MacArthur Green Ltd

Sound of Islay Grid Connection and Sub-station

Ecological Survey Report and Impact Assessment

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EXECUTIVE SUMMARY

MacArthur Green Ltd was commissioned by ScottishPower Renewables (SPR) to complete ecological surveys of a proposed substation and the associated cabling works and new access track on the eastern side of Islay, in the Inner Hebrides (hereafter referred to as 'the Site').

An Extended Phase 1 Habitat Survey and associated protected species surveys were carried out on 22nd and 23rd October 2011 during changeable weather conditions. These surveys were extended in area and updated on 10th and 11th May 2012 in a period of good weather.

The surveys identified a diverse habitat, with no clear dominance of any particular plant communities. Woodland (both broadleaved and mixed); wet heath; continuous bracken; grassland; and arable fields were all recorded across similar extents, with a network of minor watercourses also present across the Site.

Relevant protected species surveys were also carried out on Site and suggest a moderate presence of otters on the Site. No further protected species were identified as being present.

The ecological impact assessment of key habitats and species present on the Site concludes that with the implementation of best practice working methods, such as adequate pollution prevention measures, it is considered that there will be no significant ecological impacts as a result of the development.

This report takes into account the updated (May 2013) location of a section of the new access track and construction of a transition pit.

1. INTRODUCTION

MacArthur Green Ltd was commissioned by ScottishPower Renewables (SPR) to complete ecological surveys of a proposed substation and the associated sub-surface cabling works and new access track on the eastern side of Islay, in the Inner Hebrides.

The aim of this report is to document the findings of the surveys and offer recommendations to mitigate against any impacts identified.

For the purposes of this report, the following definitions are use:

- "The Site": the area of development as defined by the red line boundary;
- "The survey boundary": the area of the Site plus a suitable buffer (refer to Figure 2).

The Site extends across land to the south of Port Askaig on the eastern side of Islay, from the subsea cable landfall point, to the site of a proposed substation location.

Details pertaining to the legal status of those species surveyed are included within Appendix 2.

The nature of the proposed works and activities associated with the development is noted below:

1.1 Construction

The following construction works are required for the onshore elements of the Development:

- Access track widening;
- New access track;
- Transition pit;
- Substation compound and control building (which includes tree planting and landscaping for screening purposes); and
- Laying of onshore cables.

Construction works for the access road upgrading and new road construction are programmed to take 6 weeks and 8 weeks respectively. Construction of the sub-station compound is programmed to take approximately 5 months to complete. The sub-station compound and control building civil works are expected to take 25 weeks to complete. It is anticipated that sub-station electrical works will take 12 weeks, while onshore cabling works are programmed to take 4 weeks. Construction of the substation compound will require landscaping which is expected to take 3 weeks to complete.

1.2 Operation

The array is intended to be operated remotely. Technician intervention will only be required at the substation following any onshore electronics failures, and any electrical isolation required in order to perform routine maintenance.

Access to the Site will be required for maintenance activities which are anticipated to be between 5-10 weeks per year for the first two years of operation, but spread across the course of a year.

2. METHODOLOGIES

2.1 Desk-based Study

A desk-based study was undertaken in order to inform subsequent field survey and assessment with regards the presence of designated sites/species of interest within the Site and its environs. This study consisted of the consultation of various online resources such as NBN Gateway (www.searchnbn.co.uk) and Scottish Natural Heritage (SNH) Sitelink (www.gateway.snh.gov.uk).

2.2 Extended Phase 1 Habitat Survey

Field surveys were completed in accordance with standard Ex. P1 guidelines (JNCC, 1993) and involved the surveyor completing a walkover of the survey boundary, recording the habitats present onto a 1:10,000 map. Linear and point features (such as fence lines and single trees) were also mapped. Ex. P1 is a standard technique for classifying and mapping British habitats, with the aim of providing an inventory of those areas of greatest ecological importance. In addition to the recording of habitats, all other features of ecological interest, especially those pertaining to the presence/likely presence of protected species were also noted via the inclusion of 'Target Notes' (TNs). Each TN includes a brief description of the feature together with a grid reference – additional information such as a diagram and/or photograph is also appropriate depending on the feature.

2.3 Protected Species Survey

Two separate protected species surveys were carried out on Site:

2.3.1 Bats

A bat habitat assessment was carried out within the survey boundary, following methods described within Bat Conservation Trust (BCT) guidance[1]. This involved an assessment of the prevailing habitat types together with the built structures and mature trees on Site to identify areas of greatest potential for roosting bats.

