

# Marine Scotland



BLUE SEAS – GREEN ENERGY

A Sectoral Marine Plan for Offshore Wind Energy  
in Scottish Territorial Waters

PART A  
The Plan

marinescotland

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A Sectoral Marine Plan for Offshore Wind Energy  
in Scottish Territorial Waters

PART A  
The Plan

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Marine Scotland  
The Scottish Government  
Victoria Quay  
Edinburgh  
EH6 6QQ

APS Group Scotland  
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## MINISTERIAL FOREWORD



Scotland is uniquely positioned to capitalise from renewable energy. We are in a new era of energy generation, where finite fossil fuels must be joined and ultimately replaced by cleaner and greener sources of energy. We are also faced with the challenges presented by climate change and are ever aware of the consequences which the continued consumption of carbon based fuels may bring. The Scottish Government has taken firm steps to tackle this issue through the introduction of world leading emissions reductions targets. To achieve these, we must look to our dynamic marine environment and the significant contribution that its renewable energy resources can make.

Scotland is a leader in the development of renewable energy. There is enough wind, wave and tidal energy in our seas and around our coasts to meet our electricity demands several times over. In addition, our nation has a long history of engineering excellence and a commensurate track record in science and research. It is these strengths which will drive our green energy revolution and make Scotland a model nation in the transition to a low carbon economy. Our ports, manufacturing and research industries can benefit from the opportunities that new economic activities will provide. By continuing to develop renewable energy, we can power our homes, our businesses and promote sustainable economic growth.

*Blue Seas – Green Energy* - the Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters is our vision for the delivery of energy from offshore wind resources. The Plan contains proposals for offshore wind development at the regional level up to 2020 and beyond. It seeks to maximise the benefits for Scotland, our communities and our people and recognises the need for public acceptability in the development of offshore wind. It aims to strike a balance between economic, social and environmental needs and also recognises that there are national and regional challenges to overcome to facilitate development.

Our marine environment is perhaps our greatest natural asset. I believe that *Blue Seas – Green Energy* outlines the road ahead to deliver offshore wind energy in a prosperous and sustainable manner. Green energy, reduced emissions and the provision of jobs in new industries are just some of the benefits within our reach.

A handwritten signature in black ink that reads "Richard Lochhead". The signature is written in a cursive, slightly slanted style.

Richard Lochhead MSP  
Cabinet Secretary for Rural Affairs and the Environment



## EXECUTIVE SUMMARY

### Introduction

The Scottish Government believes that Scotland can lead the world in the development and deployment of renewable energy technologies. Our offshore potential is enormous – with an estimated 206 gigawatts (GW) of offshore wind, wave and tidal resource in Scottish waters; almost 40% of the UK total<sup>1</sup>. These resources will play a major part in meeting our ambitious renewable electricity target – 80% of gross Scottish consumption by 2020<sup>2</sup>.

As we move into a new era of energy generation, and as the shift from finite fossil fuels accelerates towards permanence, we have to harness more and more of our renewable energy resources. We must start to tap into our dynamic marine environment, including our offshore wind energy potential, to provide us with the power we need for our homes, businesses and to drive our economy forward.

The Scottish Government has used a marine planning approach to develop *Blue Seas Green Energy – A Sectoral Marine Plan for Offshore Wind in Scottish Territorial Waters* (the Plan). This process was started through the application of Strategic Environmental Assessment (SEA) to produce a draft Plan. The SEA Environmental Report and draft Plan were consulted upon before Habitats Regulations Appraisal (HRA) and Socio-economic Assessment were applied to inform the contents of the final Plan.

Consultation has been a key element in the development of the Plan. The Scottish Government has sought to build the views of statutory, sectoral, regional, voluntary and other bodies as well as individuals into the planning process. The Plan is based on current knowledge and views but will be subject to monitoring, research and consultation to enable an informed Plan review. The Scottish Government will continue to adopt marine planning approaches in future sectoral development through the use of scoping tools such as the Marine Resource System (MaRS), and the application of marine planning techniques such as Regional Locational Guidance (RLG).

Scottish Ministers have adopted the Plan. A Post-Adoption Statement<sup>3</sup> (PAS) has been produced which details how the assessment outputs and the consultation analysis have been taken into account in the final Plan.

### Options

The draft Plan contained 10 short term options. The sites were selected by developers and The Crown Estate Commissioners (CEC) and awarded Exclusivity Agreements. The 10 sites, reduced to 9 due to the Bell Rock site being withdrawn by the developer, were included in the draft Plan as the short term options to be developed by 2020. The planning and SEA processes identified a further 25 medium

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<sup>1</sup> The Offshore Valuation <http://www.offshorevaluation.org/>

<sup>2</sup> The Scottish Government's Renewables Action Plan [www.scotland.gov.uk/publications/](http://www.scotland.gov.uk/publications/)

<sup>3</sup> Sectoral Marine for Offshore Wind Plan in Scottish Territorial Waters: Post Adoption Statement [www.scotland.gov.uk/publications/](http://www.scotland.gov.uk/publications/)



term areas of search within the plan regions for development between 2020 and 2030. The medium areas of search will be subject to further assessment.

It should be noted that in addition to the short term sites and medium term areas of search contained within the Plan, there are 2 sites within Scottish Offshore Waters as a result of the CEC third leasing round (Round 3) for offshore wind development. These sites were considered as part of the UK Government Department for Energy and Climate Change Offshore Wind SEA<sup>4</sup>.

### **Consultation and Assessment Results**

The outcomes of the SEA, HRA, Socio-economic Assessment and Consultation Analysis have informed the Final Plan. The main findings were:

There is a significant offshore wind energy resource within Scottish Territorial Waters and Scottish Offshore Waters (12 to 200 nautical miles). As the Plan is currently restricted to Scottish Territorial Waters, there exists the opportunity for further development in addition to the short term options and medium areas of search identified in the Plan.

The Plan has sought to deliver sustainable development by addressing impacts and concerns. There are generic issues related to shipping, fishing and environmental impact which apply in all offshore wind plan regions around Scotland. In addition, there are significant environmental and cultural issues in certain regions such as visual impact and the effects on tourism. In the West and South West regions, community engagement and public acceptability are significant issues.

Scottish Ministers have decided that 6 short term sites and 25 medium areas of search should be progressed within this Plan. Scottish Ministers have also decided not to progress 3 short term sites. It is acknowledged that there is significant opportunity for further areas to be identified in both Scottish Territorial and Offshore Waters.

The main findings for each of the Offshore Wind Plan regions are:

#### ***East Region (off the Forth and Tay)***

This region has favourable conditions for the development of offshore wind. The significant strategic issues relate to fishing, shipping and the environment. Evidence suggests that these issues can be addressed through appropriate mitigation measures. There are 3 short term sites within Scottish Territorial Waters (STWs) which appear to be suitable for development by 2020. There is also a large Round 3 offshore wind development just outside the STWs boundary but within Scottish Offshore Waters (SOWs). The cumulative impacts of these developments will require further consideration.

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<sup>4</sup> <http://www.offshore-sea.org.uk/site/index.php>

### ***North East (Moray Firth)***

This region has favourable conditions and significant potential for the development of offshore wind both within Scottish Territorial Waters and beyond into Scottish Offshore Waters. The significant strategic issues to be resolved relate to fishing and the environment, with potential adverse effects on bottlenose dolphins also a significant issue. Shipping appears to be less significant. Evidence at this stage suggests these issues can be addressed through appropriate mitigation measures at the project level. There is 1 short term site within Scottish Territorial Waters which appears to be suitable for development by 2020. There is also a large Round 3 offshore wind development site just outside Scottish Territorial Waters which is adjacent to the Beatrice short term site. The cumulative impacts of these developments will require further consideration.

### ***North***

This region has favourable conditions for the development of offshore wind. The significant strategic issues to be resolved relate to fishing, shipping and the environment. Evidence at this stage suggests that these issues can be addressed through appropriate mitigation measures at the project level. There are no short term sites within this region at present, however further work could identify the potential for offshore wind development to be brought forward. There is potential for further development opportunity in this region and in adjacent Scottish Offshore Waters.

### ***North West***

This region has favourable conditions for the development of offshore wind. The significant strategic issues to be resolved relate to fishing, shipping and the environment. Evidence at this stage suggests that these issues can be addressed through appropriate mitigation measures at the project level. There are no short term sites within this region however further work could identify the potential for offshore wind development to be brought forward. There is potential for further development opportunity in this region and in adjacent Scottish Offshore Waters.

### ***West Coast (Tiree, Islay and Kintyre)***

This region has mixed conditions for the development of offshore wind. The significant strategic issues relate to visual impact and cultural heritage issues with additional concerns linked to impacts on tourism and recreation. There are 3 short term sites within Scottish Territorial Waters:

**Tiree and Islay** – These sites have favourable conditions for the development of offshore wind. However there is a need for effective engagement with the community at the project level. There should be involvement by key agencies and the local community representation in influencing proposals such as a scenario / masterplanning approach. The aim of such an approach would to help steer the onshore elements of the proposed offshore wind developments. Developers will be expected to engage with communities to discuss options and seek public acceptability for their proposals.

**Kintyre** - This site as chosen presents significant problems for the development of offshore wind. The significant strategic issues include a lack of public acceptability on environmental and visual impact grounds as well as impacts on existing and potential future investment opportunities. As a result, the Scottish Ministers have decided that the **Kintyre site** is **unsuitable** for the development of offshore wind and should **not** be progressed as part of this Sectoral Marine Plan.

### ***South West (Solway and Wigtown Bay)***

This region and these sites specifically present significant problems for the development of offshore wind. The significant strategic issues are public acceptability, environmental and visual impact. In addition, socio-economic assessment suggests that there is little or no potential for regional economic benefit, and indeed that there is a possibility of adverse economic impacts. Both the relevant Planning Authority and local consultees have expressed real and sustained opposition to the 2 short term options or any form of offshore wind development within the Solway. As a result, the Scottish Ministers have decided that the **Solway Firth** and **Wigtown Bay** sites are **unsuitable** for the development of offshore wind and should **not** be progressed as part of this Sectoral Marine Plan.

## **Sectoral Marine Plan for Offshore Wind in Scottish Territorial Waters**

The Final Plan considers the development of offshore wind at the regional level. It contains recommendations, key findings from the assessments and consultation analysis, key issues to be addressed, and key actions to address these issues. It also identifies further studies and research projects which will advance the marine spatial planning approach taken to develop this Plan over the 2 year review process.

### **Progress**

The Scottish Government will consider the opportunity for further developments in the short and medium term both in Scottish Territorial and Offshore Waters.

