link these significant impacts over considerable time frames, to the overall draft ES finding of “no significant impact”. The links are tenuous at best.</li> </ul>	<p>Discussion provided in Chapters 7.3, 10.3, 14.3 and Technical Appendix 7.3 A.</p>
	<ul style="list-style-type: none"> <li>* We are not confident that there will be no physical injuries as a result of pile driving activities for any of the species listed, especially considering that soft start is the only management measures considered. We acknowledge that the developer has discussed mitigation with the Crown Estate but note that no mitigation at all is planned as far as we can tell from the draft ES.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Given the levels of uncertainty surrounding the proposed framework, we are not certain that such confidence in the long term projection is warranted.</li> </ul>	
	<ul style="list-style-type: none"> <li>* We do not believe it is possible, based on existing evidence to agree with the following conclusions of the cumulative impacts section with any certainty. For example, “In conclusion, the cumulative population impacts of the three MORL sites and those predicted to arise from other offshore projects identified within this assessment are considered significant during the construction periods, but temporary and reversible in all cases and thus not significant to the long term viability of the populations.” This is based on almost no evidence at all.</li> </ul>	
	<ul style="list-style-type: none"> <li>* In addition, in section 7.1.2, some of the migratory species that can be expected to be encountered are not restricted to the Moray Firth and so we are pleased to see cumulative impacts consider developments beyond this area. However the assessment does not include some nationally important species, including minke whales and harbour porpoise, which are both EPS and species that can be anticipated to move between these two regions for foraging behaviour. The assessment should consider these two species.</li> </ul>	
	<p><b>Appendix 11.2.3C (Appendix B in the Final ES)</b></p>	<p>Discussion provided in Technical Appendix 7.3 A and 7.3 B.</p>
	<ul style="list-style-type: none"> <li>* In general WDCS support this approach to understand long term impacts (not withstanding a requirement to protect individual animals in the vicinity of activities). However we have serious concerns about some of the considerable data gaps and resulting limitations and assumptions (which are acknowledged within the document).</li> <li>* Given that this is such novel work, and if such an approach is likely to be used, it would benefit from peer-review. Doing so might also assist in the development of this long-term approach, where appropriate, more widely across regions.</li> </ul>	

Organisation	Summary of Response	MORL Approach
<b>Whale and Dolphin Conservation Society (WDCS)</b> <b>(09/03/12)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* We draw your attention to Reichmuth (2009) and Kastak (2008), which may be important references even though they are not formally published. PTS was accidentally induced to this very species (a harbour seal) at a maximum received sound pressure of 184 dB re 1 microPa with a duration of 60 s, so a SEL of 202 dB re 1 microPa/s. With the experimental results from one seal's PTS, the 202 dB SEL would, according to the figure on p. 21, have a probability of occurring at .01. Further, it's disturbing that this seal suffered PTS without any warning at all, indicating a threshold function with no advance notice.</li> </ul>	<p>Discussion provided in Technical Appendix 7.3 A and 7.3 B.</p>
	<ul style="list-style-type: none"> <li>* This seal suffered PTS with a pure tone, rather than an impulsive sound, but this is the only real data that exists. To be precautionary that value should be used, unless it can be demonstrated that the same wouldn't have occurred with an impulsive sound. Moreover, if one would prefer to limit oneself to airgun data only, then a TTS onset level of 164.3 dB re 1 microPa2.s for harbour porpoise should be used (Lucke et al., 2009).</li> </ul>	
	<ul style="list-style-type: none"> <li>* dB(ht) is likely not appropriate to use for injury. The idea behind dB(ht) is that animals are sensitive at different frequencies, so their audiogram should be used to calculate injury. However, the curve for injury is not dependent on an animal's audiogram. The injury curve is flattened across frequencies, since when a sound is loud enough, it doesn't matter as much how sensitive an animal is at that frequency (Fletcher and Munson, 1933).</li> </ul>	
	<ul style="list-style-type: none"> <li>* Moreover, an audiogram-based frequency weighting function like dB (ht) would mean that baleen whales are 20-30 dB more sensitive to TTS at lower frequencies than mid-frequency specialists, which seems implausible, given the limited data that do exist, <i>i.e.</i> there is too much filtering with this method at lower frequencies.</li> </ul>	
	<ul style="list-style-type: none"> <li>* The values for intensity that cause PTS are too high. Gedamke (2011) is useful in this regard. Here the authors show what the consequences of inaccuracy in assumptions regarding acoustic sensitivity can look like.</li> </ul>	
	<ul style="list-style-type: none"> <li>* More generally, TTS should be used to consider long-term (as well as short term) effects rather than PTS that is used, as repeated TTS may lead to PTS. In addition, the use of TTS will lead to less uncertainty because more data are available.</li> </ul>	
	<ul style="list-style-type: none"> <li>* Appendix 11.2.3C assumes that "potentially major impacts at close range, will be mitigated against using standard procedures." And also that "assume that any risk of direct mortality can be avoided by mitigation". However we highlight that, largely, mitigation measures are not tested and are not known to be effective around piling activities for all species concerned. There will therefore need to be a detailed study to investigate and ground-truth this assumption.</li> </ul>	
	<ul style="list-style-type: none"> <li>* We note that the pile diameter used in the Beatrice demonstrator scheme was 1.8m (section 3.2.1) and that the pile diameter for pin piles in the current development is anticipated to be larger. As a consequence, resulting sound exposure may be expected to be higher.</li> </ul>	