2.3.2 Otter

Otter *Lutra lutra* surveys were undertaken along all burns and immediate vicinity of the bank sides on Site and for a distance of approximately 250m upstream and downstream from the Site. Surveying involved a walkover of the survey area, recording signs of otter presence as described in Bang & Dahlstrøm (2001), Sargent & Morris (2003) and Chanin (2003), including:

- **Holts:** Underground features where otters live. They can be tunnels within bank sides, underneath root-plates or boulder piles, and even man-made structures such as disused drains. Holts are used by otters to rest up during the day, and are the usual site of natal or breeding sites. Otters may use holts permanently or temporarily;

- **Couches:** These are above ground resting-up sites. They may be partially sheltered, or fully exposed. Couches may be regularly used, especially in reed beds and on in-stream islands. They have been known to be used as natal and breeding sites. Couches can be very difficult to identify, and may consist of an area of flattened grass or earth. Where rocks or rock armour are used as couches, these can be almost impossible to identify without observing the otter *in-situ*;

[1] Bat Conservation Trust (2007). *Bat Surveys – Good Practice Guidelines.* Bat Conservation Trust, London.

- **Prints**: Otters have characteristic footprints that can be found in soft ground and muddy areas;

- **Spraints**: Otter faeces may be used to mark territories, often on in-stream boulders. They can be present within or outside the entrances of holts and couches. Spraints have a characteristic smell and often contain fish remains;

- **Feeding signs**: The remains of prey items may be found at preferred feeding stations. Remains of fish, crabs or skinned amphibians can indicate the presence of otter;

- **Paths:** These are terrestrial routes that otters take when moving between resting-up sites and watercourses, or at high flow conditions when they will travel along bank sides in preference to swimming; and

- **Slides and play areas:** Slides are typically worn areas on steep slopes where otters slide on their bellies, often found between holts/couches and watercourses. Play areas are used by juvenile otters in play, and are often evident by trampled vegetation and the presence of slides. These are often positioned in sheltered areas adjacent to the natal Holt.

Any of the above signs are diagnostic of the presence of otter. However, it is often not possible to identify couches with confidence unless other field signs are also present. Sprainting is the most reliably identifiable evidence of the presence of this species.

3. SURVEY CONSTRAINTS

The initial surveys were carried out during changeable weather conditions in late October 2011 with some stretches of the watercourses on Site inaccessible for health and safety reasons. These areas were subsequently included in a re-survey of all watercourses in May 2012 during favourable conditions.

4. SURVEY RESULTS

4.1 Desk-based Study

The Site does not overlap with any areas designated for their importance for nature conservation. The nearest such example is Loch Tallant SSSI, situated approximately 6km to the west.

The desk study revealed the recent presence of otter within 50m of the Site, with more general records existing for the wider area.

4.2 Extended Phase 1 Habitat Survey

Field surveys were undertaken on 22nd and 23rd of October 2011. An extension to the survey area was surveyed and mapped on 10th and 11th May 2012 and protected species surveys updated. The following habitats were recorded. Figure 1 illustrates these findings:

4.2.1 Arable (J1.1)

Two arable fields are present in the centre of the survey boundary. At the time of surveying, one of these had been recently ploughed, with the other planted with barley.

4.2.2 Broadleaved Woodland – Semi-natural (A1.1.1)

Semi-natural broadleaved woodland dominated much of the western end of the survey boundary and is also scattered across the central and southern areas as well. The species composition within this habitat is very mixed, with co-dominance of ash *Fraxinus excelsior,* willow *Salix* sp., beech *Fagus sylvatica,* hazel, birch and alder *Alnus glutinosa* in most parts. Blackthorn *Prunus spinosa,* hazel and willow scrub dominate below the canopy.

4.2.3 Continuous Bracken (C1.1)

Continuous bracken extends across increasingly large areas in the east of the survey boundary. As is typical with this habitat, the species is exclusively dominant here, and would appear to be encroaching onto neighbouring areas of heathland and acid grassland habitats.

4.2.4 Neutral Grassland – Unimproved (B1.2.1)

Unimproved grassland is present to a limited extent in the centre of the survey boundary. Here a diverse mix of grass species prevails, with tufted hair grass *Deschampsia cespitosa,* Yorkshire fog *Holcus lanatus,* velvet bent *Agrostis canina* and sweet vernal grass *Anthoxanthum odoratum* all present alongside herbs such as tormentil *Potentilla erecta,* black knapweed *Centaurea nigra*, heath bedstraw *Galium saxatile* and devil's-bit scabious *Succisa pratensis*. In places the habitat also supports heathland shrubs such as heather *Calluna vulgaris* and bell heather *Erica cinerea,* although not to the extent that the habitat becomes a mosaic.

Scattered scrub and broadleaved trees are locally present here, with willow dominant in this regard.

4.2.5 Standing Water (G1)

Several lochs are present around the perimeters of the survey boundary (Loch Ballyrgrant and Loch Lossit). The only body of standing water is located within the east of the survey area and is surrounded by an area of wet heath.

4.2.6 Mixed Woodland – Plantation (A1.3.2)

A small area of mixed plantation woodland is present in the south-east of the survey boundary. Here, planted Sitka spruce *Picea sitchensis* is present amongst hazel *Corylus avellana* and birch *Betula* sp. which are likely to be of semi-natural origin. The ground flora is limited in nature, with species such as soft rush *Juncus effusus*, wavy hair grass *Deschampsia flexuosa,* Yorkshire fog *Holcus lanatus,* sweet vernal grass *Anthoxanthum odaratum* and bracken *Pteridium aquilinum* dominating.