The Plan will be subject to monitoring on a variety of environmental and social receptors. It will be reviewed on a 2 year cycle. This will be informed by monitoring and research work as a result of SEA, HRA and Socio-economic assessments, as well as views expressed in future consultation and by any steering or advisory groups. The SEA contains recommendations for monitoring, research and further assessment as does the Habitats Regulation Appraisal. It is recognised that the Socio-economic Assessment is strategic and high level and as such will require a more regional focus to address fishing, shipping, recreation, sport and tourism sectors. It is also recognised that potential development strategies including those for other marine renewables (wave and tidal), further offshore wind development and other marine sector activities will emerge and that potential cumulative and in-combination effects must be addressed in the appropriate manner to properly consider existing sectors such as fishing and shipping and our unique natural environment.

Overseen by The Scottish Government, it is envisaged that the Marine Strategy Forum will provide high level steering for the Plan review and research agenda. The

SEA and HRA steering groups and Socio-economics advisory group will inform the development of assessment processes and as regional marine planning is rolled out around Scotland there is growing potential for more structured regional policy development and consultation engagement.

## 1. INTRODUCTION

1.1 *Blue Seas – Green Energy - the Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters* is the strategic planning document for the development of offshore wind energy in Scottish Territorial Waters. It contains proposals for development at the regional level up to 2020, 2030 and into the longer term.

### Strategic Aims

1.1.1 The Plan is based on strategic aims which are applicable across its geographical scope. These are:

- Maximise the contribution that offshore wind energy makes to renewable energy generation in Scotland;
- Maximise opportunities for economic development, investment and employment;
- Minimise adverse effects on people, other economic sectors and the environment; and
- Deliver offshore wind while complementing other forms of marine energy generation.

1.1.2 This Plan is an integral part of a series of initiatives which include:

- Scotland's Offshore Wind Industry Route Map,
- The National Renewables Infrastructure Plan (N-RIP), and
- Securing the Benefits from Scotland's Next Energy Revolution

1.1.3 These initiatives have been put in place to help facilitate green energy development in the marine environment. Additionally this Plan seeks to deliver Scottish Ministers' policies for green energy, thereby helping to meet our carbon reduction targets<sup>5</sup>. The Plan underpins the promotion of economic development and competitiveness for Scotland and has been built using environmental and socio-economic assessments and consultation, both public and sectoral, as marine plan making tools.

### *The Benefits*

1.1.4 Scotland has considerable potential for offshore renewable energy developments. Estimates indicate that Scotland has up to 25% of Europe's offshore wind potential<sup>6</sup>.

1.1.5 From an environmental perspective, this Plan recognises offshore wind as an integral element in Scotland's contribution towards action on climate change. Emissions of green house gases (ghgs) should reduce through a shift from the use of carbon based fossil fuels to the production of cleaner and greener energy. Scotland surpassed green energy targets for 2010 and we are on

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<sup>5</sup> Climate Change (Scotland) Act 2009. 42% by 2020, 80% by 2050

<sup>6</sup> Scotland's Renewables Resource (2001)

track to also exceed EU, UK and our own higher targets for green energy and carbon emission reductions by 2020, 2050 and beyond.

- 1.1.6 The large scale development of offshore wind also represents one of the biggest opportunities for sustainable economic growth in Scotland for a generation. Offshore wind developments within Scottish Territorial Waters and Offshore Waters could result in projected investment in Scotland of approximately £7.1bn over the next decade and the creation of upwards of 28,000 direct jobs in Scotland by 2020<sup>7</sup>. The Plan recognises that ports and harbours present viable locations to service the associated construction and maintenance activities. Scotland is also well placed to capture one third of the total UK supply chain market, potentially securing an additional £100bn of investment<sup>8</sup>. Scottish research institutions provide a base of academic excellence for delivering technological advancements and technology transfer and are also well placed to benefit from the creation of this new industry around Scotland.
- 1.1.7 The development of offshore wind will also make a significant contribution to energy security as it will enable the supply and generation of energy within and for Scotland. There is potential to deliver around 5 Giga Watts (GW) of offshore wind energy within Scottish Territorial Waters plus the potential to generate 4.8 GW of electricity for two Round 3 sites in Scottish Offshore Waters, before 2020. There is significant additional opportunity within Scottish Territorial Waters through the consideration of the medium term areas of search. As further assessment work is progressed, there may be potential to progress sites within these areas for delivery in the short or early medium term. In addition, there is significant opportunity for further offshore wind development within the Scottish Offshore Waters in both the short and medium terms. However, the pursuit of renewable energy in Scottish Territorial Waters should be balanced to ensure the health and diversity of the marine environment and the ability of people to profit from and enjoy the marine environment.

### *The Challenges*

- 1.1.8 Development should be both sustainable and seek to accommodate public and community views. This Plan identifies national and regional issues for offshore wind development. It also recognises the role Marine Licensing will play and highlights environmental, socio-economic and public concern issues which will require further consideration as the Plan is progressed. These issues have been identified through the application of a set of strategic marine planning tools. Project level assessments will be informed by Strategic Environmental and Socio-Economic Assessments, Habitats Regulations Appraisal and the responses to the significant consultation on the draft Plan. A Consultation Analysis Report with Addendum was produced to document the views of people, communities, sectors, statutory and non statutory environmental bodies, industry bodies, coastal forums and Local Government

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<sup>7</sup> Scottish Offshore Wind: Creating an Industry

<sup>8</sup> UK Renewable Energy Strategy 2009

Planning Authorities. This allowed for Ministers to be fully informed of the issues arising from consultation. The Consultation Analysis Report and Addendum have been published<sup>9</sup>.

- 1.1.9 From an economic perspective, Scotland has to compete with the rest of Europe and globally to maximise its share of the renewable energy market. This Plan represents an early opportunity to identify key strategic issues and potential mitigation measures in order to help avoid unnecessary delays in the later stages of the development process when tackling such issues could prove more challenging. As a consequence, this should contribute to the competitiveness of Scotland as a location for offshore wind development as it will be made it clear to developers and supply chain companies where development is possible, at what overall timescales, what the main challenges will be and where and what further opportunities Scotland can provide.

### **Key Legislative and Regulatory Drivers**

- 1.2 The key legislative and regulatory drivers for the development of offshore wind in Scotland are associated with:
- Marine Planning;
  - Mitigating Climate Change through Green Energy; and
  - Environmental Assessment and Marine Licensing

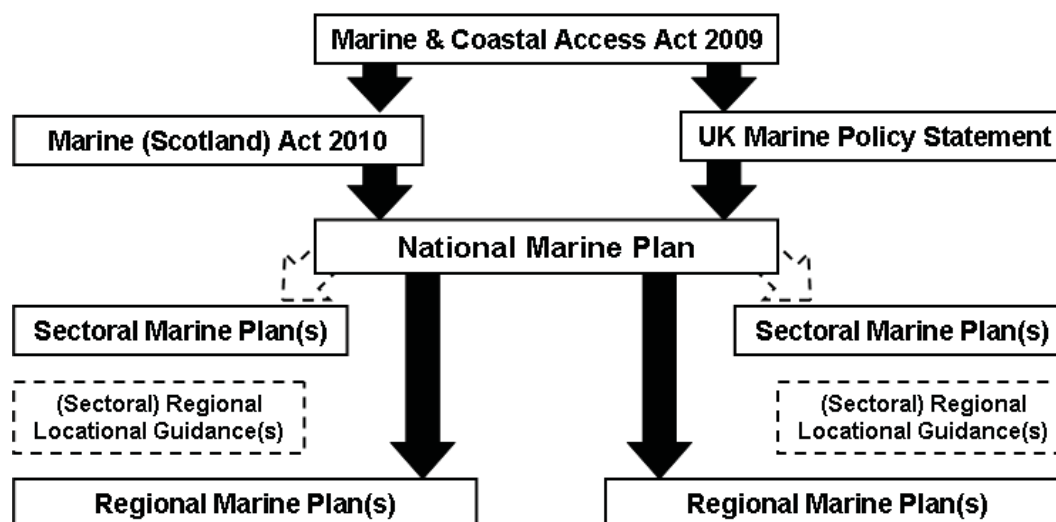
#### *Marine Planning*

- 1.2.1 A regulatory system for Marine Planning was introduced at the UK level through the Marine and Coastal Access Act 2009. This requires that marine plans are prepared for the UK marine area (0 to 200 nautical miles). The devolved administrations (the Scottish Government, the Welsh Assembly Government and the Northern Ireland Executive) have jurisdiction over marine planning matters from 0 to 12 nautical miles. In accordance with the 2009 Act, the UK Government and devolved administrations have prepared a joint Marine Policy Statement (MPS). The MPS provides the framework for preparing Marine Plans and decision-making in relation to the marine environment, and establishes policies and objectives for specific sectors and activities.

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<sup>9</sup> [www.scotland.gov.uk/publications](http://www.scotland.gov.uk/publications)



**Fig.1** Marine Planning Legislative and Policy Framework

1.2.2 In Scotland, the new legislative and management framework for the marine environment is established by the Marine (Scotland) Act 2010. As previously noted, the Scottish Government has jurisdiction over marine planning matters from 0 to 12 miles from the coast. For the purposes of marine planning, the marine area from 12 to 200 miles from the coast (Scottish Offshore Waters) is executively devolved to the Scottish Ministers. The Marine (Scotland) Act 2010 allows for a system of regional marine planning to be developed for Scottish waters. The Regional Plans will be directed by the objectives and policies of the National Marine Plan.

1.2.3 The Sectoral Marine Plan for Offshore Wind in Scottish Territorial Waters will be integrated into and inform this emerging marine planning framework. The requirement to develop the Plan is not a statutory provision of related marine legislation. The Plan is intended to complement both the National and Regional Marine Plans through the provision of relevant information and assessment for specific areas of marine planning. It will also be complemented by Regional Locational Guidance which will provide more prescriptive information for developments in relation to the potential for development in marine areas of resource acknowledging environmental and sectoral constraints.

#### *Climate Change and Energy*

1.2.4 Climate change and the requirement for alternative sources of energy<sup>10</sup> are important drivers for the Plan. The Climate Change (Scotland) Act 2010 establishes a long-term framework to cut greenhouse gas emissions by at least 80% below 1990 levels by 2050, with an interim target of 42% by 2020. In addition, the Scottish Government has made a commitment to generating 20% of energy demand, incorporating 80% of electricity consumption from renewable sources, by 2020.

<sup>10</sup> alternatives to fossil fuels



### *Environmental Assessment*

- 1.2.5 The Offshore Wind Plan was subject to the requirements of the Environmental Assessment (Scotland) Act 2005<sup>11</sup>. This legislation requires the Scottish Government to carry out Strategic Environmental Assessment (SEA) of its Plans, Programmes and Strategies that could generate potential significant environmental effects. The SEA has played a prominent role in the development of the Plan by identifying key environmental receptors, mitigation measures and providing an early indication of issues to be addressed at the project level.

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<sup>11</sup> The 10 short term sites with Exclusivity Agreements for offshore wind development in Scottish Territorial Waters, announced by The Crown Estate (TCE) in February 2009, were considered to constitute a 'plan' in terms of the Environmental Assessment (Scotland) Act 2005.

