

## **Non-Technical Summary**

### ***Introduction***

The National Renewables Infrastructure Plan (N-RIP) has been developed by Scottish Enterprise (SE) and Highlands and Islands Enterprise (HIE) to support the development of a globally competitive offshore renewables industry (wind, wave and tidal) based in Scotland.

The N-RIP has been progressed in stages, focussing on offshore wind initially. A Strategic Environmental Assessment (SEA) was undertaken during the development of this stage and the results published in an Environmental Report in August 2010. HIE has progressed work on the wave and tidal sector, the results of which have been published in the Highlands and Islands Marine Renewables Infrastructure Plan (MRIP). Alongside this process, an SEA has also been undertaken. The resultant findings of the SEA are collated in this Addendum to the original Environmental Report (ER) prepared for offshore wind.

This Non-Technical Summary describes the content of the addendum Environmental Report for MRIP.

### ***The Marine Renewables Infrastructure Plan (MRIP)***

The MRIP aims to support the development of wave and tidal energy in Scotland, and to ensure that appropriate infrastructure (workshop buildings, port facilities and transport links etc.) is in place to support manufacturing, assembly and installation, and operation and maintenance of devices.

This development of the MRIP focused initially on providing the marine industry view on the infrastructure and marine resources that would be required, and identifying around 50 ports, harbours and fabrication facilities around the Highlands and Islands that could meet these needs. A draft MRIP has been published for public consultation<sup>1</sup> alongside the Environmental Report.

It is worth noting that none of the proposed MRIP sites would involve construction of new ports, with almost all being already in use for a variety of activities, including use as ferry terminals and/or in support of fishing, recreational and cargo vessels, and cruise liners. As a consequence, it has been assumed that all proposed activities will use existing infrastructure at the ports and harbours, whilst identifying the possibility that new workshop buildings may be required at some sites.

In terms of this SEA, it has been assumed that the proposed sites will be utilised for one or more of the following activities:

- manufacturing of wave and tidal device components;
- onshore facilities to support assembly/construction and installation;
- operations and maintenance activities; and
- wet storage/refuge/unplanned maintenance of devices.

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<sup>1</sup> [www.hi-energy.org.uk](http://www.hi-energy.org.uk)

## ***Strategic Environmental Assessment***

SEA is a means of considering the environment when preparing public plans, programmes and strategies (PPS). Undertaken alongside the development of a PPS, the SEA process can identify potential significant environmental effects and, where necessary, propose how these effects can be avoided or reduced.

Undertaken in accordance with Environmental Assessment (Scotland) Act 2005 (the 2005 Act), this SEA has considered the potential for significant environmental effects at each of the proposed MRIP sites, whilst also examining potential cumulative and synergistic effects, monitoring requirements and likely interactions between sites and existing activities in the marine environment.

The consultation on both the MRIP and its SEA also provides an opportunity for the public to express their views on proposed plan and the findings of this SEA.

### ***What are the relevant related policies?***

The development of MRIP fulfils a key action in the Scottish Government's Renewables Action Plan published in June 2009. This Plan, and many other wider plans and strategies, have set out a range of ambitions and proposals for the development of Scotland's offshore renewable energy including European, UK and Scottish Government energy, marine and climate change policy.

### ***Current State of the Environment***

**Biodiversity** – A number of national and international sites which have been designated for their biological importance are located within the overall geographic scope of the plan, and these provide protection for the many high quality and sensitive marine habitats and species around the coastlines of Scotland's islands and its mainland. Some proposed MRIP sites are located in or adjacent to designated areas, introducing the potential for development of this type to place pressure on both terrestrial and marine species and habitats.

**Population and human health** – Scotland's coastline and waters are used for a variety of industrial and recreational activities. While many activities in coastal and marine environments can be undertaken with little impact on others, there is the potential for conflicts between some activities. The main risk to human health in the marine environment is from accidents as a result of vessel collisions with other craft and offshore structures. Disturbance from noise has also been identified as a potential pressure to human health. However, many marine recreation opportunities make an important contribution to improving human health, as well as coastal economies.

**Water Quality** – Negative impacts on water quality can have a detrimental impact on not just the habitats and species that reside in these areas, but also the activities that use these waters and particularly those requiring high water quality (e.g. bathing, shellfish aquaculture). Some 84 coastal waters in Scotland have been designated 'shellfish growing waters' with these areas predominantly located on the west coast

of the Scottish mainland and the islands. Scotland has 80 coastal bathing waters and the quality of these has steadily improved over recent years. Key pressures on the quality of the water environment include contamination as a result of marine activities, pollution from transport, and diffuse and point source pollution of coastal waters from land-based activities.