4.2.7 Marshy Grassland (B5)

Marshy grassland is scattered across the central parts of the Site and is flanked by a more improved grassland habitat in many places. The habitat is typically dominated by rush species, with soft rush *Juncus effusus* abundant throughout. Sharp-flowered rush *J. Acutiflorus* and jointed rush *J. Articulates* are also frequent here. Other important community components include purple moor grass *Molinia caerulea,* meadowsweet *Filipendula ulmaria,* marsh thistle *Cirsium palustre* and devil's-bit scabious.

4.2.8 Wet Dwarf Shrub Heath (D2)

Wet dwarf shrub heath is present along the eastern edge of the survey boundary and the higher outcrops to the south and east of the survey boundary, with its dominance here broken up in parts by continuous bracken. The habitat is dominated by heather *Calluna vulgaris,* purple moor grass *Molinia caerulea* and bell heather *Erica cinerea.*

4.2.9 Acid Grassland – Semi-improved (B1.2)

Semi-improved acid grassland is perhaps the most extensive habitat found within the survey boundary, and is dominant across much of the eastern central areas. Typical species present include: creeping velvet grass *Holcus mollis*, perennial rye grass *Lolium perenne*, spear thistle *Cirsium*

vulgare, devil's-bit scabious *Succisa pratensis,* white clover *trifolium repens* and red clover *trifolium pratense*

4.2.10 Improved Grassland (B4)

Improved grassland fields are present within the central areas of the survey boundary, most of which appears to be under agricultural tenure.

4.2.11 Dry Dwarf Shrub Heath (D1.1)

Dry Dwarf Shrub Heath is found in small localised areas at the east of the survey boundary. Typical species present include heather, cross-leaved heath *Erica tetralix,* bilberry *Vaccinium myrtilus,* tormentil *Potentila erecta* and heath bedstraw *Galium saxatile.* Much of this habitat is being encroached upon by bracken.

4.2.12 Blanket Bog (E1.6.1)

A small pocket of blanket bog habitat is present towards the eastern end of the survey boundary (TN 17), within a wider area dominated by bracken. Here, standard bog higher plants such as heather, hare's-tail cottongrass *Eriophorum vaginatum* are present over a diverse bog moss community in which *Sphagnum papillosum, S. capillifolium, S. cuspidatum* and *S. fallax* are all present. The peat extends to a depth of around 2m here. The bog generally seems to be in good condition (as indicated by the presence of *S. papillosum*) with the only visible impact being the road to its east which would have cut through this habitat when constructed in the past.

A further pocket of blanket bog was identified by the proposed substation location with peat depths to over 1m (TN21) and is surrounded by areas of wet heath and bracken. Species present include *Eriophorum vaginatum, Calluna vulgaris, Erica cineria, Trichophorum cespitosum, Molinia caerulea, Sphagnum papillosum, S. magellanicum, S. denticulatum and S. capillifolium.* The bog here is in good condition indicated by the presence of *Sphagnum papillosum and S. magellanicum* with small bog pools. The current location of the substation will impact upon this pocket of higher quality bog.

4.2.13 Continuous Scrub (A2.1)

A small area of continuous scrub is present in the south east of the survey boundary, where blackthorn is dominant over a ground flora of neutral grass species.

4.2.14 Wet Heath/Acid Grassland Mosaic (D6)

This mosaic habitat lies adjacent to the area of wet heath in the far south-east of the survey boundary, with many of the heath species present here also alongside a greater coverage of acid grassland species such as wavy hair grass, Yorkshire fog and velvet bent.

4.2.15 Running Water (G2)

A number of watercourses drain the Site, feeding either the lochs in the west of the Site, or the sea to the east. These watercourses are typical of Scottish upland tributaries, being generally fast flowing over a boulder, cobble and pebble substrate. TNs 3, 6, 7, 9, 11, 12, 14, 15, 16, 18, 19 and 20 and associated figures document the various water crossings.

4.2.16 Stone Dykes

TNs 2, 5, 5.1, 8, and 10 give locations where stone dykes start and stop and are shown on Figure 1. Road widening may impact on these dykes and it will be important to ensure that they are fully reinstated due to their potential ecological importance.

4.3 Faunal Interest

Faunal interest pertaining to those protected species for which dedicated surveys were undertaken (i.e. otter and bats) are described below.

4.3.1 Otter

During the October 2011 surveys otter presence was confirmed on the Site through the recording of a single otter spraint from alongside the Allt an loin Bhroaich burn to the north of the substation location.

All watercourses were re-surveyed for otter in May 2012 with 22 sprainting locations identified over 5 different burns; these are shown on Figure 2. No couches or holts were found although some of the burns do have moderate to good potential for containing holts or couches due to heavy bankside vegetation and undercut banks with rocky holes and undercut tree roots.

4.3.2 Bats

Two trees were identified with roost potential and are described in TNs 1 and 13 (Appendix 3).

4.3.3 Golden Eagle

Due to the confidential nature of information on this species, details are provided in a separate Confidential Appendix to this report (Appendix 5).