Organisation	Summary of Response	MORL Approach
<b>Whale and Dolphin Conservation Society (WDCS)</b> <b>(09/03/12)</b> <b>(continued)</b>	<ul style="list-style-type: none"> <li>* Appendix 11.2.3C relates largely to harbour seals. Whilst section 3.5.3 of the Appendix discussed the application of the framework to bottlenose dolphins and harbour seals, it doesn't discuss displacement or auditory impacts on minke whales. It's therefore unclear how Table 11.2.3.6 can determine the potential impacts as being not significant to long term viability. This is a considerable flaw in the draft ES.</li> </ul>	<p>Discussion provided in Technical Appendices 7.3A and 7.3B.</p>
	<ul style="list-style-type: none"> <li>* We wonder if it would be challenging to apply the model to those species whose distribution is uncertain, or extends beyond the Moray Firth (whereas the harbour seals are assumed to match the Marine Scotland seal management area) and there the dose-response relationship is unknown (given that these are key components in the flow diagram in Figure 1).</li> </ul>	
	<ul style="list-style-type: none"> <li>* We agree with the conclusions in the report that "There is also a critical need for better data on recovery times after these displacements, particularly as these will affect the cumulative extent of displacement throughout a season of intermittent piling." And would further this by suggesting that the government and Crown Estate should be considering wider regional impacts from one site to the next (i.e. impacts of simultaneous displacement from Moray Firth and Firth of Forth).</li> </ul>	
	<ul style="list-style-type: none"> <li>* Finally, no consideration was given to impacts on prey in the vicinity of the development. In particular, many fish species are sensitive to particle motion, which may be considerable in proximity to the pile driving activity. This is a critical component of assessment that will have a bearing on long term health of marine mammal populations that are currently little known.</li> </ul>	
	<ul style="list-style-type: none"> <li>* In summary, whilst we support the approach, as the report itself states, great care is required regarding available data and as a result, appropriate data to input and resulting outputs. If this approach is taken forward, a commitment should be required to ground-truth the population modelling projections for the life-time of the development. This would require a long term monitoring strategy (as the report suggests in section 3.5) that enables understanding of sufficient power to provide robust assessments of population status. Given the small population size and protected status of this population, there needs to be a commitment to an adaptive approach should the model turn out to be inaccurate within the time-frame.</li> </ul>	

## 1.4 Stakeholder Consultation

### 1.4.1 Introduction

- 1.4.1.1 This chapter details the public stakeholder engagement carried out to support the consent applications. Details of stakeholder engagement specific to each receptor are included in each impact assessment chapter (Chapters 6 to 11).
- 1.4.1.2 Technical Appendices relating to this Chapter include:
- Grouped Stakeholder List (Technical Appendix 1.4 A);
  - Stakeholder Engagement Strategy (Technical Appendix 1.4 B);
  - Stakeholder Meetings (Technical Appendix 1.4 C);
  - Results of Opinion Survey (Technical Appendix 1.4 D);
  - Media Releases (Technical Appendix 1.4 E); and
  - Summary Responses to Draft Environmental Statement Consultation (Technical Appendix 1.4 F).

### 1.4.2 The EIA Process and Pre-Application Consultation

#### Consultation Procedure

- 1.4.2.1 The development of offshore wind is a new type of activity in Scotland, involving a significant deployment of technology in locations, often far from shore, which have not previously been subject to development.
- 1.4.2.2 As a consequence, some of the current regulations surrounding the licensing and consenting of such activities were not fully developed at the time when the Crown Estate Commissioners first granted MORL development rights in January 2010.
- 1.4.2.3 Scotland has had some previous experience of licensing offshore wind development at Robin Rigg in the Solway Firth, and although the Environmental Impact Assessment procedure provided the framework for development, in that instance, the developers required new private primary legislation in the Scottish Parliament (enacted in 2003) in order to address certain issues with respect to navigation.
- 1.4.2.4 The aspirations of the Scottish Government for commercial scale development of offshore wind energy has led to significant changes to the licensing and regulatory regime to enable consents to be sought and delivered in a more efficient manner, without recourse to primary legislation. This in turn has changed the focus of public engagement. The development of the new licensing regime has come at the same time as the development of the MORL project. The most significant elements are detailed below:
1. The Energy Act of 2004, at Section 99 amends Section 36 of the Electricity Act 1989 to allow the Scottish Ministers to extinguish navigational rights under order. This provision avoids an offshore wind farm having to secure private primary legislation. Consequently, the engagement activities within

and outwith Parliament, which are required as part of the private bill process, are not required.

2. In terms of the Marine (Scotland) Act 2010, from 6 April 2011 the Scottish Ministers became responsible for the new marine licensing system for activities carried out in the Scottish inshore waters from 0 – 12 nautical miles (nm). Under the Marine and Coastal Access Act 2009, the Scottish Ministers also became the licensing and enforcement authority for the Scottish offshore region (from 12 to 200 nm) other than in respect of reserved matters. These functions are carried out by Marine Scotland, part of the Scottish Government.
3. The Marine (Scotland) Act (2010) made certain provisions (in Sections 22 to 24) for pre application consultation for various classes of marine licensable activity.

1.4.2.5 The following summarises the framework for pre-application consultation and engagement under the relevant consenting legislation for the Project:

1. For offshore development activities outwith 12 nm, Marine Scotland act on behalf of Scottish Ministers in administering applications for consents. In this respect, they are also responsible for determining statutory consultees.
2. For offshore developments within 12 nm, the Electricity Works (Environmental Impact Regulations) (Scotland) 2000 provide guidance for engagement with stakeholders, in particular, Regulation 9 provides for publication of press notices, following submission of an application, to notify the public that an application has been made which is accompanied by an Environmental Statement and to provide details as to where the Environmental Statement can be inspected. Regulation 11 provides for the provision of information to consultative bodies by the Scottish Ministers following receipt of an application. There are no pre-application requirements.
3. Under the Marine Works (Environmental Impact Assessment) Regulations 2007 there are regulations requiring the appropriate authority either to publicise the receipt of the application and ES, and to send copies to relevant consultees, or to issue a direction to the applicant requiring the applicant to do so (see regulations 16 and 17). There are no pre-application consultation requirements.
4. The Scottish Government's Electricity Act Section 36 Guidance Notes (paragraph 2.2.1) suggests that engagement should be guided by the Government's Planning Advice Note (PAN81). This was superseded by PAN3 / 2010, which sets out Scottish Government policy on community engagement. PAN3 / 2010 is the relevant guidance for applications for planning permission made under the Town and Country Planning (Scotland) Act 1997 (see below). PAN3 / 2010 contains 12 standards for effective community engagement.
5. The Town and Country Planning (Development Management) (Scotland) Regulations 2008 (made under the Planning etc.) (Scotland) Act 2006) require that certain prescribed public consultation activities required to be undertaken to the satisfaction of local planning authorities for national development and major development. Note that these regulations relate only to onshore works. These regulations require the prospective applicant to consult every community council, any part of whose area is within or adjoins the land where the proposed development is situated, and in doing

so is to give a copy of the proposal of application notice to such community council. Applicants must hold at least one public event where members of the public may make comments to the prospective applicant as regards the proposed development; and publish in a local newspaper circulating in the locality details of the application, the public consultation event and details of where representations about the proposed development may be sent. A pre-application consultation report must also be published for major or national development, in which applicants must report how they have responded to comments made and whether proposals have changed as a result of consultation.

