Morven North Offshore Wind Array Project

Habitats Regulations Appraisal

Volume 3, Chapter 5: Compensation: HRA of Compensation Measures

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1 Introduction

1.1 Project background

1.1.1.1 Morven Offshore Wind Limited (MvOWL), a joint venture between JERA Nex bp (JNBP), and Energie Baden-Württemberg AG (EnBW) (hereafter, 'The Applicant'), has been awarded a seabed option under the 2021/22 ScotWind Leasing Round for the Morven Option Lease Agreement Site (hereafter 'Morven Site'). The Morven Site is located wholly within Plan Option Area E1, identified in the Scottish Government's Sectoral Marine Plan for Offshore Wind Energy (the SMP) (Scottish Government, 2020a).

1.1.1.2 The Applicant submitted the Environmental Impact Assessment (EIA) Scoping Report for the Morven Option Lease Agreement Site (hereafter, 'the Morven Site Scoping Report') and HRA Stage 1 Screening Report (hereafter referred to as 'Morven Site HRA Screening Report') to Marine Directorate – Licensing and Operations Team (MD-LOT) in July 2023, requesting a formal Scoping Opinion from Scottish Ministers. The Applicant subsequently received the Morven Option Lease Agreement Site Scoping Opinion (hereafter, 'Morven Site Scoping Opinion') from Scottish Ministers in November 2023. Advice relevant to the Morven Site HRA Screening Report was provided within the Morven Site Scoping Opinion. Since receiving the Morven Site Scoping Opinion, the Applicant has continued to develop and evolve the Morven Site and made the decision to split the site into two distinct projects, the Morven North Offshore Wind Array Project (hereafter, 'Morven North') and the Morven South Offshore Wind Array Project (hereafter, 'Morven South').

- Morven North is a proposed fixed-foundation offshore wind farm located approximately 61.2km from the Aberdeenshire coast (at its closest point) and covers an area of 511.1km^2;
- Morven South is a proposed fixed-foundation offshore wind farm located approximately 86.1km from the Aberdeenshire coast (at its closest point) and covers an area of 347.7km^2.

1.1.1.3 As per paragraph 1.1.1.2 the Morven Site will be progressed as two separate developments: Morven North and Morven South. This separation is primarily driven by the identification of two distinct grid Points of Connection (POC), Branxton in East Lothian and Hawthorn Pit in County Durham. To align with the respective grid connection arrangements and the legislative requirements for each jurisdiction, Hawthorn Pit in County Durham will be consented through a Development Consent Order (DCO), while Branxton in East Lothian will proceed via a marine licence application. A separate Report to Inform Appropriate Assessment (RIAA) has been produced for the Morven North and Morven South applications, but in the case of this report they are being considered together due to the Compensation Plan covering both projects.

1.1.1.4 A detailed description of Morven North and Morven South is provided in their respective Offshore EIA Report Volume 1, Chapter 3: Project Description.

1.1.1.5 For Morven North and Morven South, the Applicant is seeking the following consents and licences as part of each application:

- a Section 36 consent under the Electricity Act 1989 for an offshore generating station in the Scottish offshore region (12nm to 200nm) where generating capacity exceeds 50MW;
- a marine licence under the Marine and Coastal Access Act 2009 (MCAA) (Scottish waters beyond 12nm) for the generating station (wind turbines, foundation and inter-array cables);
- a marine licence under the MCAA (Scottish waters beyond 12nm) for the Offshore Substation Platforms (OSPs) infrastructure (OSPs, OSP foundations and interconnector cables within the Morven North/Morven South Boundary).

1.1.1.6 Key components of both Morven North and Morven South include:

- wind turbines, including foundations;
- inter-array cables;
- OSPs, including OSP foundations;

- scour protection;
- cable protection;
- interconnector cables.

1.1.1.7 Morven North will secure up to 96 fixed wind turbines. Up to five OSPs will be installed in the Morven North Boundary. The potential foundation types for the OSPs include piled jackets, suction bucket jackets, monopiles, or gravity-based structures. For wind turbines, the foundation options include piled jackets, suction bucket jackets, and monopiles. Subsea inter-array cables will connect the wind turbines to each other and to the OSPs, while interconnector cables will link the OSPs together.