## The Development of Options

1.3 The Offshore Wind Sectoral Marine Plan contains options for development at the regional level to 2020 and beyond. These options are classed as:

- Short-term Sites – up to 2020
- Medium-term Areas – up to 2030

**Fig.2** (below) contains a map of the initial sites and areas

### *The Short-Term Sites*

1.3.1 The seabed within Scottish Territorial Waters is part of the Crown Estate. The Crown Estate Commissioners (CEC) are the commercial manager of the seabed within UK and Scottish Territorial Waters. CEC has the responsibility for awarding sea bed leases and Exclusivity Agreements for offshore wind sites. Developers proposing to take forward offshore wind development have to secure a sea bed lease.

1.3.2 In 2009, CEC undertook the first stage of lease bidding and awarded Exclusivity Agreement awards for 10 sites<sup>12</sup>:

- Solway Firth
- Wigtown Bay
- Kintyre
- Islay
- Argyll Array
- Beatrice
- Inch Cape
- Neart na Gaoithe
- Forth Array, and
- Bell Rock

1.3.3 The Exclusivity Agreements allow offshore wind energy developers to take the first step towards securing a commercial lease.

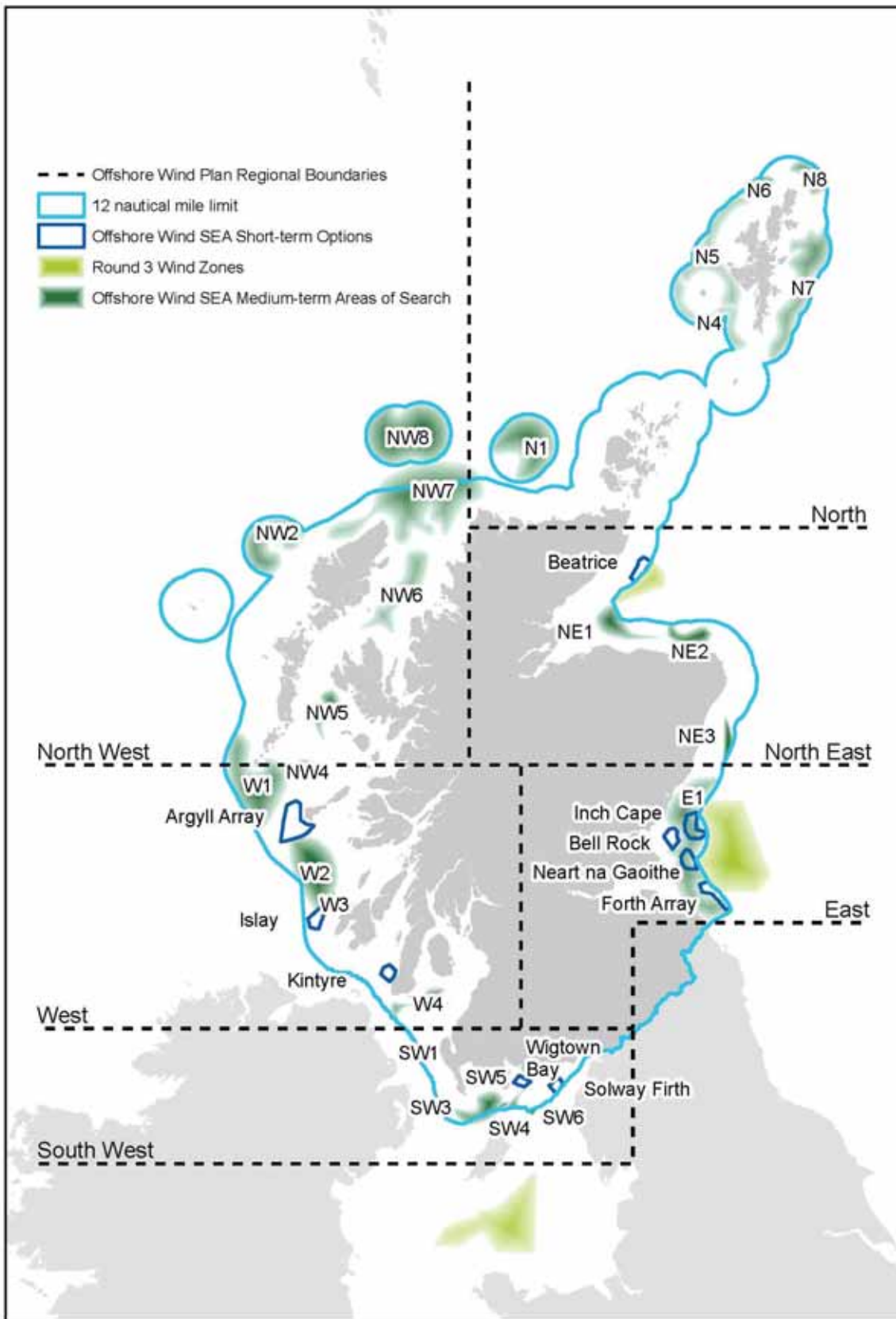
### *The Medium-Term Options (Areas of Search)*

1.3.4 In response to the CEC leasing round and to support the sustainable delivery of the potential for offshore wind around Scotland, the Scottish Government made a commitment to produce a Strategic Environmental Assessment (SEA) of the potential for offshore wind development in Scottish Territorial Waters, to include the 10 site options. The draft Plan was developed to accompany the Environment Report, and thereby ensure that those reviewing the assessment findings were clear about the emerging proposals.

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<sup>12</sup> The respective developers have decided against progressing with Kintyre and Bell Rock sites following further site investigations and stakeholder engagement

**Fig. 2** Short-term Sites and Medium Term Areas of Search (draft Plan)



### *Constraint and Opportunity Mapping*

- 1.3.5 In addition to the short term sites identified by CEC, the Scottish Government used consultants to undertake constraint and opportunity mapping in order to identify further medium term options, within which there could be further potential for development beyond 2020. As the map illustrates, a very significant amount of development potential exists within Scottish Territorial Waters.
- 1.3.6 The CEC marine spatial planning model, Marine Resource System (MaRS), was used to identify options, by mapping environmental and technical constraints as well as resource opportunities. 30 medium term options (areas of search) were identified. These areas have been identified using MaRS as a scoping tool and were the least constrained areas with sufficient offshore wind resource.
- 1.3.7 The 30 medium term options were then subject to environmental assessment, using the strategic environmental objectives developed with the Consultation Authorities. 2 medium term options were not deemed suitable in SEA terms because of their proximity to 'Neolithic Orkney'. A further 2 were deemed unsuitable because of their proximity to St Kilda and one was deemed unsuitable because of its proximity to the Beaufort's Dyke munitions dump. The remaining 25 medium term options are considered to be areas of search for further development before 2030. The Scottish Government would not expect any of these options to be developed by 2020 but will seek to explore these options further, initially through constraint and opportunity sensitivity testing using the MaRS model. The Scottish Government will apply further more detailed marine planning techniques including regional locational guidance, in the same manner that we developed for marine renewables development in the Pentland Firth and Orkney Waters and under The Saltire Prize Programme, to steer future lease bidding and help with licensing procedures. It is possible that given the potential for offshore wind development in the medium term options that some of them could prove suitable for advancement in the short term or for early delivery in the medium term.

The Medium Term Areas of Search were identified on a regional basis as follows (see Fig.2):

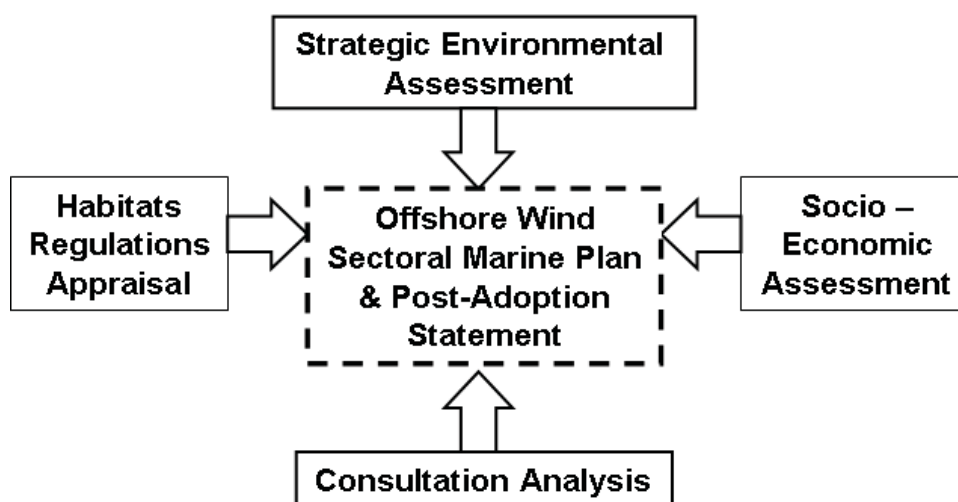
- **East** – E1
- **North East** – NE1, NE2, NE3
- **North** – N1, N4, N5, N6, N7, N
- **North West** – NW2, NW4, NW5, NW6, NW7, NW8
- **West** – W1, W2, W3, W4
- **South West** – SW1, SW3, SW4, SW5, SW6

## Plan Methodology

1.4 Strategic Environmental Assessment (SEA) is a strategic tool for assessing the effects of plans on the environment at an early stage in the process. Habitats Regulations Appraisal is used to determine if there could be significant effects on Natura 2000 sites. To take into account social and economic considerations, a Socio-economic Assessment was also taken forward. The findings have been brought together, to provide a cross sectoral and holistic perspective. Together, they provide the main tools which can be applied to deliver a Marine Sectoral Plan and essentially constitute a **Sustainability Appraisal approach** to the development of the Plan, incorporating:

- Strategic Environmental Assessment;
- Habitats Regulations Appraisal;
- Socio-economic Assessment; and
- Consultation Analysis.

**Fig.2** The Strategic Plan Making ‘Tools’



1.4.1 The consultation responses to the draft Plan proposals and the Environmental Report have been analysed and summarised<sup>13</sup>. This analysis was used to inform the socio-economic assessment work. In addition, a representative cross sectoral advisory group was formed to ensure stakeholder involvement in the socio-economic assessment. The stakeholders included the relevant Planning Authorities, Scottish Fishermen’s Federation and the Chamber of Shipping. In the case of the Habitats Regulation Appraisal the steering group consisted of Scottish Natural Heritage, Joint Nature Conservation Committee, Scottish Environment Link, Royal Society for the Protection of Birds, Whale and Dolphin Conservation Society, Crown Estate Commissioners, Scottish

<sup>13</sup> Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters: Consultation Analysis Report [www.scotland.gov.uk/publications](http://www.scotland.gov.uk/publications)

Renewables and the Scottish Government. This level of public, sectoral, statutory and environmental body representation and engagement within the Socio-economic Assessment and HRA combined with the extensive consultation on the SEA Environmental report and draft Plan has helped to ensure that appropriate consultation was undertaken within the plan development process to the **Sectoral Marine Plan** and **Post Adoption Statement**.