- 1.4.2.6 However, it is significant to note that at the time of application, unless an applicant is specifically required by the Scottish Ministers to notify and consult in terms of Section 23(6) of the 2010 Act, public engagement activity is driven by the EIA regulations.
- 1.4.2.7 These regulations provided a minimum requirement for offshore development in terms of the EIA process, including publication of and consultation on the EIA Scoping Report, and publication of the Environmental Statement associated with the application. Onshore aspects of the development are addressed separately.
- 1.4.2.8 MORL recognised that these regulations provided a minimum standard and that PAN81 provided details of key principles of engagement as have been used in Scotland for onshore developments for many years.
- 1.4.2.9 Early in 2010, six months prior to the publication of the EIA Scoping Report, MORL developed an engagement strategy which aimed to set high standards of engagement using best practice from our onshore experience, from experience from the Beatrice Demonstrator Project and from PAN81. This strategy aimed to tie engagement closely to the EIA process in order to ensure that public engagement was always linked to project development.
- 1.4.2.10 In April 2011, Marine Scotland published Renewable Consenting Guidance (Marine Scotland Topic Sheet 10), which includes interaction between the EIA and consenting processes and public engagement. Despite both strategies evolving separately and under different timescales, most elements of public engagement are common to both.

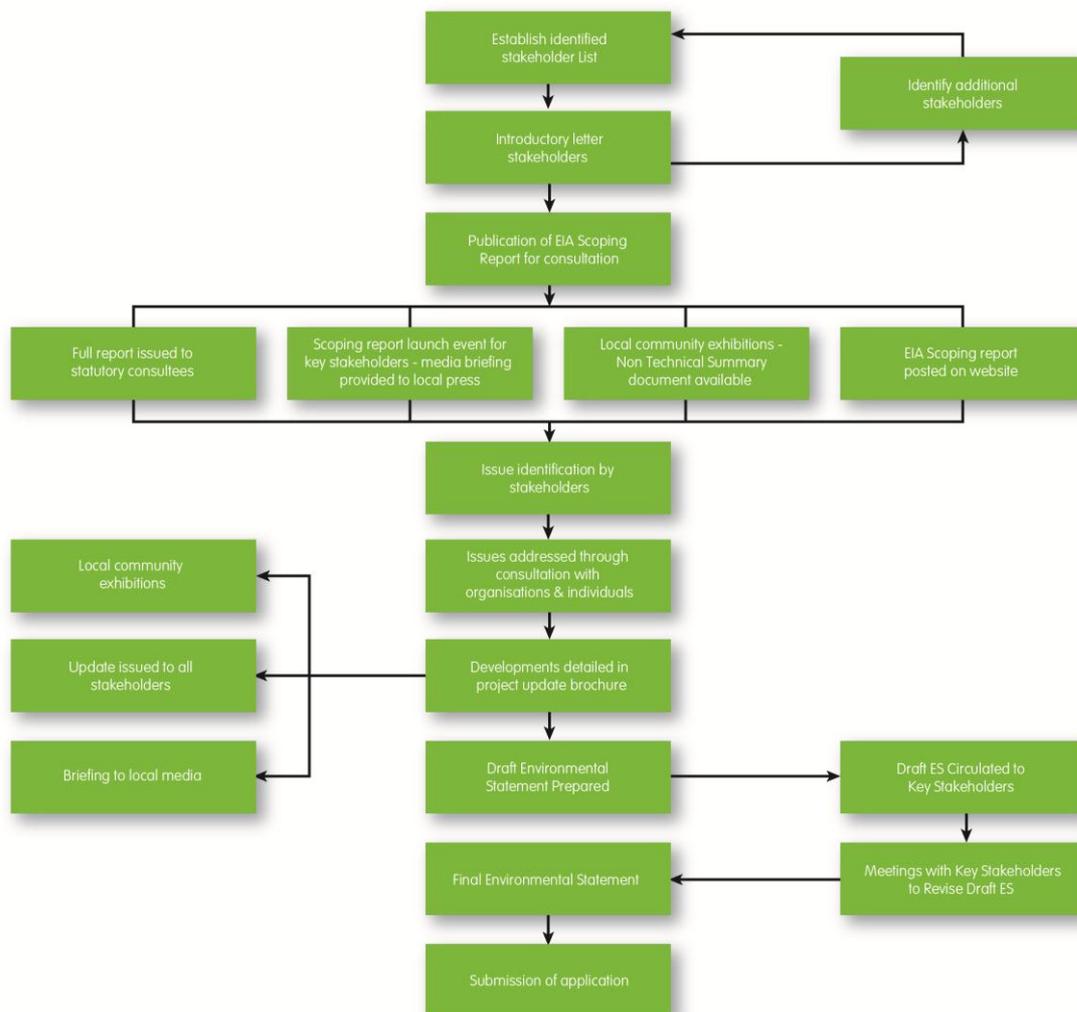
### Principles of Engagement

- 1.4.2.11 MORL recognises that the proposed development of three offshore wind farms in the outer Moray Firth represents the introduction of new types of infrastructure, as well as modification of infrastructure commonly used in the Oil and Gas industry, on an industrial scale, into the marine environment. From the outset, it was determined that the Project should progress through working with the organisations, individuals and communities who have an interest in the Project, whether as a result of their activities or their location. The aim was to enable the development of offshore wind in the outer Moray Firth to benefit from the considerable experience of the communities who live and work there, and to allow the Project to develop with the involvement of the individuals and organisations affected by and interested in the development. A commitment was made that development should be something that is undertaken with, rather than to, the communities on which the Project effects.

- 1.4.2.12 The location and nature of development demands that a large stakeholder base was considered, and throughout the Project, the EIA process was used to engage with as broad a range of stakeholders as possible. The stakeholder engagement work was undertaken by MORL on behalf of the SPVs, giving a direct link between developer and stakeholders. Engagement activities are planned to continue post submission through consent, construction, and operation.