1.1.1.8 Morven South will secure up to 95 fixed wind turbines. Up to five OSPs will be installed in the Morven South Boundary. The potential foundation types for the OSPs include piled jackets, suction bucket jackets, monopiles, or gravity-based structures. For wind turbines, the foundation options include piled jackets, suction bucket jackets, and monopiles. Subsea inter-array cables will connect the wind turbines to each other and to the OSPs, while interconnector cables will link the OSPs together.

1.1.1.9 The overall MW capacity for Morven North and Morven South is not yet defined and will be a function of turbine model selection post consent. Depending on the number and capacity of the wind turbines installed within the Project Design Envelope (PDE) parameters defined for this assessment, the final installed generation capacity may vary, provided it remains within the assessed design parameters. Construction activities for Morven North and Morven South are expected to last up to 5 years. The decommissioning process will likely follow a similar, reverse sequence. The Applicant is seeking consent for an operational phase of 35-years for Morven North and Morven South.

1.1.1.10 Hereafter, the Conservation (Natural Habitats, & C.) Regulations 1994, the Conservation of Habitats and Species Regulations 2017, and the Conservation of Offshore Marine Habitats and Species 2017, which together set out the relevant legal framework for Habitat Regulations Appraisals (HRA) of Morven North and Morven South, are collectively referred to as the Habitats Regulations.

1.1.1.11 As part of the HRA process, a RIAA accompanies the applications for Morven North and Morven South (Morven North Offshore Wind Array Project Volume 2: Report to Inform Appropriate Assessment of the HRA and Morven South Offshore Wind Array Project Volume 2: RIAA of the HRA). The RIAA assesses whether Morven North or Morven South could have an adverse effect, either alone, or in-combination with other projects, on the integrity of any European site. European sites include Special Areas of Conservation (SACs), candidate SACs (cSACs), Sites of Community Importance (SCIs), Special Protection Areas (SPAs) and, as a matter of policy (Scottish Government, 2020b; Scottish Government, 2025), possible SACs (pSACs), potential SPAs (pSPAs) and Ramsar sites (listed under the Ramsar Convention on Wetlands of International Importance, where also designated as a European site).

1.1.1.12 The assessment presented within the Morven North and Morven South RIAAs concluded that adverse effects on integrity (AEOI) could not be excluded for the following SPAs when the effects of Morven North or Morven South were considered in combination with other projects:

- Forth Islands (guillemot (*Uria aalge*) and seabird assemblage (with regards to guillemot));
- St. Abb's Head to Fast Castle (kittiwake (*Rissa tridactyla*), razorbill (*Alca torda*) and seabird assemblage (with regards to kittiwake and razorbill));
- Troup, Pennan and Lion's Head (guillemot and seabird assemblage (with regards to guillemot));
- Outer Firth of Forth and St Andrew's Bay Complex (kittiwake, guillemot and breeding seabird assemblage (with regards to kittiwake and guillemot)).

1.1.1.13 While the Applicant concluded that AEOI could not be ruled out for the above four SPAs, compensation measures for additional SPAs and qualifying features have also been considered, on a *without prejudice* basis, based on previous consent decisions made by competent authorities (e.g. Scottish Ministers). These are fully set out in Volume 3, Chapter 3: Compensation and Evidence Plan of the HRA.

1.1.1.14 As such, the Applicant has prepared a Derogation Case, which includes a proposed compensation measure to offset potential AEOI, including that concluded by the Applicant and that identified on a *without prejudice* basis. The compensation measure as part of proposed Derogation Case is as follows:

- rat eradication at Isle of Muck.

1.1.1.15 Progress is being made on developing a gannet (*Morus bassamus*) measure; however, due to commercial sensitivity, further detail cannot yet be provided and will be made available during the determination phase.

1.1.1.16 Full details, including the evidence underpinning the rat eradication measure and the plan for delivery is provided in Volume 3, Chapter 2: Compensation Plan of the HRA.

1.2 Purpose of this document

1.2.1.1 This document presents an assessment under the Habitats Regulations of the compensation measure being developed as part of the Morven North and Morven South compensation package.

1.2.1.2 As set out above, the proposed compensation measure is being brought forward due to the risk of potential AEOI from Morven North and Morven South on SPAs. Any effects arising from the compensation measure are, as a precaution, considered to be indirect or secondary to the effects of Morven North and Morven South. These are therefore considered under the EIA and HRA, both of which require the assessment of indirect effects.