**Climatic Factors** – Average temperatures in all parts of Scotland have been rising since the early 1960s and over the last three decades, sea-surface temperatures around the UK coast have risen by around 0.7°C. At the same time, our seas are becoming more saline and acidic, particularly those to the north and west of Scotland, as increasing amounts of atmospheric carbon dioxide are absorbed at the sea surface. There is clear indication that the effects of climate change are already affecting the marine environment, and this is also likely to increase the vulnerability of some habitats and species to added pressures in the future.

**Air Quality** – Poor air quality, when pollutants exceed set acceptable levels, can lead to an area being declared as an Air Quality Management Area (AQMA). AQMAs are predominantly located in urban areas and largely result from transport emissions.

**Soil** – Coastal erosion is estimated to be affecting around 12% of Scotland's coastline, with areas such as the east coast from Montrose to Dunbar, the Firth of Clyde, the Inner Moray Firth, Orkney, Shetland and the Western Isles identified as being under particular pressure. Human activities have played a significant role in coastal erosion in recent times through practices such as land reclamation and the construction of infrastructure such as harbours, jetties and marinas.

**Cultural Heritage** – A wide range of historic built and archaeological sites can be found on the foreshore and seabed around Scotland, ranging from the remains of ships and aircraft lost at sea, to sites such as historic piers, lighthouses and other structures located at the coastal fringe. Whilst many have been recorded, it is thought that many historic sites remain unreported as archaeological sites, particularly around the Orkney, Shetland and Western Isles.

**Landscape/Seascape** – Scotland's seascapes are highly valued, with diverse character and scenic quality. Features such as machair plains, cliffs, dunes and sandy beaches, islands, sea lochs and firths, and rocky headlands can be found along many coastlines. Although there are many settlements on the coast, less than 15% of the length of Scotland's coastline has been developed. Much of the coast has a natural character and some areas provide a sense of wildness, particularly those in the west, north and north-west of the Scottish mainland.

**Material Assets** – Scotland's marine environment plays an important role in supporting a wide range of marine sectors such as aquaculture, fishing, offshore renewables and oil and gas, recreational activities and shipping and ferry services which play a significant role as a foundation for much of Scotland's economic output. This sector plays a vital role in providing employment opportunities for many coastal communities, particularly those in the islands and remote areas of the mainland.

### ***Consideration of Reasonable Alternatives***

The Environmental Assessment (Scotland) Act 2005 requires that in addition to assessment of the likely significant environmental effects of the Plan, the SEA must also identify and assess reasonable alternatives to the Plan. In development of the draft MRIP, a long list of potential sites have been identified and assessed; all of which are considered to be reasonable alternatives.

It is noted that at this stage, there is no absolute certainty regarding the time at which activities at the different sites may commence, as this is likely to be dependent on market interest. Accordingly, alternatives which would have involved different development schedules or types of marine devices have not been considered in this SEA.

### ***Assessment Findings and Proposed Mitigation***

The SEA identified a range of potential environmental issues that may require further consideration at the project level. It has also identified a range of mitigation measures that, if implemented, should aid in reducing or avoiding these potential adverse environmental effects. The key findings of the SEA are presented below.

#### *Biodiversity, flora and fauna*

Many of the key issues identified for biodiversity, flora and fauna in this SEA are likely to require further consideration at the project level. These include:

- *Benthic (seabed) habitat*: the use of anchors is likely to result in abrasion of habitat on the sea floor, with resultant loss of flora and fauna. This is a particular issue where benthic habitat is a qualifying interest of a designated site. The key mitigation proposed is likely to be to avoid wet storage on these sites. If wet storage is to take place at these MRIP sites, then suitable alternative locations must be identified and surveyed.
- *Birds*: risk of disturbance and/or displacement of birds, has been raised as an issue, particularly red-throated diver given that this species does not tend to acclimatise easily to change. Effects are likely to be temporary, depending on location, duration and frequency of storage activities. Mitigation measures such as the timing of storage activities and vessel movements to avoid periods of sensitivity (e.g. breeding season) should reduce the potential for adverse effects.
- *Seals*: risk of disturbance and displacement of seals from haul out sites through vessel movement and wet storage of devices. There is also a risk of corkscrew injury (resulting in death) to grey and harbour seals from certain vessels. Mitigation measures include avoiding use of vessels with ducted propellers for slow-speed activities, using vessel routes passing seal protected areas when accessing harbour areas, and avoiding the storage of devices near seal haul out locations, particularly during breeding season.
- *European Protected Species – Cetaceans*: are likely to be passing through waters in the environs of the MRIP ports. There is a risk of disturbance and/or displacement, collision and entanglement in anchoring lines. By avoiding cetacean habitat and migration routes and using high-visibility mooring lines to prevent entanglement, adverse impacts should be avoided.