### **Stakeholder Engagement Strategy**

- 1.4.2.13 In January 2010, The Crown Estate announced MORL as development partner for Zone 1, and as an early priority, MORL published a Stakeholder Engagement Strategy in April 2010 (see Technical Appendix 1.4 B).
- 1.4.2.14 The strategy recognised that the proposed development was significantly different from conventional onshore projects, and that the then current community engagement advice (PAN-81) pre-dated offshore wind development and the new challenges this brings. Although, in Scotland, there is no statutory requirement for broader stakeholder engagement for projects of this nature, the principles contained within PAN81 were adopted by MORL. PAN81 was superseded by PAN03 / 2010, and the strategy and activities were reviewed in consideration of the new advice. The principles of openness, accountability and transparency form the basis of MORL's stakeholder engagement strategy; however the geography and nature of the Projects demanded that new deployment tactics be developed to deliver these principles against a stakeholder geography, that is much wider than is usually associated with conventional infrastructure projects.
- 1.4.2.15 In order to ensure that stakeholder engagement is meaningful to the development of the Project, and that stakeholders were kept fully informed of the development process, the Engagement Strategy was closely linked to the EIA process. This allowed for both input from and feedback to stakeholders through the establishment and maintenance of relationships with stakeholders on an individual, organisational and community level, requiring different approaches to maximise involvement opportunities.
- 1.4.2.16 Plate 1.4-1 below provides details of the interactions between the EIA process and stakeholder engagement activities. Different stakeholder groups require different approaches and the development of different relationships, and the provision of information in a format which is accessible.



**Plate 1.4-1 The EIA Process & Engagement Activities**

### 1.4.3 Public Engagement

1.4.3.1 In order to deliver effective public engagement to match MORL's commitments to openness, accountability and accessibility, two separate programmes of public engagement were planned and executed, each performing a distinctive function:

- Autumn 2010 – Scoping Consultation; and
- Winter 2011– Pre-application Consultation.

1.4.3.2 The first of these, the Scoping Consultation, was intended to introduce the concept of the Project to the general public and to provide the opportunity to consult on the concept. It was undertaken at a time before the many studies which inform the EIA had been undertaken and provided an opportunity to scope the EIA. By nature, however, the availability of information about the Project was limited at this early stage.

1.4.3.3 The second programme, the Pre-application Consultation, was intended to provide additional information about the Project taking guidance from those areas identified as of interest to the public during the Scoping Consultation.

1.4.3.4 Both were intended to raise public awareness of the Project and of the consenting process. The public were given the opportunity to record their views on the Project throughout.

1.4.3.5 The programmes of engagement focussed on the offshore generation infrastructure works. Although outline proposals for the onshore transmission works have been introduced to the public, a full programme of public engagement for this aspect of the Project will be undertaken (with activities geographically focussed accordingly) when the precise location of the onshore substation(s) and export cable within the onshore cable route are finalised, following agreement with the landowners once a master plan for the substation compound owned by SSE and Scottish Enterprise has been completed.

### **Public Engagement – Scoping Consultation**

1.4.3.6 The publication of the EIA Scoping Report represented the first opportunity to formally place details of the Project and its likely effects in the public domain. In recognition of the significance of this document, a Communications Plan to support the publication of the Scoping Report was developed to deliver the following aims and objectives:

- To ensure that there was a broad awareness among stakeholders and communities of the Scoping Report consultation;
- To identify issues which should be addressed before the consent application was made;
- To analyse and establish support for the Project; and
- To involve stakeholders at an early stage in the consultation procedure, affording a greater sense of participation, and taking the opportunity to develop positive relationships early on.

1.4.3.7 The Scoping Report was a key document in establishing the nature of the generating station element of the Project and its potential effect on different receptors. It provided the basis of all information about the Project placed in the public domain. The 12 week public consultation period on the Scoping Report commenced on 20 August 2010. Although a group of approximately 20 statutory stakeholders was identified by Marine Scotland for the consenting process, MORL recognised that for the Project to be developed, with the engagement of the individuals and organisations whom it could potentially affect, a much broader involvement would be required.

### **Post Scoping Engagement**

1.4.3.8 The Scoping process provided the basis for identification of issues across the range of stakeholder groups and involved engagement with both statutory and non-statutory organisations. This engagement was followed through the development of relationships between the Project and the range of external stakeholders. These are detailed in Technical Appendix 1.4 C.

## Key Activities

- 1.4.3.9 To deliver these aims and objectives, the Communications Plan contained the following seven key activities:
- Development of a non technical summary to provide accessible information to key stakeholders;
  - Launch event for key stakeholders (20 August 2010);
  - Advertisement of Scoping Report consultation in local press (Commencing 20 August 2010);
  - Media release of Scoping Report launch (20 August 2010);
  - Series of 13 public local consultation events (30 August – 17 September 2010);
  - Scoping Report or Non Technical Summary of Scoping Report mailed to approximately 500 stakeholders as appropriate; and
  - Public opinion testing via survey cards.

### Scoping Report – Non Technical Summary

- 1.4.3.10 It was recognised that the Scoping Report is a detailed and technical document, written for the primary purpose of allowing specialist organisations to make recommendations about the scope of the EIA procedure. Consequently it was not suitable for allowing and encouraging a broader range of individuals and organisations, without a technical background, to engage with the Project.
- 1.4.3.11 A Non Technical Summary of the Scoping Report was produced. In order to meet MORLs commitment to accessibility, this document was not presented in the format of a conventional report. Instead it was produced as a 12–page illustrated glossy brochure, intended to appeal to as broad an audience as possible, and to provide information to those with no technical knowledge of generation or offshore projects.
- 1.4.3.12 A paper copy of the Non Technical Summary was sent to approximately 500 stakeholders, including local yacht clubs, councillors, Members of the Scottish Parliament, environmental, sporting and economic development organisations who were invited to participate in the consultation process.

### Scoping Report – Launch Event

- 1.4.3.13 Publication of the Scoping Report provided the opportunity to formally introduce the Project to statutory and non statutory stakeholders, and to the public. A formal event launch was held, to which all identified stakeholder groups, organisations and individuals were invited.
- 1.4.3.14 Thirty-seven stakeholders attended, ranging from representatives from Marine Scotland, elected councillors and MSPs, environmental and economic development organisations and members of local recreational groups.
- 1.4.3.15 A presentation was given by senior project representatives to outline proposals and future opportunities for consultation.