#### *Strategic Environmental Assessment*

- 1.4.2 SEA is intended to increase the consideration of environmental issues during decision making related to strategic documents such as plans, programmes and strategies. For the Sectoral Marine Plan, it has been used to test and comment on development proposals from a strategic perspective or, in the case of the medium term options, as a tool to identify strategic environmental constraints in order to steer future development. The process is applicable to strategic and, to some extent, regional level issues. It should not be used to pre-empt project level environmental assessment. As a result, the SEA findings and associated opinions arising from the consultation process have led to broad recommendations for the Plan as a whole. These findings can also, where appropriate, be used as a starting point for further more detailed data collection and environmental assessment, either for strategic review at a regional level or for project level assessment.

#### *Habitats Regulations Appraisal*

- 1.4.3 The SEA identified a number of potential effects from the draft Plan on Natura sites and their qualifying interests. To explore these issues further, The Scottish Government was required to undertake a Habitats Regulations Appraisal (HRA) of the Plan to determine whether it would have a 'likely significant effect' on sites designated for their nature conservation interest at an international level. This requirement extended to Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites. The HRA was carried out for the short and medium term options identified within the Plan.

#### *Socio-economic Assessment*

- 1.4.4 The Scottish Government responded to the views that came forward in consultation workshops and written responses and commissioned an initial, high-level and strategic socio-economic assessment of the draft Plan. This study focused on the impacts of the short term options at the national and regional levels. Analyses of site-specific or local impacts were considered out of scope, as these would be more adequately addressed through project-level analyses. The project was managed by the Scottish Government with a wider project advisory group established to inform the project. This involved national and regional stakeholders from the offshore wind, fishing, shipping, ports & harbours and tourism sectors, as well as key planning authorities. Consultation with key stakeholders was undertaken during the study to

develop a better understanding of potential impacts and develop key assumptions.

- 1.4.5 The study assessed the impact of short term option development in the North East, East, West, and South West regions of the draft Plan. As no short term options had been identified in the North and North West regions, these areas were not considered within the analysis.
- 1.4.6 The socio-economic assessment aimed to provide information and analysis on a range of relevant areas. It will be delivered in two constituent parts. The first part of the assessment considered the costs and benefits of the draft Plan on different marine sectors (such as commercial fisheries, tourism, and shipping) at both national and regional levels. The results of this part of the assessment are reported within the Plan and Post-Adoption Statement.
- 1.4.7 The assessment identified that the short term options were likely to impact on commercial fisheries, shipping & ports, recreational boating, recreational angling and tourism activities at regional and national levels. Evidence suggests that commercial fisheries would be adversely affected in each area where short term options are present, and that shipping & ports would be adversely affected in each area barring the North East region. Tourism and recreational angling impacts were likely to be adversely affected in West and South West regions. It is unlikely that there would be regional or national impacts on aquaculture, wave & tidal energy developments, cables & pipelines, or on surfing, windsurfing and kayaking, due to the absence of significant spatial conflict between these activities and the short term options.
- 1.4.8 The potential scale of the estimated impacts for any marine sectors affected by the short term options were quantified using scenarios. These costs are incurred once construction of the short term options begins, and continue to be incurred when they become operational. The range of estimated annual costs for each marine sector in each region resulting from the Low Impact to High Impact scenarios are shown in Table 1.

**Table 1:** Estimated annual costs to other marine users between Low and High Impact Scenarios (£m, Real Terms)<sup>14</sup>

<b>Sector</b>	<b>North East</b>	<b>East</b>	<b>South West</b>	<b>West</b>	<b>Total</b>
Commercial Fisheries	£0.07m - £0.13m	£0.17m - £0.76m	£0.02m - £0.06m	£0.08m - £0.70m	£0.34m - £1.65m
Shipping and Ports	-	£0m - £1.55m	£0m - £0.01m	£0m - £0.03m	£0m - £1.59m
Recreational Boating	£0m - £0.00m	£0m - £0.01m	£0m - £0.01m	£0m - £0.01m	£0m - £0.03m
Recreational Angling	-	-	£0m - £0.42m	£0m - £0.80m	£0m - £1.22m
Tourism	-	-	£0m - £0.37m	£0m - £3.42m	£0m - £3.79m
<b>Total</b>	£0.07m - £0.13m	£0.17m - £2.32m	£0.02m - £0.87m	£0.08m - £4.96m	£0.34m - £8.28m

1.4.9 Costs are also assessed over the 50 year appraisal period, which reflects the estimated impacts over the potential lifetime of the Short Term option developments. The range of total estimated values for each marine sector in each region resulting from the Low Impact to High Impact scenarios over the 50 year appraisal period are shown in Table 2.

<sup>14</sup> Costs in the Low Impact scenario only apply for 5 years following construction. Costs in the High Impact scenario apply in the full time period after construction.



**Table 2:** Estimated total costs to other marine users between Low and High Impact Scenarios (£m, discounted over 50 years, rounded to nearest £m)

Sector	North East	East	South West	West	Total
Commercial Fisheries	£0m - £3m	£1m - £15m	£0m - £1m	£0m - £14m	£1m - £34m
Shipping and Ports	-	£0m - £31m	£0m	£0m - £1m	£0m - £31m
Recreational Boating	£0m - £0m	£0m - £0m	£0m - £0m	£0m - £0m	£0m - £1m
Recreational Angling	-	-	£0m - £8m	£0m - £17m	£0m - £25m
Tourism	-	-	£0m - £7m	£0m - £71m	£0m - £78m
Total	£0m - £3m	£1m - £46m	£0m - £16m	£0m - £103m	£1m - £169m

1.4.10 The findings suggest the range of potential impacts across the scenarios, with the total value of the impacts varying from around £1 million over 50 years in the Low Impact scenario to around £169 million over 50 years in the High Impact scenario. The largest impacts at a national scale are estimated to accrue to tourism, commercial fisheries, and shipping & ports. Impacts varied across regions, with the majority of estimated impacts accruing to West region. Commercial fisheries impacts mainly accrued in West and East regions. Shipping & ports impacts accrued mainly in East region, while tourism impacts accrued mainly in West region.

1.4.11 These costs may also result in some employment opportunities being lost in the affected marine sectors, compared to what would have happened in the absence of the short term options. When the costs associated with the High Impact scenario are isolated and applied to simple economic multipliers representing commercial fisheries, tourism and recreational sea angling, it is estimated that around 140 jobs per year are no longer supported in these sectors once the Short Term options are developed, compared to what was projected to happen in the absence of the short term options. Around 70 per cent of these jobs are in tourism, and around 14 per cent are in commercial fisheries. Around 80 per cent of employment impacts per annum occur in West region. These impacts are substantially lower in the Medium Impact and Low Impact scenarios.

1.4.12 These findings suggest that the overall impact of the short term options on other marine sectors would be relatively small at the national and regional

scales. However, such impacts could be more significant at local levels. More precise estimates of impacts on other marine sectors would require site-specific analysis.

### *Consultation*

- 1.4.13 Consultation with the public is an essential component of the SEA and plan making processes. Consultation analysis has brought forward issues which require further consideration within decision making. Many of the views raised during the consultation have been taken into account within the Plan itself, whilst others will need to be addressed within review and/or at the project level. Where gaps in knowledge continue to exist The Scottish Government will put in place strategic monitoring and research to fill these gaps and consider the findings within the 2 year review process. This will include information gaps identified by the socio-economic assessment, in addition to the SEA, HRA and the Plan itself. However, again it must be stressed that this work is not meant to cover developmental site issues or certain cumulative or in-combination effects which have to remain the responsibility of the developers.

## **Plan Implementation**

### *Short-Term Options*

- 1.5.1 The work undertaken at this stage has allowed the Plan to include some clear guidance on the level of acceptability of development at the regional level. Where options are included in the Plan, issues will still have to be addressed by the developer at the project level. Environmental Impact Assessment (EIA) is the main tool to assess the impact of developments on the environment and identify some of the site specific mitigation issues to be addressed. The Plan has identified certain short term sites in certain regions as good candidates for future offshore wind development, subject to issues being resolved at the project level to include cumulative and in combination effects.
- 1.5.2 In addition, The Scottish Government is aware of further opportunities for offshore wind energy development in both Scottish Territorial and Offshore Waters and is taking steps to accelerate the consideration of developer access to these opportunities. These opportunities will be explored through the extension of geographic scope of the Plan and application of marine planning techniques to consider constraints and opportunity. The Scottish Government will also work with CEC to consider developer appetite, and the timing of future lease bidding for Scottish waters out to the 200 nautical mile limit.

### *Medium Term Options (Areas of Search)*

- 1.5.3 The medium term options were developed as future areas of search and will be subject to further assessment and refinement within the 2 year review process. The Scottish Government will also access further information using monitoring and research work taken forward under the respective SEA, HRA

and Socio-economic Assessment review processes. For example, the MaRS scoping work will be revisited to reassess the proposed medium term areas of search and The Scottish Government will apply Regional Locational Guidance techniques within the refined options. In addition, sectoral and environmental bodies will be included in advisory groups and public consultation will take place on further findings when or if they are considered to have an effect on the Plan.

### *Marine Licensing*

- 1.5.4 The Scottish Government has set up a new licensing system for certain developments and activities in the marine environment including offshore wind and marine renewable (wave and tidal) energy developments. The system, including the creation of a one stop shop for marine licensing, has a broad scope that will enable consistent decision-making on development and activities which take place at sea. Through the process of marine licensing and the conditions placed on consents/licences, The Scottish Government is seeking to promote economically and socially beneficial activity while minimising adverse effects on the environment, human health and other users of the sea. Licensing should also simplify the way we reconcile development and nature conservation at sea. The process of Marine Licensing should also be supported by relevant information and outcomes of processes including SEA, HRA and the designation of marine protected areas.
- 1.5.5 The inclusion of any sites or areas in the finalised Plan does not imply that licences or related consents will automatically be issued. Developers will be instructed to follow the statutory processes as laid down by the regulators. Now that the Plan has been adopted by the Scottish Ministers it will be taken into account by developers when applying for relevant statutory permissions such as consent under Section 36 of the Electricity Act 1989 and a Marine Licence under the Marine (Scotland) Act 2010. Considerable further work will be required to support decisions at this level, including environmental surveys and data collection, Environmental Impact Assessment (EIA) and Habitats Regulations Appraisal (HRA), which will include cumulative and in-combination effects. Further public engagement will form an integral part of the work at the project level which will also potentially include detailed socio-economic analysis at the project level.

### *Securing the Benefits*

- 1.5.6 The Scottish Government is committed to ensuring that Scotland capitalises on the enormous potential presented by renewable energy and the low carbon sector. Scotland's wave, wind and tidal energies, and its carbon capture and storage potential, is of European significance. Exploiting these technologies in an environmentally sustainable way will enable Scotland to lead the world in the transition to a low carbon economy over the next four decades. This will help meet our wider objectives on climate change, generating substantial new economic activity, jobs and prosperity for Scotland.