- *European Protected Species – Otters*: May potentially be present at all MRIP sites and be adversely affected through disturbance (noise, physical presence of devices and human presence) during wet storage activities. It is likely that otter survey will be required as part of the marine licensing process, to ascertain where otters and wet storage activities may interact, so that these can be avoided. Assuming that mitigation is implemented, significant environmental effects should be avoided.

### *Population and Human Health*

Most MRIP sites have residential populations adjacent to or in the environs of the harbour. There is likely to be increased boat traffic due to the movement of devices, which could result in noise and disturbance to local residents. However, given existing levels of vessel movements, this effect is unlikely to be significant.

Some site activities (such as assembly) are likely to give rise to additional noise during site operations. For those in proximity to residential areas, this could give rise to noise disturbance to residents. Given the nature of existing activities in these harbours, and the fact that at least some of this work will be undertaken in buildings rather than out in the open, it is unlikely that this will add significantly to existing noise levels. Site protocols and/or good neighbour agreements should be adhered to and it is recommended that noise assessments are undertaken and that the results are consulted on, at an early stage, with residential neighbours. Assuming that mitigation is implemented, it should be possible to avoid significant environmental effects.

### *Air*

There is likely to be increased boat traffic due to the movement of devices, which could result in increased atmospheric emissions. However, given existing levels of boat movements, these additional emissions are unlikely to result in significant effects.

### *Climactic Factors*

Most MRIP sites are within an indicative 200-year flood zone which means that they are at risk of flooding from the sea. Port owners will need to ensure that they employ suitable design measures at some point in the future to increase defensibility and mitigate the adverse effects of potential sea level rises.

There is likely to be an increase in greenhouse gas (GHG) emissions due to vessel movements associated with harbour and wet storage operations. However, emissions from vessels are unlikely to contribute significantly to those from the existing Scottish fleet.

### *Water and the marine environment*

The wet storage of devices has the potential to adversely affect water and the marine environment through increased turbidity (clouding of the water from stirring up sediment) arising during anchoring of devices or storage directly on the seabed. This would have localised, temporary adverse effects on water quality in general and on shellfish growing waters in particular. Developers should consider whether there are anchoring methods which would not result in increased turbidity. Assuming mitigation is implemented, significant adverse environmental effects may be avoided.

### *Soil, Geology and Coastal Processes*

Wet storage of devices has the potential to affect coastal processes through changes to patterns of erosion and accretion resulting from the presence of devices in the water. This would mainly affect shoreline characterised by saltmarsh, mudflats, sandflats, machair and sand dunes. These effects could range from temporary to permanent, depending on storage location, duration and frequency. Devices should be stored away from these areas. Assuming that mitigation is implemented, adverse environmental effects could be avoided.

### *Cultural Heritage*

Wet storage of devices which are on or break the water surface are unlikely to affect the setting of Scheduled Monuments or listed buildings. However, there are several harbours where Scheduled Monuments are in or adjacent to the harbour, and where wet storage of devices could affect the setting of the monument, such as at Dunivaig Castle in Lagavullin and the standing stones at Callanish. Developers should avoid wet storage of devices in these areas.

Many of the waters in the environs of the MRIP sites contain wreck sites. Wet storage of devices on these wreck sites would destroy their historic features which would be a permanent effect. Developers should try to avoid wet storage on wreck sites but where this is not possible, they should undertake survey and recording of wrecks prior to storage taking place. Assuming that mitigation is implemented, significant environmental effects should be avoided or reduced.