1.2.1.3 The purpose of this document is to assess the Likely Significant Effects (LSE^2) of the proposed compensation measure on European sites. Further details of the relevant policy and legislative context are presented in Volume 2, Chapter 1: RIAA Part 1: Introduction of the HRA.

1.2.1.4 The assessment of the measure in the context of the EIA is provided separately in Volume 3, Chapter 4: EIA of Compensation Measures.

1.3 Structure of this document

1.3.1.1 This document is set out in a number of sections, as follows:

- Section 2: Consultation;
- Section 3: Proposed Compensation Measure;
- Section 4.1: Habitats Regulations Appraisal Process;
- Section 4.2: Assessment of LSE^2;
- Section 5: Conclusions.

2 Consultation

2.1.1.1 As part of the development of the compensation package, the Applicant has undertaken pre-submission consultation with relevant stakeholders. Further detail on this engagement is presented in Volume 3, Annex 2.1: Compensation Stakeholder Consultation for the HRA. Engagement with stakeholders on the proposed compensation measure will continue at various stages of the process, as detailed in the Applicant's Outline Compensation Implementation, Monitoring and Adaptive Management Plan (Volume 3, Chapter 3: Outline Compensation Implementation, Monitoring and Adaptive Management Plan of the HRA).

3 Proposed compensation measure

3.1.1.1 A summary of the proposed compensation measure is provided in Table 3.1. Full details are provided in Volume 3, Chapter 2: Compensation Plan of the HRA. To reduce potential impacts on sensitive ecological receptors, the compensation measure will be implemented in accordance with recognised good practice standards. These standards reflect the Applicant's commitments and are discussed in Volume 3, Chapter 2: Compensation Plan and Chapter 3: Outline Compensation Implementation, Monitoring and Adaptive Management Plan of the HRA.

Table 3.1: Summary of compensation measure

Compensation Measure	Summary of measure	Designed-in Mitigation
Rat Eradication at the Isle of Muck	The eradication will focus on brown rats (*Rattus norvegicus)*. The subsequent biosecurity measures on the Isle of Muck will support the recovery of vulnerable seabird species for the operational lifetime of Morven North and Morven South (minimum 35 years) to prevent reinvasion and safeguard long-term ecological benefits. Post-eradication, monitoring will be undertaken to confirm success and detect any incursions. Should evidence of reinfestation arise, targeted follow-up eradication will be carried out promptly.	For planning and implementing rodent eradication projects in the United Kingdom (UK), the Biosecurity for Life programme has provided a good practice rat eradication toolkit with guidelines, templates, and worked examples as a systematic framework to guide eradications and subsequent biosecurity measures (Biosecurity for Life, 2021). The standardised guidelines for rodent eradication methodology have been developed over several years of research and are detailed in the UK Rodent Eradication Best Practice Toolkit (Thomas *et al*., 2017). It is discouraged to use any other methods without careful and extensive consultation. Volume 3, Chapter 3: Outline Compensation Implementation, Monitoring and Adaptive Management Plan of the HRA also provides site-specific recommendations to optimise eradication success and reduce ecological risks. These include refining bait station design, adjusting grid density in high-risk areas, and implementing adaptive management measures to reduce non-target interactions.

4 Habitats Regulations Appraisal process

4.1 The Habitats Regulations Appraisal process

4.1.1.1 Under the Habitats Regulations, before granting approval (i.e. planning permissions, licences and consents) for a development that is not directly related to the management of a European site, but may have a LSE[2] on a site's conservation objectives (directly or indirectly, and alone or in combination with other projects), the project must be subject to an Appropriate Assessment (AA) made by the Competent Authority. The AA must be completed prior to the granting of consent or authorisation for Morven North and Morven South; this assesses the proposed plan or project's potential for AEOI of the site in view of that European site's conservation objectives. If it cannot be determined there will be no AEOI then the project can only proceed if there are no alternative solutions and there are imperative reasons of overriding public interest (IROPI), and it is secured that compensatory measures are taken as necessary to ensure the overall coherence of the National Site Network is protected. Further details of the HRA process are set out in Volume 2, Chapter 1: RIAA Part 1: Introduction of the HRA for both Morven North and Morven South and the approach in this document aligns with the approach set out there.