## Public Exhibitions

- 1.4.3.16 In order to raise public awareness, and to provide opportunities for members of the public to raise questions directly with members of the Project team, a series of 13 public exhibitions were held across the Moray Firth Area.
- 1.4.3.17 The Beatrice Offshore Wind Farm Project is immediately adjacent to the MORL zone, and is being developed in a similar time scale to Telford, Stevenson and MacColl (although the BOWL project is slightly more advanced in timescales). After discussion, the opportunity for co-operation on the issue of public consultation was identified, and it was agreed that, in order to minimise stakeholder fatigue and to provide clarity to stakeholders, a number of the public exhibitions would be held jointly, with representation from both projects.
- 1.4.3.18 Thirteen public exhibitions were held, see Table 1.4-1 below. Those indicated with an asterisk were attended by BOWL as well as MORL.

**Table 1.4-1 Public Exhibitions**

20 August 2010	Launch Event, Inverness, (Invited Stakeholders Only)
31 August 2010	Wick (Mackay's hotel)*
1 September 2010	Helmsdale (Community Centre)*
2 September 2010	Brora (Marine Hotel)*
3 September 2010	Tain (Royal Hotel)
6 September 2010	Fortrose (Leisure Centre)
7 September 2010	Inverness (Eastgate Shopping Centre)*
8 September 2010	Invergordon (Community Centre)
9 September 2010	Inverness (Eastgate Shopping Centre)
13 September 2010	Peterhead (Palace Hotel)
14 September 2010	Banff (Fife Lodge Hotel)
15 September 2010	Fraserburgh (Leisure Centre)*
16 September 2010	Elgin (St Giles Shopping Centre)*
**11 October 2010	Buckie (Town House)
(** additional event organised at request of local councillors)	

- 1.4.3.19 Including the launch event, MORL staff had one-to-one discussions with in excess of 750 members of the public.
- 1.4.3.20 Each engagement event ran from 12 noon until 8pm to provide as broad access as possible to the Project and the events, and was staffed by a cross section of members from all disciplines of the Project team. In total, some 114 hours of community engagement were undertaken in each of the major population centres over a coastline of some 200 miles (300 km).

- 1.4.3.21 Feedback from members of the public was broadly positive and supportive.
- 1.4.3.22 As a result of the nature and location of the three proposed wind farms, in terms of geography, this was the largest community engagement exercise for an infrastructure project which has been carried out in Scotland under the current regulations. It is comparable only with consultation for the new proposed High Speed Rail Link in England, in terms of its scale.

#### Advertising

- 1.4.3.23 The scoping consultation and the public exhibitions were advertised through local newspapers. Half-page, full colour adverts were placed in the following publications one week prior to the public exhibition taking place (see Table 1.4-2 below).

**Table 1.4-2 Advertisements**

John O Groats Journal	Friday 27 August 2010
Inverness Courier	Friday 3 September 2010
Banffshire Journal	Tuesday 7 September 2010
Peterhead Buchan Observer	Tuesday 7 September 2010
Fraserburgh Herald	Thursday 9 September 2010
Northern Scot	Friday 10 September 2010

- 1.4.3.24 Further half-page full colour adverts were placed in the Aberdeen Press and Journal (one of Scotland's four national daily broadsheets) on three consecutive weeks:
- Friday 27 August 2010;
  - Friday 3 September 2010; and
  - Friday 10 September 2010.

#### Media Coverage

- 1.4.3.25 In order to maximise the Project exposure to the general public, a pro-active press approach was adopted for the Scoping Report Launch.
- 1.4.3.26 This strategy was executed by issuing a news release to 20 journalists and media organisations local to the Moray Firth. The release was issued on 20<sup>th</sup> August 2010 to coincide with the launch of the Scoping Document, although journalists were not invited to the scoping launch event.
- 1.4.3.27 Over the course of the consultation events, the Press and Journal, and various local reporters and photographers attended the consultation events without specific press invitation, and appropriate press comment was offered to meet their demands at these events.

## Local Media

1.4.3.28 The Project received a significant amount of coverage in the local media, including front page on the Northern Times and the Banffshire Journal.

## National Media

1.4.3.29 Broadcast media also covered the Scoping Report Launch and supporting events, Project Director, Dan Finch was interviewed by BBC Radio Scotland for their Newsdrive Programme on 20<sup>th</sup> August 2010 at their Inverness studio, and a news page on MORL was included on the BBC website.

1.4.3.30 The consultation events have also provided a platform to develop an ongoing relationship with the Press and Journal (the Aberdeen based Scottish daily National Broadsheet, circulation 77,000, and the Project and consultation was covered in a series of four articles, including front page in early September.

## Project Website

1.4.3.31 A dedicated Project website, which included all public-domain Project documents, and all news releases, was established at [www.morayoffshorerenewables.com](http://www.morayoffshorerenewables.com).

### **1.4.4 Pre-Application Consultation (Winter 2011)**

1.4.4.1 In order to meet our strategic engagement aims, and to return to local stakeholders with developed information about the Project, a programme of pre-application engagement was delivered in November and December of 2011.

1.4.4.2 In the period since the first programme of public engagement, considerable progress had been made in both environmental assessment and engineering development, allowing more detailed and specific information to be provided to the general public in advance of the Project being submitted for consent.

1.4.4.3 The key activities of the pre-application consultation included:

- Publication of a 'Project Update Brochure';
- Additional Series of Public Exhibitions;
- Development of a computer model of landscape and visuals; and
- Publication of a Draft Environmental Statement.

### **Pre-Application Public Engagement Activities**

1.4.4.4 As a result of the opinion survey undertaken during the Scoping Report Consultation, it was found that two areas which the general public sought further information on were: the socio-economic effect of the Project (in particular, the potential for local job creation); and the potential visual appearance of the Project.

1.4.4.5 Although wind turbines are a familiar feature of the onshore landscape, the concept of visualising turbines more than 14 miles away, without the usual landscape references was identified as challenging.