- 1.5.7 The Scottish Government believes that Scotland's people should benefit from offshore renewable energy projects. Scotland, and its local communities, should receive a direct and lasting legacy from the exploitation of our natural resources. Proposals to maximise community benefit from renewables were published in a consultation paper "Securing the Benefits of Scotland's Next Energy Revolution" in November 2010. These included actions designed to empower communities and ensure that the public sector leads by example in delivering real and lasting benefits. In addition, the consultation discussed the important role of CEC in the development of offshore low carbon projects and more broadly as an administrator of public assets. The Scottish Government is of the view that the management and revenues of CEC in Scotland should be devolved, bringing control over the seabed within the remit of the Scottish Parliament.
- 1.5.8 The Plan will address the potential for regional development and outline key environmental and socio-economic issues for developer consideration. SEA, HRA, Socio-economic and consultation initiatives that have been pursued to develop a balanced and pragmatic Plan, which is flexible enough to accommodate further developer ambition in the future. It is recognised that there is significant potential for offshore wind development in Scottish Territorial and Offshore Waters out to the 200 nautical mile limit. The Plan therefore includes short term options which have issues to be overcome but are considered to be suitable for development by 2020. It is also recognised that there is significant potential to explore further. The Scottish Government has engaged in dialogue to take forward further lease bidding to accommodate developers ambitions to deliver green energy.
- 1.5.9 The remainder of this document is split into two sections. These are the key outcomes of the plan development process:
- **PART A** – Sectoral Marine Plan for Offshore Wind Energy
  - **PART B** – Post-Adoption Statement

## **A. SECTORAL MARINE PLAN FOR OFFSHORE WIND ENERGY**

The Offshore Wind Sectoral Marine Plan contains proposals for offshore wind energy generation at the strategic level within Scottish Territorial Waters. It has been developed using Strategic Environmental Assessment, Habitats Regulations Appraisal, Socio-economic Assessment and Consultation Analysis. It contains a summary of the main headline findings from these plan making 'tools'<sup>15</sup>. This section includes:

- Plan Development Timeline
- Final Sectoral Marine Plan
- Plan Implementation

The Post Adoption SEA Statement (Part B) sets out more specific detail on the options for development and covers the issues which have been raised within consultation. As part of the next review process, Marine Scotland will expand the geographic scope of the Plan to cover Scottish waters within Scottish Offshore Waters out to the 200 nautical mile limit.

### **Plan Development and Timeline**

A.1 The Sectoral Marine Plan for Offshore Wind Energy has been developed through the following steps and key milestones:

1. CEC announcement and Scottish Government commitment to SEA
  - CEC announce 10 exclusivity agreements for sites for offshore wind developments in Scottish Territorial Waters - February 2009
  - The Scottish Government announce that an SEA will be undertaken - February 2009
2. Strategic Environmental Assessment (SEA) Screening and Scoping
  - SEA Screening and Scoping stages were completed by the Scottish Government - June 2009
  - SEA Screening and Scoping documents were consulted upon and finalised - August 2009
  - Five consortia were appointed under Official Journal of the European Union (OJEU) contract procedures to undertake marine planning work, including SEA - September 2009
3. SEA Environmental Report and Draft Plan
  - Halcrow appointed to undertake SEA Environmental Report and help produce draft Plan - November 2009
  - Steering Group formed with the Scottish Government Energy and Environment Directorates General and Consultation Authorities in December 2009

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<sup>15</sup> These documents can be viewed in full on the Scottish Government website

- Offshore Wind Industry Group (OWIG) requested the use of MaRS to identify additional development options - January 2010
  - Pre-consultation workshops held with relevant sectors, OWIG, and NGOs - January - February 2010
  - Steering Group and industry / environment NGOs requested MaRS scorings and weightings values set to be transparent and definitive - February 2010
  - Final pre-consultation workshop held with OWIG, SNH and fishing sector as final check before publication of SEA and draft Plan - May 2010.
4. Statutory Consultation and production of Consultation Analysis
- Offshore Wind SEA Environmental Report and Draft Plan published - May 2010
  - Statutory consultation undertaken over 12 weeks - May - August 2010
  - Consultation workshops held with aquaculture, fishing, shipping, aviation, recreation and tourism sectors - June - August 2010
  - Joint consultation held with environmental NGOs and Scottish Coastal Forum (SCF) - July 2010
  - Statutory Consultation extended by 6 weeks to September 2010
  - 17 Regional Workshops held - August - September 2010
  - 856 consultation written responses received
  - Consultation Analysis Report published - December 2010
  - 6 further regional workshops held to verify findings – January - February 2011
  - Addendum to Consultation Analysis produced as a result of further consultation workshops and published - March 2011.
5. Habitats Regulations Appraisal (HRA)
- SEA used to inform the HRA specification - May 2010
  - HRA specification developed by a steering group consisting of the Scottish Government, SNH, JNCC, environmental NGOs, Scottish Renewables and CEC - August 2010
  - HRA commissioned - October 2010
  - HRA published - March 2011
6. Socio-economic Assessment
- Socio-economic Assessment Specification developed - October - November 2010
  - Consultation Analysis used as baseline information for socio-economic assessment - December 2010
  - Consultants commissioned to undertake assessment - December 2010
  - Socio-economic Assessment informed by advisory group including shipping, fishing, tourism, aviation, relevant Local Authorities, Scottish Renewables, CEC and the Scottish Government
  - Socio-economic Assessment published - March 2011.

7. Plan and Post-Adoption Statement
  - Plan and Post Adoption Statement published - March 2011
8. Plan Review – Monitoring and Research
  - Plan Monitoring and further Research work will be taken forward in an initial 2 year review cycle
  - Advisory Groups, with relevant representation, will be formed to contribute to studies
  - Extension of the geographic scope to include Scottish Offshore Waters
  - Scoping and Regional Locational Guidance to establish further opportunities for development
  - Consultation and reporting will be undertaken if findings result in proposals to change the Plan.

### **The Final Sectoral Marine Plan for Offshore Wind Energy**

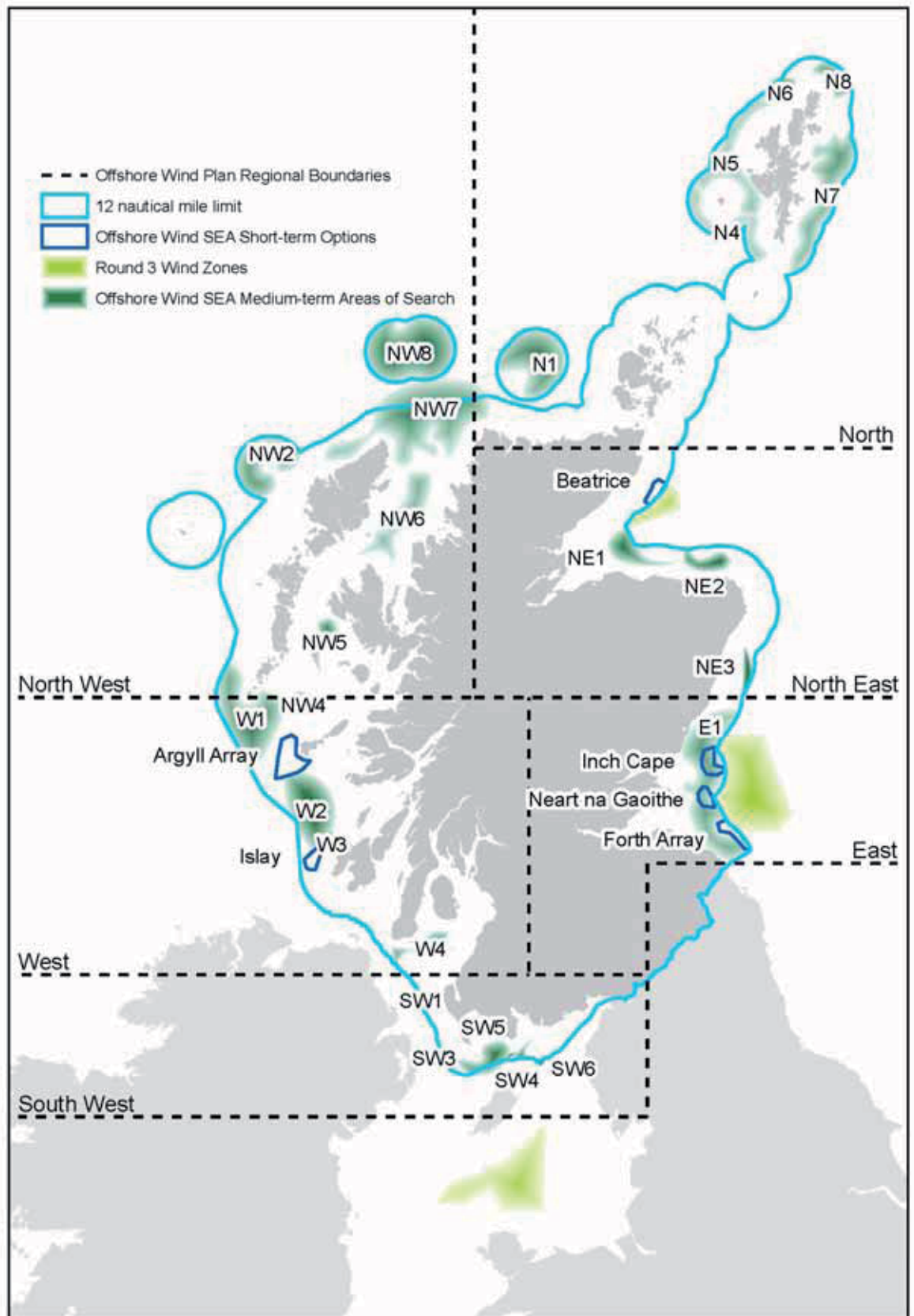
A.2 The Final Sectoral Marine Plan for Offshore Wind Energy contains 6 short term sites and 25 medium term areas of search. The 6 short term sites are:

- Islay
- Argyll Array
- Beatrice
- Inch Cape
- Neart na Gaoithe, and
- Forth Array

The 25 medium term areas of search remain the same as the consultation draft. **Fig.3** (below) contains a map of the final short term sites and medium term areas of search.