### *Landscape/Seascape and Visual Effects*

During wet storage, devices will either sit on the surface of the water or be significantly above the water surface prior to installation and this may have adverse landscape/seascape and visual effects. These effects have the potential to be significant but are likely to be local and temporary in nature. Several of the MRIP ports are in the environs of National Scenic Areas but given the temporary nature of wet storage and, in general, the distance of the wet storage sites from the NSAs, it is unlikely that their special qualities would be affected. Developers should undertake landscape and visual assessment and, where necessary, should locate devices away from areas with such overall views. Assuming that mitigation is implemented, the potential for significant adverse effects should be reduced.

Some sites will require new building construction but the significance of the effect would depend on the location of the building within the port and its existing design features.

### *Material Assets*

Wet storage of devices could affect a number of material assets:

- *Access to harbours and navigational safety:* Significant adverse effects should be avoided by ensuring that wet storage sites are located away from access points to the harbour and are appropriately lit and/or marked.
- *Fishing grounds:* the wet storage of devices could result in disturbance of and/or displacement from local fishing grounds with consequent adverse socio-economic and community effects and the intensification of fishing elsewhere. Developers should hold discussions with relevant fisheries groups/fishermen and ensure that wet storage of devices avoids local fishing grounds.
- *Tourism and recreation:* The wet storage of devices could block recreational cruising routes, displace vessels from moorings/anchorages and disturb and displace surfers and paddle sports enthusiasts. This would result in the temporary loss of such recreational areas during storage operations, with subsequent local socio-economic loss.
- *Aquaculture:* damage to existing aquaculture infrastructure could be avoided by locating storage away from aquaculture sites and by agreeing suitable exclusion distances with operators.
- *Geoparks Shetland:* short-term storage of devices directly on the seabed is unlikely to result in significant adverse effects on features of importance to the designation and would therefore have no resultant economic effects.

### *Common Issues - Assumed mitigation*

During the SEA, a number of potential environmental effects were identified which are likely to be mitigated by port operators at the project level as a routine part of operations. These are issues with which port owners are familiar, and are not specific to the potential offshore renewables use and include accidental spills of oils or chemicals, dust suppression and the discharge of ballast water, amongst others.

### *Cumulative Effects*

Collectively, the proposals may have adverse effects from wet storage on the following receptors:

- *Loch Roag:* wet storage is proposed at several sites in Loch Roag, with resultant potential adverse effects including the disturbance/displacement of birds; corkscrew seal injuries; effects on navigational safety; possible disturbance and/or displacement of fishing and recreational sailing, and possible damage to existing aquaculture infrastructure.
- *Moray and Cromarty Firths:* storage of devices and vessel movements has the potential to disturb bottlenose dolphin.

- *Corkscrew injuries to seals*: vessel movements have the potential to increase the risk of corkscrew injuries to seals. This is a potential cumulative adverse effect from sites in Shetland, Orkney, the Western Isles and the east coast of Scotland, particularly the Firths of Forth and Tay.
- *Red-throated diver (Shetland/Orkney)*: In Orkney, activities at Stromness, Hatston, Kirkwall and Lyness have the potential to disturb and/or displace red-throated diver. In Shetland, this could occur at Baltasound, Cullivoe and Uyeasound.
- *Fishing grounds*: Wet storage of devices has the potential to cumulatively adversely affect inshore fishing grounds. Early discussions should be held with Inshore Fishing Groups and local fishermen.
- *Sea kayaking routes*: Wet storage of devices has the potential to cumulatively adversely affect sea kayaking routes by disturbing and/or displacing users, particularly around island groups such as the Western Isles, Orkney and Shetland which will potentially be host to several MRIP sites in various locations throughout the island groups. Consultation with stakeholders such as the Scottish Canoe Association, amongst others, is recommended for sites located in proximity to recreational activities.

### **Next Steps**

The consultation period for the draft MRIP and accompanying Environmental Report Addendum is now open and will close on 14 October 2014. Industry, wider stakeholders and the general public are now invited to provide their views on:

- the infrastructure assumptions and the long list of potential ports and harbours; and
- the Environmental Report addendum.

Responses to the consultation can be sent (by email) to [HighlandsandIslandsMRIP@scotland.gsi.gov.uk](mailto:HighlandsandIslandsMRIP@scotland.gsi.gov.uk) or (by post) to The Scottish Government, Environmental Assessment Team, Area 2H South, Victoria Quay, Edinburgh, EH6 6QQ. A post adoption SEA statement will be prepared outlining how the findings of the SEA and the responses have been taken into account in the development of the final MRIP