4.3.4 Additional Fauna

Brown hares, nesting mute swan, roe deer and red deer were also observed during the surveys.

5. ECOLOGICAL IMPACT ASSESSMENT (EcIA)

5.1 Method

The assessment of ecological effects follows the guidance produced by the Institute of Ecology and Environmental Management (IEEM, 2006). The IEEM guidelines set out the process for assessment through the following stages:

- describing the ecological baseline through survey and desk study;
- assigning a value to "Valued Ecological Receptors" (VERs) - these are the designated sites, habitats and species of highest ecological value affected by the development;
- identifying and characterising the potential effects (including their spatial and temporal magnitude) on these VERs based on the nature of construction, operation and decommissioning activities associated with the Development;
- describing any mitigation, compensation and/or enhancement measures associated with the development;
- determining the significance of the effects, taking into account mitigation measures where appropriate; and
- identification of any monitoring requirements.

Value is defined on the basis of the geographic scale given in Table 5.1. Attributing a value to a receptor is generally straightforward in the case of designated sites, as the designations themselves are normally indicative of a value level. For example, a Special Area for Conservation (SAC) designated under the Habitats Directive is implicitly of European (International) importance. Other relevant guidance is used as appropriate to attribute values to the various receptors.

Table 5.1: Description of Nature Conservation Value of Ecological Receptors

Level of Value	Examples
International	An internationally designated site (e.g., SAC), or site meeting criteria for international designation. Species present in internationally important numbers (>1% of biogeographic populations).
National	A nationally designated site (Site of Special Scientific Interest, SSSI, or a National Nature Reserve, NNR), or sites meeting the criteria for national designation. Species present in nationally important numbers (>1% UK population). Large areas of priority habitat listed on Annex I of the EC Habitats Directive and smaller areas of such habitat that are essential to maintain the viability of that ecological resource.
Regional (Natural Heritage Zone or Local Authority Area)	Species present in regionally important numbers (>1% of Natural Heritage Zone population). Sites falling slightly below criteria for selection as a SSSI.
Local	Scottish Wildlife Trust Reserves, Local Nature Reserves. Areas of semi-natural ancient woodland smaller than 0.25 ha. Areas of habitat or species considered to appreciably enrich the ecological resource within the local context, e.g., species-rich flushes or hedgerows.
Negligible	Usually widespread and common habitats and species. Receptors falling below local value are not normally considered in detail in the assessment process.

Part of the process of attributing value to species receptors involves defining the population to be valued. This involves professional judgement in order to identify an ecologically coherent population against which effects on integrity can be assessed. For example, for wide-ranging species such as otter it may be more appropriate to value the otter population in a whole catchment or even at the Natural Heritage Zone level. For more localised species such as water vole, value may be attributed to groups of related colonies which function as meta-populations.

The magnitude of effects is predicted quantitatively where possible, taking into account the duration and reversibility of effects, and is considered spatially and temporally as described within Tables 5.2 and 5.3 below:

Table 5.2: Description of Spatial Impact Magnitudes

Impact Magnitude	Description
High	Major effect on the nature conservation status of the site, habitat or species, likely to threaten the long-term integrity of the system.
Medium	Moderate effect on the nature conservation status of the site, habitat or species, but would not threaten the long-term integrity of the system.
Low	Noticeable effects, but either of sufficiently small scale or short duration to cause no harm to the conservation status of the site, habitat or species.

Negligible	Not expected to affect the conservation status of the site, habitat or species under consideration in any way, therefore no noticeable effects on the ecological resource.

Table 5.3: Description of Temporal Impact Magnitudes

Temporal Magnitude	Definition
Permanent	Effects continuing indefinitely beyond the span of one human generation (taken as approximately 25 years), except where there is likely to be substantial improvement after this period.
Long term	Approximately 15 - 25 years.
Medium term	Approximately 5 – 15 years.
Short term	Up to approximately 5 years.

Having followed the above process, the significance of an effect is then determined. The IEEM (2006) guidelines use only two categories: "significant" or "not significant". In assessing whether an effect is significant, the concept of "ecological integrity" is the guiding principle. An effect which is likely to impact the ecological integrity of a receptor will be classified as significant. Ecological integrity is defined (in relation to designated sites) in the ODPM circular 06/2005 as the site's

"coherence, ecological structure and function… that enables it to sustain the habitat, complex of habitats and/or the levels of population of species for which it was classified."

This concept can be applied to both designated sites (for example a SSSI) and to defined populations (for example a water vole population). This concept underpins much of the European legislation in relation to nature conservation.

Table 5.4 below details the impact significance criteria. For the purposes of this assessment, those impacts classified as High or Moderate are termed 'Significant', and those classified as Minor or Negligible being 'Not Significant'.

Table 5.4: Significance Criteria

Significance	Definition
Major	The effect is likely to result in a long-term significant adverse effect on the integrity of the population.
Moderate	The effect is likely to result in a medium-term or partially significant adverse effect on the integrity of the population.
Minor	The effect is likely to adversely affect the population at an insignificant level by virtue of its limited duration and/or extent, but there will probably be no effect on its integrity.
Negligible	No significant effect.