4.2 Approach to screening (Habitats Regulations Appraisal stage 1)

4.2.1 Introduction

4.2.1.1 The first stage to the HRA process is Screening for LSE[2], which is a simple assessment to check or screen if a plan or project is directly connected with or necessary for the conservation management of a European site; then also consider the likelihood of a significant effect on a European site alone or in-combination with other plans or projects.

4.2.1.2 On a precautionary basis it is assumed that if LSE[2] is identified for a project alone, there is also an LSE[2] in-combination with other plans and projects.

4.2.2 Identification of potential effects

4.2.2.1 The potential effects identified which could result from the compensation measure are detailed in Table 4.1.

4.2.2.2 These potential effects were identified by drawing from previous experience and knowledge from practical conservation projects and in view of the assessment presented in Volume 3, Chapter 2: Compensation Plan of the HRA.

Table 4.1: Identification of potential effects

Receptor	Potential effect
Rat eradication on the Isle of Muck	
Offshore and intertidal ornithology	Potential for disturbance from human activity due to rat eradication methods
	Potential for unintended primary and secondary poisoning of non-target bird species due to rat eradication methods
Biodiversity, terrestrial ecology and terrestrial ornithology	Potential for disturbance from human activity to non-target species due to rat eradication methods
	Potential for unintended primary and secondary poisoning of non-target species due to rat eradication methods

4.2.3 European sites and features included in screening

Rat eradication on the Isle of Muck

4.2.3.1 To support a precautionary and transparent screening process, a 20 km buffer was applied around the Isle of Muck to identify European sites located within a distance at which a theoretical ecological or functional connectivity might exist for mobile species or habitats. This spatial search radius was selected as a conservative upper threshold to ensure that all potentially relevant SACs and SPAs were captured for review. However, inclusion within this buffer did not automatically indicate the presence of an impact pathway. Each site was subsequently screened using a source–pathway–receptor approach, considering the strictly terrestrial nature of the rat eradication works, their location confined entirely to the Isle of Muck, and the absence of any marine or off-island activities. As a result, although several SACs and SPAs fall within the 20 km buffer shown in Figure 4.1, only those with a credible functional or ecological link, namely Rum SPA and the marine mammal features of the Inner Hebrides and the Minches SAC were taken forward for assessment. All other European sites within the buffer were screened out at this methodological stage because no plausible impact pathway exists between the terrestrial eradication works on Muck and their qualifying features.

4.2.3.2 The potential effects of the rat eradication on the Isle of Muck have the potential to affect European sites in the vicinity of the Isle of Muck; the Isle of Muck itself is not an SPA. Therefore, a review of European sites within the vicinity of the Isle of Muck identified two sites of potential relevance: Inner Hebrides and the Minches SAC, designated for marine mammal features, and the Rum SPA, designated for ornithological species. The proposed compensation measure on the Isle of Muck involves rat eradication to benefit seabird populations and any effects will be limited to the island habitats only. As such, it does not include activities that could negatively affect marine mammals; therefore, Inner Hebrides and the Minches SAC can be screened out as there is no plausible impact pathway.

4.2.3.3 The Rum SPA boundary lies relatively close to the Isle of Muck (5.6km at its closest point), and is designated solely for its breeding qualifying features of golden eagle (*Aquila chrysaetos*), guillemot, kittiwake, Manx shearwater (*Puffinus puffinus*), red-throated diver (*Gavia stellata*), and breeding seabird assemblages. While some species may forage within range of the Isle of Muck, the proposed rat eradication programme is expected to be undertaken during autumn to spring (through the winter period as suggested in the guidance) to avoid the peak seabird breeding season and minimise disturbance; all works would also be undertaken onshore and therefore there is no pathway for effect on foraging seabirds (which forage at sea). The measure will deploy a bait-station grid (e.g.