- 1.4.4.6 In order to address this, and to provide the public with information, consultants Open Optimised Environment were engaged to produce a series of conventional photomontages, taken from five locations on the coastline in Caithness and Morayshire.
- 1.4.4.7 Additionally, consultants 3D Web technology were engaged to produce a computer-simulated 'fly through' of the proposed development. This included functionality to view the development from any point on the coast and to adjust weather conditions, thus giving a user-controlled tool to enable the public to gain a meaningful understanding of the Project's visual effect.
- 1.4.4.8 Political interest, both locally and nationally focussed on job creation opportunities which the Project could deliver. As part of the EIA, a detailed socio-economic study was undertaken by SQW, and recognising the interest in this aspect, it was determined to place the draft findings of this work in the public domain at an early opportunity.
- 1.4.4.9 The key tools to disseminate this information to the public were:

Project Update Brochure

- 1.4.4.10 A 12 page colour glossy project update brochure, including a photomontage and the initial findings of the socio-economic survey job prediction was published. This was sent to:
- Ca. 350 members of the public;
  - 26 MSPs;
  - 6 MPs;
  - 86 local authority councillors;
  - Ca. 100 community councils; and
  - Various local organisations.

Pre-Application Public Exhibitions

- 1.4.4.11 After consultation with stakeholders, including the Moray Firth Partnership, and following examination of attendance figures at the Scoping Consultation, a series of seven public exhibitions were undertaken. The Moray Firth Partnership was commissioned to organise and publicise these through the extensive network of contacts for local organisations, community councils, etc. which they hold.
- 1.4.4.12 Public exhibitions were held as detailed in Table 1.4-3 below.

**Table 1.4-3 Public Exhibitions**

Wick	MacKay's Hotel	23 Nov 2011
Helmsdale	Community Centre	24 Nov 2011
Inverness	Eastgate Shopping Centre	25 Nov 2011
Fraserburgh	Leisure Centre	30 Nov 2011
Buckie	Town House	5 Dec 2011
Inverness	Eden Court	6 Dec 2011
Elgin	St Giles Shopping Centre	7 Dec 2011

1.4.4.13 With the exception of Elgin (which was curtailed due to severe weather), opening hours were from 12pm–8pm.

### **Media Advertising**

1.4.4.14 The exhibitions were advertised in the local press one week prior to their taking place and were carried in the following titles (half page, full colour):

- Caithness Courier;
- John O Groats Journal;
- Northern Times;
- Rossshire Journal;
- Ins Courier;
- Fraserburgh Herald;
- Inverness Courier;
- Northern Scot;
- Highland News;
- Banffshire Journal;
- Midweek Extra (Buckie); and
- Forress Gazette.

1.4.4.15 The exhibitions included five A1 size photomontages, the 3D user-controlled computer model and were staffed by Project employees.

1.4.4.16 In excess of 200 people attended over the eight events.

### **1.4.5 Opinion Survey**

1.4.5.1 Views of the public about various aspects of the Project were sought and recorded using opinion survey cards, which were made available at each of the exhibitions.

1.4.5.2 The survey cards tested opinions using 11 different questions about the concept of wind and offshore wind, the specific question of an offshore wind project located in the outer Moray Firth and of opinion about the effect of the Project on different aspects of the environment, including wildlife, fisheries, economy and visual effect.

1.4.5.3 Some of the key findings were:

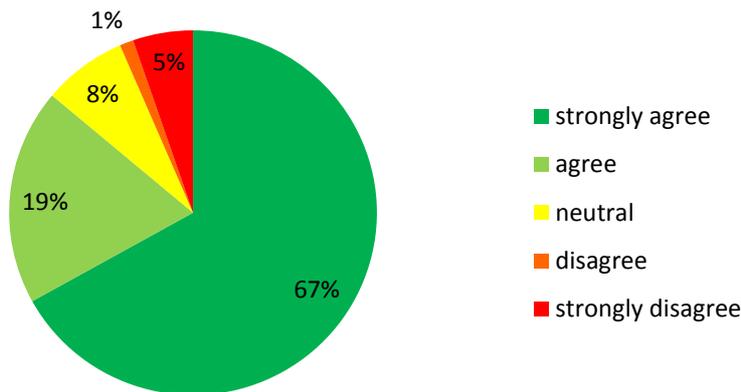
- 86 % of those surveyed support the development of wind energy in the outer Moray Firth. 6 % oppose development;
- 73 % of those surveyed believe the Project will have a positive effect on the environment overall;
- 86 % of those surveyed expect the Project to have a positive effect on the local economy;
- 45 % of those surveyed believed that there would be a neutral effect on visuals and landscape; 17 % believed there would be a negative effect; and

- The most significant issue of concern was effects on marine mammals (especially dolphins); although this was the largest area for concern, only 29 % thought the Project would have a negative effect.

1.4.5.4 The survey included a general question about public support for the development of offshore wind in the Outer Moray Firth, i.e.

Do you support the development of offshore wind energy in the Outer Moray Firth?

**Q4. Moray Firth Project**



**Plate 1.4–2 Public Support for Outer Moray Firth Offshore Wind Development**

1.4.5.5 Full details of responses to all 11 survey questions are recorded in Technical Appendix 1.4 D.

1.4.5.6 A total of 328 completed survey forms were received.

#### **1.4.6 Media and Political Engagement**

1.4.6.1 The development of offshore wind at distances far from shore present particular challenges for public engagement. Unlike conventional onshore projects, where development usually affects a small number of discreet communities, the community local to the offshore projects is much more difficult to identify owing to the distance from the development. The Project is geographically much further from its nearest neighbours (meaning that the effect on those communities is smaller) however, a great many more communities can claim to be 'nearest neighbours' to the Project. This challenge is greater in the Moray Firth, which is bound by two coastlines.

1.4.6.2 The generating station element of the Project (Telford, Stevenson and MacColl) required to consider communities along approximately 250 miles of coastline, from Wick to Inverness, Inverness to Peterhead and more than 20 towns in between.

1.4.6.3 Some of the conventional means of direct engagement (such as individual household mailings) with such communities was neither appropriate nor practical, given the difference in scale and effect between onshore and offshore development.