**Fig 3.** Short-term Sites and Medium Term Areas of Search (Final Plan)



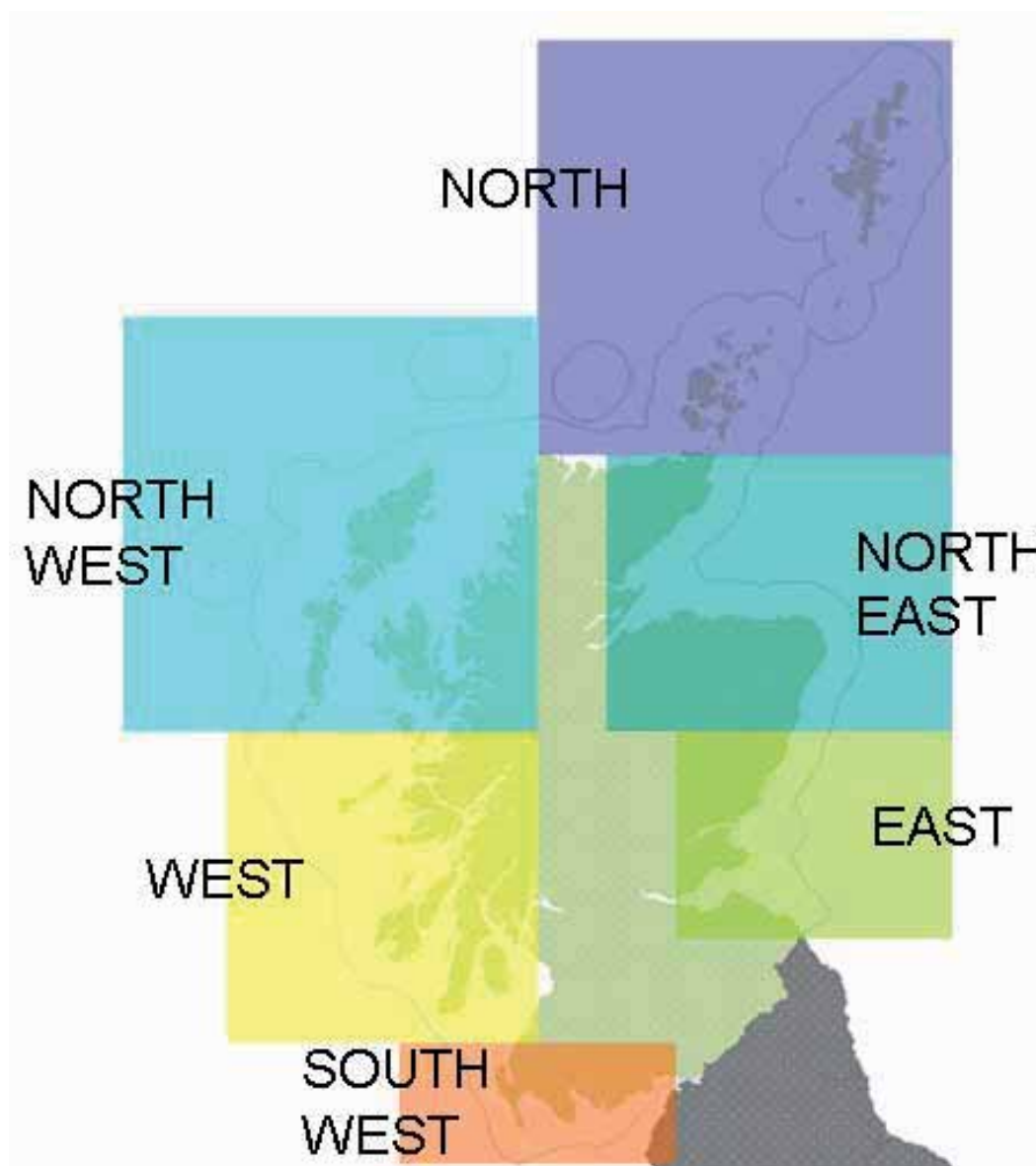


## Regional Opportunities and Issues

A.3 The following sections focus on the short-term sites and medium term areas of search identified on a regional basis within Scottish Territorial Waters<sup>16</sup>:

- East
- North East
- North
- North West
- West
- South West

**Fig. 4** Offshore Wind Plan Regions



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<sup>16</sup> It should be noted that these regions have no relationship with the Marine Regions being consulted upon under the Marine Planning Legislation

## **EAST**

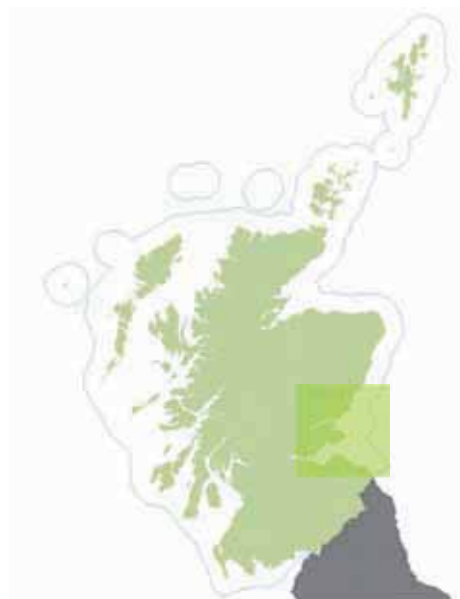
A.4.1 The East Region includes three short term sites and one medium term area of search which overlaps with the three short term sites. The short term sites are:

- Forth Array
- Inch Cape
- Neart na Gaoithe

The medium term option is:

- E1

*It should be noted that the Bell Rock site was withdrawn by CEC and the developer and will not proceed to the licensing stage.*



A.4.2 Recommendation:

- Evidence available at this stage suggests that the East region is a suitable region to progress the development of offshore wind in the short and medium term.
- The short term options within this region should therefore be taken forward to the licensing stage.
- Potential for effects including cumulative and in-combination effects on issues such as shipping and fishing will require careful consideration.
- There is also further opportunity for development in adjacent Scottish Offshore Waters.

A.4.3 Key Findings:

- There is significant potential for the development of the short term options.
- The development of the short term options appear at this stage to be publicly and environmentally acceptable.
- The region relates closely to areas where there is significant potential for economic investment and employment.

A. 4.4 Key Issues to be addressed:

- Shipping and navigation (access to the Forth and Tay Ports)
- Fishing
- Biodiversity
- Radar and defence activities
- Aviation

A. 4.5 Key Actions:

- Further analysis of cumulative effects (including the short and medium term options and the adjacent Round 3 area) should be undertaken to inform site licensing and the Plan review process.
- Further work is required in this Region and in adjacent Scottish Offshore Waters to consider whether other development proposals could be brought forward for consideration into the short term.
- Further liaison with shipping, fishing, aviation, defence and environmental sectors will be required for Plan review purposes.
- Further work, building on ongoing developer engagement in this region, should be undertaken to increase public awareness of the proposals and involve affected communities in their delivery.

## **NORTH EAST**

A. 5.1 The North East Region includes one short term site and three medium term areas of search. The short term site is:

- Beatrice

The medium term options are:

- NE1
- NE2
- NE3



A. 5.2 Recommendation:

- Evidence available at this stage suggests that the North East region is a suitable location to progress the development of offshore wind.
- The short term option within this region should be taken forward to the licensing stage.
- Medium term areas of search require further strategic assessment. Development within area NE1 in particular may be limited as a result of potential for significant visual effects.
- There is also further opportunity for development in adjacent Scottish Offshore Waters.

A. 5.3 Key Findings:

- There is significant potential for the development in the short term.
- The development of the short term option appears to be publicly and environmentally acceptable.
- The region relates closely to areas where there is significant potential for economic investment and employment.

A. 5.4 Key Issues to be addressed:

- Shipping and navigation
- Fishing
- Biodiversity
- Aviation and radar
- Defence activities

A. 5.5 Key Actions:

- Further analysis of cumulative and in-combination effects to include the Round 3 site should be undertaken to inform selection for the areas of search in the medium term. This will be addressed within the Plan review process.
- Further work is required in this Region and in adjacent Scottish waters to consider whether other development proposals could be brought forward for consideration into the short term.
- Further liaison with shipping, fishing, aviation, defence and environmental sectors will be required for licensing and plan review.
- Additional work should be undertaken to increase public awareness of the proposals and involve affected communities in their delivery.

## **NORTH**

A.6.1 The North Region has no short term sites and six medium term areas of search. The medium term options are:

- N1
- N4
- N5
- N6
- N7
- N8



A. 6.2 Recommendations:

- Evidence available at this stage suggests that the North region is a suitable region to progress the development of offshore wind.
- Medium term areas of search within this region require further assessment and could be suitable for consideration for development in the short term.
- Offshore wind should be recognised as an important part of the energy mix of Shetland and Orkney.
- Where feasible, further opportunities for offshore wind energy in this region should be pursued, in order to realise potential social and economic benefits.

A. 6.3 Key Findings:

- Development within the region should support, and not preclude, aspirations for marine energy generation.
- Most of the medium term options are confined to the area around Shetland. Those around Orkney are largely discounted as a result of a number of technical and environmental constraints.
- There is also further opportunity for development in adjacent Scottish Offshore Waters.

A. 6.4 Key Issues to be addressed:

- Shipping and navigation
- Fishing
- Biodiversity
- Aviation and radar
- Defence activities
- Cultural Heritage
- Recreation
- Community engagement

A. 6.5 Key Actions:

- Further analysis should be undertaken to inform site selection within the areas of search in the medium term. This will be addressed within the Plan review process.
- Further work is required in this Region and in adjacent Scottish Offshore Waters to consider whether other development proposals could be brought forward for consideration into the short term.
- Further liaison with shipping, fishing, aviation, defence and environmental sectors will be required
- Additional work should be undertaken to increase public awareness of the proposals and involve affected communities in their delivery.
- Grid availability and options need to be included within the Plan review process, including bringing medium term options forward into the short term and investigating further opportunities for development in the adjacent Scottish Offshore Waters.

## **NORTH WEST**

A.7.1 The North West Region has no short term sites and six medium term areas of search. The medium term options are:

- NW2
- NW4
- NW5
- NW6
- NW7
- NW8



A.7.2 Recommendation:

- Evidence available at this stage suggests that the North West region is suitable to progress the development of offshore wind.
- Medium term areas of search within this region require further assessment and could be suitable for development in the short term.
- Where feasible, further opportunities for offshore wind energy in this region should be pursued, in order to realise potential social and economic benefits.
- There is further opportunity for development in adjacent Scottish Offshore Waters.

A.7.3 Key Findings - Appraisal of Sustainability:

- The environmental constraints within the area should be recognised, but it is also important to take into account the aspirations for renewable energy development in this region, and the associated economic development opportunities.
- Development within the region should support, and not preclude, aspirations for marine energy generation.

A.7.4 Key Issues to be addressed:

- Shipping and navigation
- Fishing
- Biodiversity
- Recreation
- Defence activities
- Cultural Heritage
- Community engagement



A.7.5 Key Actions:

- Further analysis should be undertaken to inform site selection for the areas of search in the medium term. This will be addressed within the Plan review process.
- Further work is required in this Region and in adjacent Scottish waters to consider whether other development proposals could be brought forward for consideration into the short term.
- Further liaison with shipping, fishing, recreation, defence and environmental sectors will be required.
- Additional work should be undertaken to increase public awareness of the proposals and involve affected communities in their delivery.