5.2 Habitat Evaluation

The following habitats have been scoped out of the assessment due to their negligible conservation value: Improved Grassland; Arable; Bracken; and Semi-improved grassland.

5.2.1 Broadleaved Woodland - Semi-Natural

The semi-natural woodland within the survey boundary, which dominates the far west and is scattered elsewhere, represents the most ecologically interesting terrestrial habitat within the survey boundary, by virtue of the species composition and relative diversity, together with the age of the specimens present. Upland mixed woodlands is a national and county Priority Habitat (UK Biodiversity Action Plan (UKBAP)/Argyll and Bute Local Biodiversity Action Plan (LBAP)), with its own Habitat Action Plan (HAP). As such, it is classified for the purposes of this assessment as being of **Regional** nature conservation value. The widening of the existing access track may result in some localised losses to this habitat. Overall, the impact magnitude is therefore considered likely to be of **Permanent** and **Low** magnitude, resulting in an impact that is therefore considered to be **Minor** and **Not Significant** within the context of the IEEM guidelines. Impacts may be reduced further through avoidance of tree loss altogether by micrositing or replacement planting of native trees at an appropriate location.

5.2.2 Neutral Grassland – Unimproved

The neutral grassland habitat in the survey boundary is limited in extent, and although supports a relatively high species diversity, is considered to be of **Local** nature conservation value. The access track widening may result in a very small loss of this habitat and is therefore considered to be of **Permanent** and **Low** magnitude. This will result in an overall impact that is **Minor** and **Not Significant** within the context of the IEEM guidelines.

5.2.3 Standing Water

There will be no impacts upon the standing water habitat within the survey boundary and therefore no further consideration shall be given to this receptor.

5.2.4 Mixed Woodland – Plantation

The mixed woodland of plantation origin is considered to be of **Local** nature conservation value by virtue of the abundance of similar habitats within the wider area. The access track to the sub-station location was initially going to result in the loss of some of the woodland located at the watercourse to the north however this has been avoided by moving the track to the west away from the woodland. No impact will occur on this receptor as a result. .

5.2.5 Wet Dwarf Shrub Heath

The wet dwarf shrub heath is restricted to the eastern end of the Site, and is a fairly typical example of the habitat. It is considered to be of **Local** nature conservation value mainly by virtue of its relative abundance within the region. Impacts upon this habitat on the Site are likely to be restricted to temporary disturbance during the overhead line construction period and a small area of the access track immediately to the north of the substation. In light of this, the impact magnitude is expected to be **Short Term** and **Low**, resulting in an overall impact that is **Minor** and **Not Significant** within the context of the IEEM guidelines.

5.2.6 Marshy Grassland

Marshy grassland on the Site is confined to a small patch of the habitat in the centre of the Site. The species composition is typical of the habitat and it is not considered to be of greater than **Negligible** nature conservation value. The widening of the existing access track and construction of new track may result in localised loss of some of this habitat, resulting in an impact magnitude that is therefore considered to be **Permanent** and **Low**. The overall impact is **Negligible** and **Not Significant** within the context of the IEEM guidelines.

5.2.7 Dry Dwarf Shrub Heath

Dry dwarf shrub heath is very limited in extent, and appears to be in decline on the Site due to bracken encroachment. The habitat is therefore considered to be of **Negligible** nature conservation value. It is possible that there will be further disturbance to this habitat as a result of the proposed

development along the route of the overhead line, with an impact magnitude of **Permanent** and **Low** predicted. This will result in an overall impact that is **Negligible** and **Not Significant** within the context of the IEEM guidelines.

5.2.8 Blanket Bog

Blanket Bog on the Site is limited in extent and confined to two small areas in the east. The habitat is common across Islay and within the wider region and although an Annex 1 habitat (under the Habitats Regulations[2]) and a UK and Argyll and Bute Priority Habitat, is considered to be **Local** nature conservation value here. The proposed access track route widening will potentially result in a small loss of habitat here. Furthermore, the location of the substation will impact upon the area of bog. The impact magnitude is considered to be **Minor**. The resulting impact is therefore considered to be **Minor** and **Not Significant** within the context of the IEEM guidelines.

5.2.9 Wet Heath/Acid Grassland Mosaic

This mosaic habitat is present to a very limited extent in the south-east of the survey boundary where it appears to represent a transitional habitat between neighbouring vegetation. This mosaic occurs frequently across much of western Scotland and is considered to be of **Negligible** nature conservation importance. The proposed substation development may result in the loss of some of this habitat on the Site; an impact magnitude of **Permanent** and **Moderate** is therefore concluded, resulting in an overall impact that is **Negligible** and **Not Significant** within the context of the IEEM guidelines.

5.2.10 Continuous Scrub

There will be no impacts upon the continuous scrub on Site and therefore no further consideration shall be given to this receptor.