- 1.4.6.4 However, MORL was committed to delivering awareness of development and access to information about the Project to as broad a range of local stakeholders as possible. Therefore, in addition to the usual methods of direct communications, such as public exhibitions, a pro-active media engagement strategy was adopted.
- 1.4.6.5 Thus information and awareness about the Project was delivered through communication channels which the population in the Moray Firth area were known to already use.
- 1.4.6.6 In order to deliver this strategy, news releases were issued to the local press, who were also invited to attend public events such as exhibitions.
- 1.4.6.7 The primary daily newspaper in the area is the Aberdeen Press and Journal.
- 1.4.6.8 News Releases and associated coverage are included at Technical Appendix 1.4 E.
- **Visuals & Socio-Economic Press Conference November 2011** – This press conference followed the completion of the socio-economic study and provided details about future job forecasts for the Project. It also provided initial visualisations of the Project from shore. Given that these were areas in which public interest had been expressed at exhibitions during the publication of the scoping report, it was determined that such information should be placed in the public domain via the local media as early as possible in the process.
- 1.4.6.9 Details were also provided of public exhibitions which also carried this information. The press conference was covered in the Herald, the Scotsman and the Press and Journal, (Front page coverage was achieved in the Press and Journal and the Herald). All three daily nationals carried the photomontages which were supplied to journalists, detailing a visualisation of the Project from its closest point to shore in Caithness.
- **Application Submission Press Conference July 2012** – A press conference to announce consent application is planned for July 2012.

### Political Engagement

- 1.4.6.10 MORL recognised that the development of offshore wind energy is a matter which has commanded particular interest on the political agenda, and has therefore taken particular steps to engage with elected members of the Scottish, UK and European Parliaments. Twenty six MSPs and six MPs have direct constituency interests with the Project, and engagement with those members has been on-going.

### 1.4.7 MPs and MSPs

- 1.4.7.1 **August 2010:** All MSPs and MPs were sent a copy of the Non Technical Summary of the Scoping Report and offered an individual briefing with the Project staff.
- 1.4.7.2 Meetings took place with:
- Maureen Watt MSP;
  - Kevin Stewart MSP;
  - Rob Gibson MSP; and
  - Jamie McGrigor MSP.

1.4.7.3 **May 2011:** Following the Scottish Parliament elections, all newly elected members of the Scottish Parliament were contacted and provided with a copy of the Non Technical Summary of the Scoping Report.

1.4.7.4 **June 2011:** A Parliamentary Briefing was held in the Scottish Parliament on 9 June in Committee Room 1. The event was hosted by Rob Gibson MSP, and the following members attended or were represented by their staff:

- Rob Gibson – Caithness, Sutherland & Ross;
- Jamie McGrigor – Highlands;
- Rhoda Grant – Highlands;
- Dave Thomson – Skye Lochaber & Badenoch;
- Denis Robertson – Aberdeenshire West;
- Patrick Harvie – Glasgow;
- Jean Urquhart – Highlands;
- Liam McArthur – Orkney; and
- John Finnie – Highlands.

1.4.7.5 The following issues were raised:

- Supply chain development;
- Opportunities for jobs and economic development;
- Undergrounding of sub-sea cables; and
- Access to transmission grid.

1.4.7.6 **December 2011:** All MPs and MSPs were sent a copy of the Project Update Report.

### Scottish Government

1.4.7.7 The Scottish Government holds responsibility for most aspects of the consenting process and is responsible for matters relating to the promotion of renewable energy and economic development.

1.4.7.8 The Project has engaged both with Government officials and directly with Government Ministers and Cabinet Secretaries. Meetings have taken place with:

- Jim Mather MSP: Energy Minister;
- Richard Lochhead MSP: Cab. Sec. For Rural Affairs; and
- Alex Salmond MSP: First Minister.

### Local Authorities

1.4.7.9 Three local authorities form the coastline adjacent to the Project; Highland, Moray and Aberdeenshire. In total 86 councillors representing seaward wards have a ward interest in the Project.

1.4.7.10 All 86 councillors were sent a copy of the Non Technical Summary of the Scoping Report, and all local authorities have been offered further briefing on the Project. Meetings have taken place with officials in the planning and economic development departments of each local authority.

1.4.7.11 In December 2011 at the invitation of the Economic Development Committee, MORL provided a 30 minute briefing session to members of the Moray Council at their meeting of that committee, which 15 councillors attended.

### **Community Councils**

1.4.7.12 Community councils form the smallest democratically elected unit of representation within the Scottish political landscape. These are statutory organisations, but in some areas, community councils do not currently exist. Ninety-eight community councils are local to the Project area, and owing to their number, these were regarded as a communication strand within their own right.

1.4.7.13 In August 2010 all community councils local to the Project were contacted and provided with details of the programme of public exhibitions.

1.4.7.14 In January 2011 all community councils local to the Project were provided with a Non-Technical Summary of the Scoping Report, and several opinion survey cards. In total, 500 return-postage-paid opinion survey cards were issued to secretaries and conveners of 98 community councils; 16 survey cards were returned to MORL.

1.4.7.15 Subsequently, all community councils were issued with copies of the Project Update Brochure and all were offered meetings with MORL.

1.4.7.16 MORL was invited to the following community councils or community organisations:

- Lybster, Latheron and Cly Community Council; and
- Golspie Ward Forum.

1.4.7.17 A presentation was made to these organisations by Project staff, who were available to take questions during the meeting.

### **1.4.8 Engagement, Economic Development & Supply Chain**

1.4.8.1 The issue of economic development has been identified both by the Scottish and UK Government and by the Project's local stakeholders as being important. Although consequential to development, aspirations for local and national economic growth as a result of the development of offshore wind are high.

1.4.8.2 Offshore wind is a new industry to the Moray Firth area, so a supply chain for the industry has not yet developed locally. The importance of a strong local supply chain in translating the new market opportunities created by the development of the Project into jobs and economic growth, has been identified as a priority by the Scottish Government. Accordingly, MORL carried out early engagement with Highlands and Islands Enterprise who are the local development agency for the area.

1.4.8.3 Subsequently, meetings have taken place with Scottish Enterprise, the Scottish Government's Economic Development staff, and with Marine Scotland with the aim of supporting the agencies which are responsible for local economic development and the development of supply chain industries.