## **WEST**

A.8.1 The West Region has three short term sites and four medium term areas of search. The short-term sites are:

- Argyll Array
- Islay
- Kintyre

The medium term options are:

- W1
- W2
- W3
- W4

*It should be noted that the developer has withdrawn from the Kintyre site.*



A.8.2 Recommendations:

- There is considerable resource potential in this region. At the same time, the region possesses particular environmental sensitivities, remote community identity and special coastal and island qualities which must be taken very carefully into account.
- **Argyll Array** and **Islay** – To proceed to the project stage, community-led scenario and masterplanning techniques should be developed to fully explore the onshore aspects of development, identify potential impacts of onshore development scenarios and the scope for mitigation. The communities and the developers must be assisted by Argyll and Bute Council, the Scottish Government and CEC to allow them to work together to achieve this.
- **Kintyre** - This site as chosen presents significant problems for the development of offshore wind. The significant strategic issues include a lack of public acceptability on environmental and visual impact grounds as well as impacts on existing and potential future investment opportunities.

As a result, the Scottish Ministers have decided that the **Kintyre site** is **unsuitable** for the development of offshore wind and should **not** be progressed as part of the Sectoral Marine Plan.

- Medium term areas of search within this region require further assessment. This will be addressed within the Plan review process.

#### A.8.3 Key Findings:

- The Argyll Array has the potential to benefit the community of Tiree, but could also result in adverse environmental impacts depending on the sensitivity of the proposals for both offshore and onshore elements. The sensitivity of the island's environment, existing infrastructure and sectoral activity as well as cultural fragility should be taken into account and in a partnership approach with the community, as proposals for the development begin to emerge.
- TheIslay site could also create adverse impacts due to the sensitivity of the island's environment and will require further assessment to address key issues including impacts on seascapes and landscapes, existing sectoral activity and community concern and would also benefit from effective community engagement.

#### A.8.4 Key Issues to be addressed:

- Communities
- Shipping
- Fishing
- Biodiversity
- Recreation
- Defence
- Seascapes and Landscapes
- Aviation
- Cultural Heritage

#### A.8.5 Key Actions:

- Further analysis should be undertaken to inform site selection within the areas of search in the medium term.
- Further work is required in this Region and in adjacent Scottish Offshore Waters to consider whether other development proposals could be brought forward for consideration into the short term.
- Further liaison with shipping, fishing, recreation, tourism, defence and environmental sectors will be required.
- Effective community engagement will be a significant consideration and scenario and masterplanning techniques will be required.
- Grid availability and options need to be included within the Plan review process.

## **SOUTH WEST**

A.9.1 The South West Region has two short term sites and five medium term options. The short-term sites are:

- Solway Firth
- Wigtown Bay

The medium term options are:

- SW1
- SW3
- SW4
- SW5
- SW6



A.9.2 Recommendations:

- To proceed to project level development in respect of the **Solway Firth** and **Wigtown Bay** sites, considerable work would be required to address a wide range of constraints. Evidence at this stage indicates that the following issues would require to be addressed:
  - Significant and potentially insurmountable challenges arising from strong public concern / opposition;
  - Considerable changes to the site boundaries and a substantial increase in the distance of the turbines from the shore would be required to address nationally significant landscape, seascape and visual effects;
  - Benefit for local communities and the regional economy would require to be proven to address the anticipated significant adverse effects of the developments.
- As a result, the Scottish Ministers have decided that the **Solway Firth** and **Wigtown Bay** sites are **unsuitable** for the development of offshore wind and should **not** be progressed as part of the Sectoral Marine Plan.
- Medium term areas of search will require further assessment. To proceed to the project stage the developers would need to address community concerns on environmental and socio-economic impacts.

#### A.9.3 Key Findings:

- There is strong opposition to offshore wind energy development anywhere within the Solway Firth.
- There is potential for significant visual effects on nationally significant designated landscapes and wider sensitive seascapes.
- The sites are likely to generate a wide range of further adverse environmental effects, particularly in relation to cultural heritage and biodiversity (birds, marine mammals and fish).

#### A.9.4 Key Issues to be addressed:

- Communities
- Shipping
- Fishing
- Biodiversity
- Recreation
- Defence
- Economic Impact
- Cultural Heritage
- Seascapes and Landscapes

#### A. 9.5 Key Actions:

- Further detailed assessment would be required to address the many environmental and technical constraints identified in this region.
- Further analysis would require to be undertaken to inform site selection within the areas of search in the medium term.
- Further liaison with shipping, fishing, recreation, defence and environmental sectors would be required.
- Further work and liaison with Dumfries and Galloway Council and the communities would be required to underpin any proposals to prove positive socio-economic effects from any development.

## PLAN IMPLEMENTATION

A.10 Implementation of the Plan will require the successful integration of the following measures:

- Key Considerations
- Key Actions
- Mitigation Measures
- Guidance for Future Assessments
- Review – Monitoring & Research

The remainder of this section will address these measures.

### Key Considerations

A.11 The following measures require consideration, as appropriate, as the implementation of the Plan progresses:

- **Community and Stakeholder Engagement** - Communities, stakeholders and organisations have expressed their views on the SEA Environmental Report and draft Plan and these have been taken into account in the final version of the Plan. It is essential that communication with these groups, and the wider public, continues as implementation progresses. In particular, further liaison with the shipping, aviation, tourism, recreation and commercial fishing sectors, and other users of the sea and coastal environment in a partnership culture will be essential to the successful delivery of the Plan. Public acceptability is seen as a main issue in the development and delivery of sustainable development and the Scottish Government will promote techniques to involve local government planning authorities and communities within Plan review processes and at the project level, including scenario and master-planning and other inclusive good practice techniques.
- **HRA (leading to Appropriate Assessment) at the Project Level** - The strategic level HRA concluded that it would be feasible to take forward the short term development options without adversely affecting Natura sites, subject to the deployment of effective mitigation measures. However, further work is required due to the strategic HRA findings, which will include HRA at the project level, taking into account regional cumulative and in-combination effects. This may render some of the sites unavailable, if appropriate mitigation measures cannot be applied to specific projects. Further testing of medium term options will also be required to ensure these and any sites selected within their boundaries can also be taken forward in a way which avoids generating adverse impacts.
- **Cumulative and In-combination Effects** – Further assessment work at the regional level is required to address these effects. Issues such as the scheduling of the development of projects within Scottish

Territorial and Offshore Waters should be carefully monitored. There is a need to ensure that cumulative and in-combination effects are fully recognised and taken into account at the regional and project level through Plan monitoring and review. In addition, developer-led work should contribute to addressing these issues in a suitable and effective manner.

### **Key Actions**

- A.12 The design of the Plan required a set of strategic assessments and actions to deliver the sustainable development of offshore wind. The identified strategic Actions reconcile a commitment to the development of offshore wind with the views and concerns of stakeholders and the public. These Actions are informed by the evidence base set out in the Post Adoption Statement (**PART B**).

#### **ACTION 1- FURTHER LEASE BIDDING ROUND FOR SCOTTISH WATERS**

- Development of the Plan has raised a number of significant issues and challenges. The assessment and consultation findings in particular have begun to articulate where, in regional and spatial terms, this type of development may, or may not be, publicly and environmentally acceptable, but not at the project level where mitigation or further work could have a bearing on the issues of acceptability. However, this work has also led to an appreciation of the further opportunities for development in both the short and medium term. There are potential opportunities for medium term options, following revisiting of work, to be found suitable for development in the short term or early in the medium term. There is also scope to find further opportunities for offshore wind energy development in both the short and medium term - in addition to our Round 3 sites - once geographic coverage of extends beyond Scottish Territorial Waters into Scottish Offshore Waters.
- As detailed above, some substantive development constraints have been identified that will require further consideration at the regional and project level. In particular, a number of sites located in environmentally sensitive areas and / or close to shore have raised significant levels of public and stakeholder concern.
- It is proposed that further work is undertaken with developers and CEC to identify additional alternatives for development within Scottish waters. This will be subject to the sustainability appraisal approach used for the Sectoral Marine Plan, to ensure that significant adverse effects will be mitigated. These assessments / appraisals will be taken forward as appropriate to facilitate lease bidding and incorporated into the Plan at the two year review stage.

**ACTION 2 - A MULTI-SECTORAL HIGH LEVEL STEERING/ADVISORY GROUP WILL BE ESTABLISHED TO OVERSEE PLAN IMPLEMENTATION**

- Offshore wind energy development has the potential to affect other users of the sea, including those with interests in fishing, shipping, recreation, tourism, environment and the communities around the coast.
- The needs of other users of the sea and coastal communities will continue to be explored and taken into account as implementation of the Plan progresses. The Marine Strategy Forum will have a standing item on its agenda and will be asked to reflect on progress and ensure that all relevant sectors are provided with an early opportunity to identify strategic and regional issues requiring further consideration.
- Individual advisory groups will be set up to develop monitoring and research specifications and review outputs of relevant studies with appropriate representation to the satisfaction of the Marine Strategy Forum.

**ACTION 3 - THE EVIDENCE BASE UNDERPINNING THE PLAN AND ITS SEA WILL BE SUBJECT TO FURTHER REVIEW**

- CEC's MaRS model was used to identify medium term options for consideration alongside the short term sites within the SEA. This is a marine spatial planning tool which contains more than 400 data layers. The model can be used to plot data layers with different values related to the variable scoring and weighting values applied to the layers.
- The application of MaRS was discussed with key stakeholders and the SEA steering group during the preparation of the draft Plan. It was acknowledged that a consensus view on an acceptable set of scorings and weightings would prove difficult to achieve. To progress this, a simplistic approach was agreed for the scoring and weighting of datasets to ensure transparency for statutory consultation purposes. However, due to this approach it was also recognised that the model would require further development and refinement within the Plan review process.
- In response to concerns from certain sectors about the weightings and scorings applied (see Part B1 of the Post Adoption SEA Statement, Marine Scotland Science (MSS) revisited the earlier MaRS modelling work to identify the medium term options (2020-30). This work has shown that the output from MaRS can vary significantly, depending on the datasets used and their associated weightings. As a result, the Scottish Government will work with the Marine Strategy Forum and other stakeholders to consider further MaRS modelling sensitivity testing and model normalisation techniques. This will result in the revisiting of the medium term options identified as having development



potential within the Plan. In the meantime these options have the status of areas of search.

- A number of other issues were identified during the SEA about the quality, availability and accuracy of environmental baseline data. The HRA and Socio-economic Assessment have additionally identified further research needs, on the basis of known gaps and uncertainties. A framework for addressing these gaps is provided in B.5 of the Post-Adoption Statement.