5.2.11 Running Water

The watercourses on the Site are typical upland watercourses and are considered to be of maximum **Local** nature conservation value. The potential impact upon these watercourses is the threat to water quality as a result of construction activities on Site (especially where the access tracks and overhead line route cross watercourses), with the potential for pollutants/sediments to enter the burn and have a negative impact. The overall impacts to the watercourse are therefore considered to be potentially of **Long Term** and **High** magnitude. However, with the implementation of best practice working methods to avoid pollution (e.g. implementation of SEPA's pollution prevention guidelines (PPG) via a suitable pollution prevention plan and monitoring by an Ecological Clerk of Works during construction), it is considered that the impact after mitigation will be **Negligible** and **Not Significant** within the context of the IEEM guidelines.

5.3 Species Evaluation

5.3.1 Otter

Signs of otter presence were collected from a single point in October 2011 but from 22 locations in May 2012 over 5 different burns; no couch or holt sites were recorded on the Site although some areas had potential to contain couches or holts due to the nature of the banks. The otter population on the Site is likely to be a transitory one, utilising the watercourses for foraging and migrating within the wider area. The population here is therefore considered to be of **Local** nature conservation importance. The construction works have the potential to disturb newly established couches/holts (i.e. those established after completion of these surveys), and to affect the behaviour of otters utilising the Site. The potential impact magnitude is considered to be **Short Term** and **Low**

[2] The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (The Habitats Regulations)

in magnitude, which results in an impact that is **Minor** and **Not Significant** within the context of the IEEM guidelines.

In order to ensure that the construction activities will not impact upon any holts or couches, and to ensure compliance with the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), a pre-construction survey of all suitable areas to be affected by the works will need to be undertaken. If any holts/couches are found within the vicinity of the works area at this stage, then it may be necessary to obtain a European Protected Species (EPS) disturbance licence in order for works to continue. In addition, and in order to prevent disturbance from occurring to the local otter population such that they cannot continue to forage/migrate within the Site, it should be ensured that development activities are completed during daylight hours, and that no potentially harmful work areas are left accessible to otters during times when work has been ceased (e.g. uncovered pipe-workings/excavations in which otters could become trapped). With these recommendations implemented, an impact magnitude of **Negligible** is considered realistic, resulting in an overall significance of **Negligible** and **Not Significant** within the context of the IEEM guidelines.

5.3.2 Bats

No bat roosts were recorded during surveying, although potentially suitable roost sites and general habitat was identified in places across the survey boundary. A nature conservation value of **Local** is assigned to bats mainly as a result of the abundant suitable habitat present within the wider area which is likely to support a population that will render any Site population as of relatively lower value. The likely magnitude of the impact is **Low** and **Short Term**, which will result in an impact that is **Negligible** and **Not Significant** within the context of the IEEM guidelines. In order to reduce this impact further, and to ensure compliance with the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), a pre-construction survey of all suitable areas to be affected by the works will need to be undertaken. If any roost sites are found within these areas at this stage, then it may be necessary to obtain an EPS disturbance licence in order for works to continue.

5.3.3 Fish

The watercourses on the Site are likely to support a fish population dominated by brown trout. Atlantic salmon and sea trout are likely to be able to access the site also. The maximum nature conservation importance of any fish species here is considered to be **Local** mainly by virtue of the abundant similar/more suitable habitat within the wider area. The impact magnitude of the proposed development is considered to be **High** and **Permanent** mainly by virtue of the potential for a pollution incident during construction. This impact is considered to be **Moderate** and **Significant**. However, with the implementation of best practice working methods to avoid pollution (e.g. implementation of SEPA's pollution prevention guidelines (PPG) and monitoring by an Ecological Clerk of Works during construction), it is considered that the aforementioned impacts can be reduced/prevented sufficiently to reduce the impact magnitude to **Negligible** and the subsequent overall impact to **Minor** and **Not Significant** within the context of the IEEM guidelines. A suitable Pollution Prevention Plan will be agreed in consultation with SEPA and SNH in advance of construction progressing.

5.3.4 Golden Eagle

Golden eagle is a species of **High** nature conservation value due to its Annex 1 status. The impact magnitude of the development on this species is considered to be **High** and **Short Term** as a consequence of potential disturbance during the construction period. There will be activity associated with the operational phase but this is considered to be negligible as detailed within the Confidential Appendix (Appendix 5 to this report). The construction impact is considered to be **Major** and **Significant** within the context of the IEEM guidelines**.** However, implementation of mitigation measures to avoid disturbance during the construction period will ensure that significant effects are avoided. These measures are detailed within the Confidential Appendix to this report.

These mitigation measures will also ensure that works are completed in accordance with the legal requirements of the Wildlife and Countryside Act 1981 (as amended).

6. CONCLUSIONS

Given the limited nature of the proposed development, the relatively low ecological value of the habitats/species present, and with the implementation of straightforward and best practice mitigation measures as described above and summarised in Table 6.1 below, it is not considered that the development will have any significant impacts upon the ecology of the Site and its associated habitat and species.