## **Pilot Economic Engagement Project**

- 1.4.8.4 The work on socio-economic impact assessment, which was completed by consultants SQW in Autumn 2011, was recognised as being of particular political significance in view of UK and Scottish Government statements about the potential for the offshore wind industry to deliver economic regeneration.
- 1.4.8.5 MORL recognise that the Project will bring a significant new market for jobs and services to Scotland and the UK, and therefore took the decision to develop a strategy to allow Government to take advantage of that new market by translating its opportunities into jobs and economic growth.
- 1.4.8.6 Marine Scotland identified that under the terms of the legislation which established it as an agency, it had an obligation to consider the socio-economic effect of marine developments. A number of meetings with Marine Scotland and with the Scottish Government Energy Division took place, and Marine Scotland proposed to use MORL as a 'pilot' to examine and develop the socio-economic opportunities offered by offshore wind.
- 1.4.8.7 Through Highland and Island Enterprise (HIE) and Scottish Enterprise (SE), the Scottish Government has significant and experienced economic resources.
- 1.4.8.8 Marine Scotland led a series of meetings with MORL, the Scottish Government Energy Division, HIE and SE to develop a 'pilot' scheme to enable HIE and SE to access appropriate parts of the Project's procurement process (which is currently in early stages), which involves requesting information from companies able to supply the market.
- 1.4.8.9 The pilot involves the early sharing of information between MORL and HIE and SE to allow the agencies the opportunity to offer their support in an early, appropriate and focused way to strengthen and develop the supply chain, maximising opportunities for local economic development.
- 1.4.8.10 The pilot will take the form of frequent and regular engagement between MORL and HIE / SE. Although in its early stages, the intention is to allow partnerships working between the public and private sector to facilitate the optimisation of support to the supply chain. The information provided by MORL is intended to allow the agencies, which translate new markets into growth and prosperity, to optimise their efficiency, effectiveness and success with due respect to commercial confidentiality and commercial sensitivity.

## **1.4.9 Draft Environmental Statement**

- 1.4.9.1 In order to deliver a high-quality Environmental Statement, and to allow key stakeholders to examine, discuss and seek to resolve potential issues before the publication of the final Environmental Statement, it was determined that a Draft Environmental Statement would be produced, that this would be forwarded to a limited list of key stakeholders including Marine Scotland, Statutory Nature Conservation Agencies, NGO's and industry representation groups and associations. A series of follow-up meetings was organised with those stakeholders.

### **Aims of Draft Environmental Statement Consultation**

- 1.4.9.2 The aims of engagement on the Draft Environmental Statement were:
1. Review of methodology and impact assessments;
  2. Incorporate additional baseline and impact assessment information (as available between draft and final ES);
  3. Agree appropriate methodology; and
  4. Refinement of Rochdale Envelope.
- 1.4.9.3 The Draft Environmental Statement was released to key stakeholders from December 21 2011 and responses were sought from those organisations.
- 1.4.9.4 Meetings were scheduled with stakeholders in groups or as individuals over the following three months in order to deliver the aims of engagement.

### **Summary of Draft Environmental Statement Consultation**

- 1.4.9.5 21 organisations received draft ES, as follows:
- Marine Scotland / Marine Scotland Science;
  - Scottish Natural Heritage;
  - Joint Nature Conservation Committee;
  - Royal Society for the Protection of Birds;
  - Whale and Dolphin Conservation Society;
  - Helmsdale River Board;
  - Ness and Beaully Fisheries Trust;
  - Highland Council / Aberdeenshire Council / Moray Council;
  - Scottish Enterprise / Highlands and Islands Enterprise;
  - Royal Yachting Association;
  - Northern Lighthouse Board;
  - Maritime Coastguard Agency;
  - Chamber of Shipping;
  - Cruising Association;
  - Scottish Fisheries Federation / Scallop Association;
  - Scottish Environmental Protection Agency; and
  - Historic Scotland.
- 1.4.9.6 Following distribution of the draft ES:
- 19 meetings were agreed with stakeholders; and
  - 18 written responses were received by MORL.
- 1.4.9.7 The draft ES was positively received by stakeholders, and the additional work required by stakeholders to review and comment upon the document is appreciated by the developer.

1.4.9.8 The resources which stakeholders directed to the draft ES have enabled the document to be refined and have allowed a number of issues and concerns to be addressed prior to consent application.

1.4.9.9 A summary of responses to the Draft Environmental Statement is provided at Technical Appendix 1.4 F.

#### **1.4.10 Transmission Infrastructure Engagement Strategy**

1.4.10.1 The TI is considered, for commercial and regulatory purposes, to be an independent project (although as explained earlier, for the purposes of the EIA regulations and this ES, the TI is assessed as part of the Project).

1.4.10.2 A separate engagement strategy has therefore been produced. Although initial consultation with statutory stakeholders has commenced on the Scoping Report, it is anticipated that the broader public engagement strategy will commence in Autumn 2012, subject to further discussions with the regulator and with the transmission network owners and operators.

1.4.10.3 The TI will involve onshore works and the establishment of permanent onshore infrastructure.

1.4.10.4 Although the proposed onshore works and cable route is not one of the types of development explicitly listed within the 2009 Regulations as requiring a Pre-Application Consultation, as the pioneers in a new industry, MORL recognise the value of local engagement and are committed to following best practice and therefore propose to undertake a full pre-application consultation (PAC).

1.4.10.5 Preliminary discussions have been held with Aberdeenshire Council in order to guide the activities which will be undertaken in the pre-application consultation for the transmission infrastructure. These will include:

- Public Exhibitions within Aberdeenshire (provisionally three locations, Bodam, Perterhead and Fraserburgh);
- Notification of public exhibitions through advertisement in local media;
- Provision of information to all relevant local community councils;
- 12 week period of consultation;
- Public opinion recorded via opinion survey cards distributed via public exhibitions and local community councils; and
- Local planning authority guidance sought on proposals for engagement.

### **1.4.11 Post Application Engagement**

1.4.11.1 A programme of post-application engagement is planned in order to provide broad public awareness of the Project and its consent applications.

1.4.11.2 In order to avoid local summer and school holidays, and thus provide maximum opportunity for public engagement, it is proposed that post application engagement activities will commence in mid-August 2012, and will include the following activities:

1. Series of public exhibitions (12 locations);
2. Public exhibitions advertised in local media;
3. MPs, MSPs, Councillors and Community Councils provided with a project update;
4. Media Conference in Inverness; and
5. Lodging of the ES in local libraries.