50m × 50m, with denser 25m × 25m grids in high-risk areas), implement a two-week pre-baiting phase with non-toxic bait, followed by an intensive toxic-baiting phase lasting up to six weeks, and then monitoring for survivors. In line with UK best-practice standards, bait stations will be checked and replenished frequently, ideally every one to three days, so that any temporary human presence and noise is limited in spatial and temporal extent and not expected to interfere significantly with seabird or intertidal bird behaviour or population dynamics. Activities such as bait station installation, rope access on cliffs, and vessel landings could result in short-duration human presence near sensitive habitats; however, as detailed in Table 3.1, established good-practice standards will be applied at all times, and Volume 3, Chapter 3: Outline Compensation Implementation, Monitoring and Adaptive Management Plan of the HRA provides recommendations to address remaining uncertainties and to refine the eradication strategy prior to full design and implementation. Furthermore, as set out above, all works will be undertaken on the Isle of Muck and in terrestrial environments only and as such will not have any effect on breeding seabird colonies at Rum (>6km away from the proposed works) or foraging seabird activities in the marine environment around the Isle of Muck. On this basis, potential effects are highly localised to the Isle of Muck, short-term and reversible and therefore there is no plausible impact pathway for effects on breeding seabirds associated with the Rum SPA.

4.2.3.4 The golden eagle, a qualifying feature of the Rum SPA, is the only designated onshore ornithological species which could have potential direct interactions with the rats on the Isle of Muck as a prey resource and could therefore theoretically be affected by rat eradication (e.g. through the ingestion of poison). However, several factors eliminate any realistic impact pathway. Golden eagle in the Scottish region, particularly across the Outer Hebrides, typically forage over a median area distance of approximately 24.0km² (Fielding *et al*., 2024a). This figure reflects the area over which golden eagles typically forage on land, not a linear foraging distance, and therefore does not indicate that they would undertake regular movements across open water. Furthermore, a recent satellite-telemetry study (Fielding *et al*., 2024b) demonstrated that large expanses of open water, such as the sea crossings between the Outer and Inner Hebrides (≥24km) or between the Isle of Muck and the Isle of Rum (approximately 10km; noting the SPA boundary extends beyond the Isle of Rum) act as significant barriers to movement. Juvenile eagles rarely attempted sea crossings, with no documented movements between the Outer Hebrides, Inner Hebrides, or mainland, and several aborted crossing attempts documented (Fielding *et al.,* 2024b). Accordingly, despite the Isle of Muck lying ~10 km from Rum, telemetry evidence demonstrates that golden eagles avoid extensive open-water crossings, making it extremely unlikely that individuals would traverse this distance to forage on Muck. These findings confirm that golden eagles do not habitually traverse open water as part of their functional foraging range and are unlikely to use the Isle of Muck for foraging. When combined with the terrestrial confinement of eradication works, the absence of functional connectivity and the implementation of standard industry good practice measures (see Table 4.1) it can be concluded there is no impact pathway for golden eagle and therefore the Rum SPA is not considered further.

4.2.3.5 In addition to the ornithological considerations set out above, the potential biodiversity effects listed in Table 4.1 are restricted entirely to the terrestrial footprint of the Isle of Muck, where all bait-station installation, checking and monitoring occur. The eradication programme will occur entirely outside the boundary of any SAC and therefore will not involve any activity capable of affecting Annex I habitats, terrestrial SAC features, or SPA habitats on neighbouring islands and islets. As the Isle of Muck itself is not designated as an SAC or SPA, and because all works are confined to Muck's terrestrial environment with no pathway for effects to extend off-island, there are no habitats or terrestrial biodiversity features of any European site with the potential to be impacted. Disturbance to non-target species will be short-term and highly localised, occurring outside the breeding season for seabirds, while poisoning risk is minimised through the use of enclosed bait stations, frequent checks and carcass retrieval.

4.2.3.6 All potential effects associated with the rat eradication measure are terrestrial in nature and confined to the Isle of Muck. There is no plausible mechanism for negative impacts on the qualifying features of Rum SPA or the Inner Hebrides and the Minches SAC. Figure 4.1 illustrates the location of European sites relative to the Isle of Muck, including Rum SPA and Inner Hebrides and the Minches

SAC. All other SACs and SPAs are located at distances too great for any plausible impact pathway on the relevant Annex I habitats and Annex II species (for SACs) and protected bird species (for SPAs). Therefore, the rat eradication measure on the Isle of Muck will not lead to an LSE[2] on any European site and is not considered further.