Table 6.1: Recommended Mitigation Measures

Impact	Mitigation
Loss of native trees and shrubs	**Impacts may be reduced further through the adoption of the following measures: avoidance of tree loss altogether via micrositing or replacement planting of native trees and shrubs at an appropriate location.**
Pollution of watercourse as a consequence of construction activity and impacts on fish.	**Implementation of SEPA's pollution prevention guidelines (PPG) via a suitable pollution prevention plan and monitoring by an Ecological Clerk of Works during construction.**
Golden Eagle Disturbance	**See Confidential Appendix**
Damage to bat roosts*	**Avoid felling trees with bat roost potential. Conduct a further survey prior to construction.**
Disturbance to otters*	**Complete a further survey prior to construction activity commencing.** **Development activities should be completed during daylight hours, and no potentially harmful work areas are left accessible to otters during times when work has been ceased (e.g. uncovered pipe-workings/excavations in which otters could become trapped).**
Loss of Stone Dykes as a consequence of road widening	**Reinstate all damaged stone dykes**

* = Where protected features, such as bat roost or otter holts, will be disturbed an EPS licence will be applied for from SNH.

7. REFERENCES

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Websites:
NBN Gateway – www.nbn.org.uk
SNH Sitelink – www.gateway.snh.gov.uk

APPENDIX 1 – FIGURE 1 & FIGURE 2

APPENDIX 2 – Protected Species Legal Status

Otters and Bats receive protection under the Conservation Regulations (1994) (as amended) only[3].

Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)

Under Regulation 39 (1) it is an offence to:

(a) deliberately or recklessly to capture, injure or kill a wild animal of a European protected species;

(b) deliberately or recklessly:

  (i) to harass a wild animal or group of wild animals of a European protected species;

  (ii) to disturb such an animal while it is occupying a structure or place which it uses for shelter or protection;

  (iii) to disturb such an animal while it is rearing or otherwise caring for its young;

  (iv) to obstruct access to a breeding site or resting place of such an animal, or otherwise to deny the animal use of the breeding site or resting place;

  (v) to disturb such an animal in a manner that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of the species to which it belongs; or

  (vi) to disturb such an animal in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young;

(c) deliberately or recklessly to take or destroy the eggs of such an animal; or

(d) to damage or destroy a breeding site or resting place of such an animal.

Regulation 44 (2e) allows a licence to be granted for the activities noted in Regulation 39 such that:

Preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.

Otter is also listed on Appendix I of CITES, Appendix II of the Bern Convention and Annexes II and IV of the Habitats Directive (1994). It is also listed as globally threatened on the IUCN/WCMC Red Data List.

[3] The Conservation Amendment (Scotland) Regulations (2007) removed EPS from Schedule 5 and 8 of the Wildlife and Countryside Act 1981.

Birds of Scotland are protected by the following legislation:

Wildlife and Countryside Act 1981 as amended

1. Section 1, Subsection 1, Paragraphs (a), (b), (ba), (bb) and (c) of the Wildlife and Countryside Act 1981 (as amended) protects all wild birds, their nests and their eggs. It is an offence unless permitted by the Act to intentionally or recklessly[4]:

   (a) kills, injures or takes any wild bird;
   (b) takes, damages, destroys or otherwise interferes with the nest of any wild bird while that nest is in use or being built; or
   (ba) at any other time takes, damages, destroys or otherwise interferes with any nest habitually used by any wild bird included in Schedule A1;
   (bb) obstructs or prevents any wild bird from using its nest;
   (c) takes or destroys an egg of any wild bird

2. In the Act there are four Schedules that relate to birds. Of these schedules, Schedule 1 (Parts 1 and 2), Schedule 1A, and Schedule 2 (Part 2) are relevant to the Sound of Islay Substation development.

3. Schedule 1 lists those birds that are protected by special penalties: Part 1 at all times; and Part 2 during the close season. Under Section 1, Subsection 5, Paragraphs (a) and (b), it is an offence to intentionally or recklessly[5]:

   - disturb any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
   - disturb dependent young of such a bird.

4. Schedule 1A lists those birds that are protected from harassment. Section 1, subsection 5B states, '*Subject to the provisions of this Part, any person who intentionally or recklessly harasses any wild bird included in Schedule 1A shall be guilty of an offence'*.

5. Schedule 2, Part 1 lists those birds that can be killed or taken outside the close season. Part 2 lists those birds that may be killed or taken by authorised persons at all times.