**ACTION 4 – THE PLAN WILL BE INTERFACED WITH THE DEVELOPING MARINE RENEWABLES PLAN AND INCORPORATED INTO THE NATIONAL MARINE PLANNING SYSTEM**

- The Plan focuses on the opportunities and challenges arising from offshore wind energy in Scottish Territorial Waters. Work has commenced on a similar Plan for Marine Renewables (wave and tidal energy) in Scottish Waters. Both sectoral plan processes will seek to integrate work to ensure cumulative and in-combination issues are recognised so they can be assessed. The key recommendations from these sectoral plans will be integrated into the National Marine Planning System. Further consultation and a sustainability appraisal of the National Marine Plan will also be undertaken. This will allow for further consideration of the interactions between renewable energy, the marine environment and other users of the sea.

**ACTION 5 - FURTHER INTEGRATION OF ON AND OFFSHORE PLANNING**

- There is an identified need to ensure that offshore development links with onshore aspirations and sensitivities. More work is required, for example, to develop a strategic approach to assessing socio-economic impacts at the regional level (including Business Regulatory Impact Appraisal) and to link development in areas where there is particular intention to invest in development or economic strategies which are not complementary to offshore wind, or where complementary infrastructure and manufacturing facilities will facilitate offshore wind development. The Scottish Government will therefore work with key interest groups to identify practical actions for achieving this. Development planning for land use has a key role to play in ensuring that onshore aspects of development are delivered in an appropriate way.
- There is a recognised need to identify and deliver the reinforcement and further development of Scotland's onshore and offshore grid network that will connect and transport Scotland's energy potential, deliver a low carbon generating mix and ensure security of future energy supply. The Scottish Government will continue to work with UK and EU Governments, Ofgem and transmission system operators in a number of strategic groupings envisaging future grid offshore network

at UK and EU level and the required onshore grid to accommodate offshore energy. The aim is to ensure Scotland capitalises on the enormous potential presented by renewable energy from Scotland's wave, wind and tidal energies and to developing and reinforcing onshore and offshore grid in Scotland that can connect and transport renewable energy from the sites of best resource in and around the coast of Scotland.

- A scenario / masterplan pilot study is being progressed for Tiree, in relation to the Argyll Array, with the intention to roll this approach out for Islay in relation to the Islay array. This approach will be led by the planning authority - Argyll and Bute Council - in partnership with the Scottish Government, CEC, HIE, the developers and with the relevant communities represented. This work should provide a means of testing where the related onshore development can be progressed in an inclusive manner with the community able to contribute effectively to the development process, promote community views on acceptability and gain better understanding of the rationale behind decisions. The Scottish Government anticipate that if successful, this approach could be applied to other short and medium term options and to Regional Marine Planning.

#### **ACTION 6 – APPLICATION OF STRATEGIC LEVEL INFORMATION**

- The high-level environmental and socio-economic information used for the Sectoral Marine Plan for Offshore Wind Energy should provide a starting point for more region-specific assessment and help steer project level work. The process of Marine Licensing should give due consideration to the Plan and the plan-making tools of SEA, HRA, Socio-economic Assessment and the Consultation Analysis. The information within these documents, this Plan and the Post Adoption Statement will help define the scope of any required assessments for specific development proposals.
- Regional level analysis will play a crucial role in bridging the gap between the strategic and project levels. As a condition of the lease agreements, CEC requires developers to work together on a regional basis to undertake cross-cutting data collection and analyse potential cumulative and in-combination effects in more detail. These groups of developers will form a focus for translating high level assessment findings at the project scale. The Scottish Government will work with these groups to ensure that there is an appropriate interface between their work and the future monitoring and research coming from the various plan-making tools. Marine Scotland Licensing Operations Team will however have the main role of considering screening, scoping and assessment requirements for licensing purposes.

## **Mitigation**

A.13.1 The application of appropriate mitigation measures is key to the sustainable development of Offshore Wind. These measures should be used to avoid or reduce the impacts of development proposals.

A.13.2 The SEA Environmental Report identifies measures to address potentially significant adverse impacts on the environment. The HRA identifies measures to ensure that development does not result in impacts on the integrity of internationally protected European sites. This section identifies:

- Mitigation Measures; and
- Guidance for Further Assessments

A.13.3 The following measures will require consideration, as appropriate, for all of the sites and options:

## ***Pollution***

- Measures to reduce pollution risks arising during construction, operation and decommissioning of the developments
- Application of best practice marine construction procedures for the prevention and control of spillages and discharges of harmful substances to the marine environment, for sediment mobilisation and associated turbidity and secondary effects on marine and benthic fauna

## ***Nature Conservation***

- Key areas of nature conservation for species and habitats (e.g. designated sites, flight corridors and migratory routes, commuting routes between feeding grounds and nesting sites) and fisheries value (e.g. spawning grounds) should be subject to HRA / Appropriate Assessment, where appropriate, influence the positioning and subsequent design of potential developments.
- Specific impacts on species and habitats (including fisheries) should be reduced through appropriate design (e.g. minimising footprint of the development to minimise loss or damage to seabed habitat), and selection and use of appropriate construction (e.g. timing to avoid key seasons; selection of low noise and minimal vibration installation technologies; utilisation of 'soft start' practices for plant and vessels to minimise disturbance and allow mobile species to move away from areas of disturbance) and operation methods (e.g. use of noise attenuation technologies)
- Any mitigation measures identified as part of future studies on migratory fish should be taken into account. (see PART B.5)

### ***Landscapes and Seascapes (Visual Amenity)***

- Offshore wind developments should, in general, take into account the existing character and quality of the seascape, how highly it is valued and its capacity to accommodate change.
- Offshore wind development proposals should seek to avoid or mitigate detrimental impacts on the settings of World Heritage Sites.
- Offshore wind development should take account of the impacts on the special qualities for which a National Scenic Area is designated. Consideration should be given to factors such as size of offshore wind devices, number of devices or scale of development, distance from the NSA and sensitivity of the NSA setting. Proposals that significantly affect NSAs should normally be permitted where:
  - It will not adversely affect the integrity of the area or the qualities for which it has been designated
  - Any such adverse effects are clearly outweighed by social, environmental, climate change, or economic benefits of national importance
- Offshore wind developments should, where possible, incorporate advice contained in the Offshore Wind and Marine Renewables Licensing Manual in the planning and design stage.

### ***Recreation***

- Developments should avoid RYA cruising routes and areas of known high recreational activity and importance through appropriate positioning within the option boundary. Specific impacts should be reduced through appropriate design and selection and use of appropriate construction and operation methods.

### ***Built Environment and Marine Archaeology***

- Developments should be fully assessed to identify and mitigate their effects on listed buildings and scheduled sites (and their settings) and wrecks (both designated and non-designated) where possible through appropriate positioning within the option boundary, and where impacts cannot be avoided, these should be reduced through appropriate design.

### ***Shipping***

- Developments should avoid shipping routes where possible through appropriate positioning within the option boundary. Where impacts cannot be avoided, these should be reduced through appropriate design. In the case of many of the sites and options, full navigation risk assessments are expected to be required, at a regional and / or site specific level. Cumulative effects require further work within the Plan review process and could be required at the project level.

### ***Fishing***

- The Scottish Government encourages offshore wind energy developers to actively engage with national and local fishing organisations to ensure that fishing activities can continue with minimal disturbance. The knowledge and expertise of the marine environment which exists within this sector should be utilised to ensure the sustainable development of offshore wind energy in Scottish Territorial and Offshore Waters.
- Developments should be fully assessed to identify and where possible mitigate their effects on fishing activity. Fishing grounds of particular economic importance to coastal communities, where known, should be avoided or the effects of development mitigated through appropriate positioning within the option boundary. Cumulative effects on fishing and potential effects of displacement of fishing activity require further work within the Plan review process and at the project level.
- There is an identified need for better information on the distribution of fishing activity, especially small vessels which are not covered by Scottish Government vessel monitoring scheme. The Scottish Government is working with the Scottish Fishermen's Federation to develop a method to map fishing activity and a pilot study in the Pentland Firth and Orkney Waters. If the methodologies prove tractable and robust they will be rolled out in other sea areas. It is anticipated roll out will be prioritised in consultation with Scottish fishing industry representative bodies. The fishing activity data gathered at the regional level will be used to inform the plan review and project level assessments.

A.13.4 Further work has been undertaken to identify key recommendations for specific site and option areas. These are detailed in the Post Adoption Statement (**Part B**).

### **Guidance for further Assessments**

A.14 In addition to the specific regional and option specific recommendations, all of the options will require the following additional assessments:

- Assessment of the effects on water quality, including shellfish waters, hydrodynamic and water quality modelling at the project level.
- Assessment work to reduce current uncertainty regarding impacts on coastal processes. Sediment dynamic modelling will be required at the project level. The location and arrangement of structures will need to be optimised to mitigate any issues of erosion or deposition and resulting impacts on sensitive aspects of the environment.
- Further socio-economic evaluation of the effects of developments will be required at the project level. Developers will be expected to establish a net benefit from their proposals overall, for the people of Scotland and the proximate communities affected by the developments.

### **Review – Monitoring and Research**

#### *Monitoring*

A.15 The SEA and HRA establish clear proposals for monitoring the environmental effects arising from the Plan. Details of these measures are contained within the Post Adoption Statement.

#### *Research Studies*

A.15.1 A range of research studies to inform development of the Sectoral Marine Plan for Offshore Wind Energy have been identified. The Post Adoption Statement provides a detailed description of future and potential future studies at both the national and regional level.

## LIST OF ABBREVIATIONS

AA – Appropriate Assessment  
CEC – Crown Estate Commissioners  
EIA – Environmental Impact Assessment  
EU – European Union  
ghge – Greenhouse Gas Emissions  
GW – Giga Watt  
HRA – Habitats Regulations Appraisal  
JNCC – Joint Nature Conservation Committee  
MaRS – Marine Resource System  
MPS – Marine Policy Statement  
MSP – Member of the Scottish Parliament  
NGO – Non-governmental Organisation  
N-RIP – National Renewables Infrastructure Plan  
NSA – National Scenic Area  
PAS – Post Adoption Statement  
RLG – Regional Locational Guidance  
RSPB – Royal Society for the Protection of Birds  
RYA – Royal Yachting Association  
SAC – Special Area of Conservation  
SCF – Scottish Coastal Forum  
SEA – Strategic Environmental Assessment  
SFF – Scottish Fishermen’s Federation  
SNH – Scottish Natural Heritage  
SOW – Scottish Offshore Waters  
SPA – Special Protection Area  
STW – Scottish Territorial Waters  
UK – United Kingdom  
WDCS – Whale and Dolphin Conservation Society  
WHS – World Heritage Site

## LIST OF FIGURES & TABLES

**Fig.1** Marine Planning Legislative and Policy Framework  
**Fig.2** Short-term Sites and Medium Term Areas of Search  
**Fig.3** Short-term Sites and Medium Term Areas of Search (Final Plan)  
**Fig.4** Offshore Wind Development Regions

**Table 1:** Estimated annual costs to other marine users between Low and High Impact Scenarios (£m, Real Terms)

**Table 2:** Estimated total costs to other marine users between Low and High Impact Scenarios (£m, discounted over 50 years, rounded to nearest £m)



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