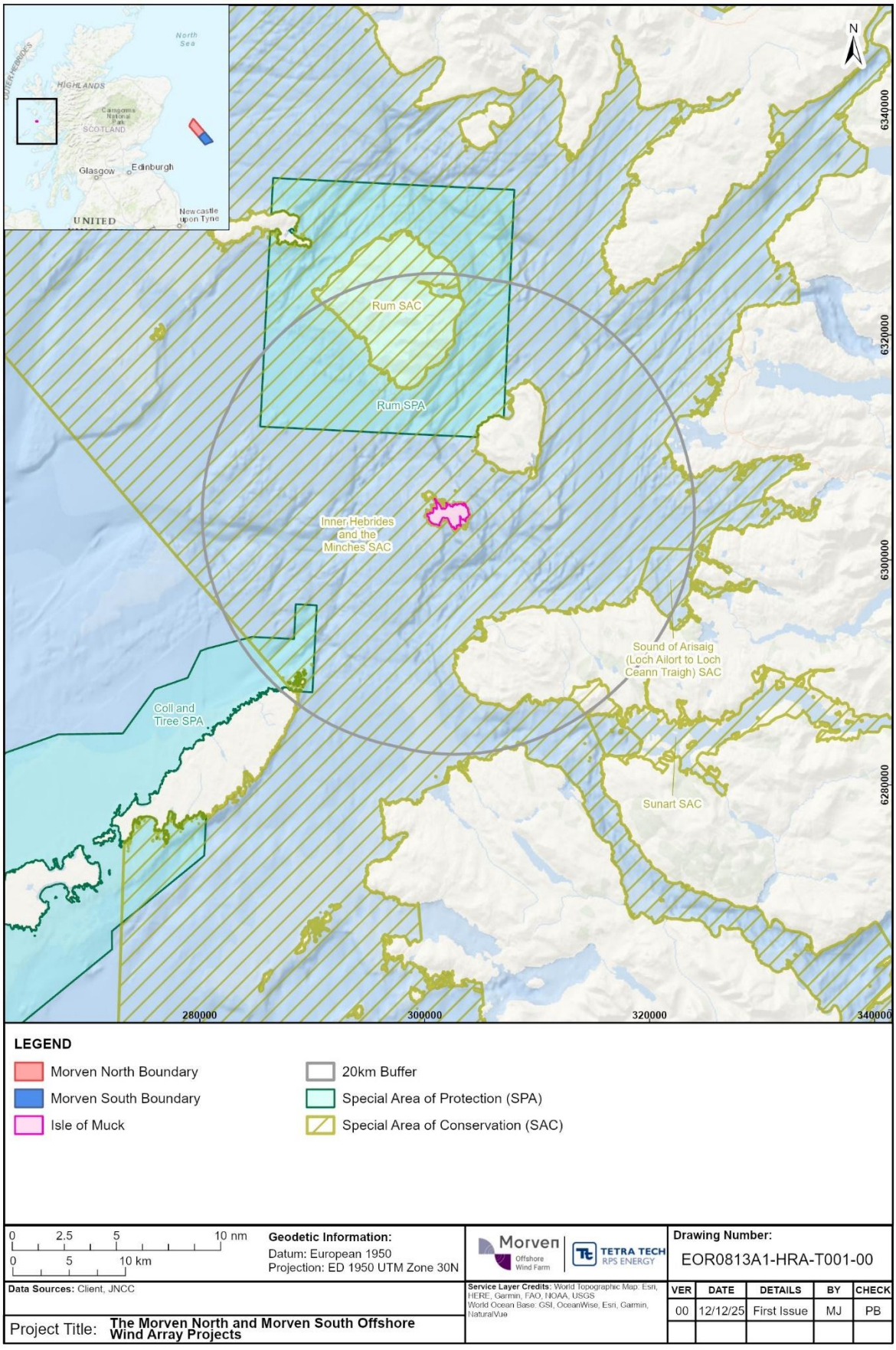

Figure 4.1: Isle of Muck and surrounding Special Areas of Conservation and Special Protection Areas

5 Conclusions

5.1.1.1 The assessment presented in the preceding section has found that the proposed compensation measure will not have a LSE[2] on any European site alone, or in-combination with other projects. Therefore, an AA is not required.

6 References

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