[4] As amended by Nature Conservation (Scotland) Act 2004
[5] As amended by Nature Conservation (Scotland) Act 2004

APPENDIX 3 – TARGET NOTES

Target Note (TN)	Grid Reference	Description
1	NR 40004 655883	Older trees (Ash) on verge of road. Limited bat roost potential (see photo). Brown hare seen at this location.
2	NR 40093 65883	Dry stone dyke starts at north edge of road, 1-2 metres off of main road.
3	NR 40303 65796	Location of watercourse crossing - < 0.5 metres wide and 0.2-0.5m deep.
4	NR 40484 65801	Mature Scots pine located 8m from road side.
5	NR 40658 65768	Dyke on both sides of road. Runs along road until it reaches TN 51.
5.1	NR 40725 65714	End of Dyke on both sides of road, from TN 5.
6	NR 40906 65547	Watercourse crossing - 20-40cm deep, around 2m wide.
7	NR 41047 65473	Water course crossing - 0.5m wide, 10cm deep.
8	NR 41295 65505	Entrance into farm with dyke either side of entrance. Stone dykes, 1m from South edge of road.
9	NR 41811 65601	Row of 4 medium to large Beech trees. Also, old hedge with zero bat potential and a small watercourse by road (north edge - <0.5m wide and <10cm deep).
10	NR 41914 65653	Dyke on south of road starts at TN coordinates. Dyke heads away from road southeast.
11	NR 42104 65670	Water crossing - 2m wide, 5-10cm deep.
12	NR 42206 65398	Watercourse crossing - 0.5m wide, around 5cm deep.
13	NR 42175 65384	Old Ash tree with moderate bat roost potential.
14	NR 42175 65304	Water crossing - 3m wide, 30-50cm deep.
15	NR 42188 65293	Water crossing - 2m wide, 30-50cm deep.
16	NR 42323 65244	Water crossing - 2m wide, 10cm deep.
17	NR 42844 65410	Good area of blanket bog with *Sphagnum papillosum*, *S. cuspidatum*, *S. capillifolium* and *S. fallax* present.
18	NR 42844 65336	Water crossing – 2m wide. Waterfall - 0.5-1m deep.
19	NR 42374 64904	Water crossing - 2m wide, 10 cm deep.
20	NR 42974 65382	Water crossing - 1.5m wide and 30-50cm deep.
21	NR 42867 65206	Good area of blanket bog with *Sphagnum papillosum* and *S magellanicum* present. Bog pools present.
22	NR 42795 65325	Original water crossing point to the north of the substation. Downy birch woodland. Water crossing has been moved west out with woodland area.

Photograph, TN01

Photograph, TN02

Photograph, TN03

Photograph, TN04

Photograph, TN05

Photograph, TN06

Photograph, TN07

Photograph, TN08

Photograph, TN09

Photograph, TN010

Photograph, TN011

Photograph, TN012

Photograph, TN013

Photograph, TN014

Photograph, TN015

Photograph, TN016

Photograph, TN017

Photograph, TN018

Photograph, TN019

Photograph, TN020

Photograph, TN021

Photograph, TN022

APPENDIX 4 – BOTANICAL SPECIES LIST

Sound of Islay Extended Phase 1 Habitat Survey - Species List	
Ash	*Fraxinus excelsior*
Alder	*Alnus glutinos*
Beech	*Fagus sylvatica*
Bell heather	*Erica cinerea*
Billberry	*Vaccinium myrtillus*
Blackberry	*Rubus fruticosus*
Blackthorn	*Prunus spinosa*
Black knapweed	*Centaurea nigra*
Bog Asphodel	*Narthecium ossifragum*
Bog Moss	*Sphagnum capillifolium*
Bog Moss	*Sphagnum cuspidatum*
Bog Moss	*Sphagnum fallax*
Bog Moss	*Sphagnum papillosum*
Bog Moss	*Sphagnum magellanicum*
Bog Moss	*Sphagnum denticulatum*
Bog Myrtle	*Myrica gale*
Bracken	*Pteridium aquilinum*
Broom	*Cytisus scoparius*
Cross leaved heather	*Erica tetralix*
Deergrass	Trichophorum cespitosum
Devil's-bit Scabious	Succisa pratensis
Downy Birch	*Betula pubescens*
Gorse	*Ulex erupaeus*
Grey Alder	*Alnus glutinosa*
Hazel	*Corylus avellana*
Heathbedstraw	*Galium saxatile*
Heath Rush	*Juncus squarrosus*
Herb Robert	*Geranium robertianum*
Jointed Rush	*Juncus articulatus*
Marsh Thistle	*Cirsium palustre*
Meadowsweet	*Filipendula ulmaria*
Oak	*Quercus* sp.
Purple Moor Grass	*Molinia caerulea*
Red clover	*Trifolium pratense*
Reindeer moss	*Cladonia rangiferina*
Scots Pine	*Pinus sylvatica*
Sharp-flowered Rush	*Juncus acutiflorus*
Sitka Spruce	*Picea sitchensis*
Soft Rush	*Juncus effusus*
Stinging Nettle	*Urtica dioica*
Sweet Vernal Grass	*Anthoxanthum odoratum*
Sycamore	*Acer pseudoplatanus*

Sound of Islay Extended Phase 1 Habitat Survey - Species List	
Tormentil	*Potentila erecta*
Tufted Hair Grass	*Deschampsia cespitosa*
Velvet Bent Grass	*Agrostis canina*
Wavy hair grass	*Deschampsia flexuosa*
White clover	*Trifolium repens*
Willow	*Salix* sp.
Yorkshire Fog	*Holcus lanatus*

APPENDIX 5 – CONFIDENTIAL APPENDIX