

# **EARBA STORAGE**

**A GILKES ENERGY COMPANY**

## **Earba Pumped Storage Hydro Scheme EIA Report**

### **Chapter 20: Mitigation Schedule**

**February 2024**



## Quality Information

Prepared by

Chris Pasteur

Checked by

Gavin McGill

Approved by

David Tomb

## Revision History

Revision

01

Revision Date

February 2024

Details

Issue to ECU

Authorised

Gavin McGill

© 2024 Gilkes Energy Ltd. All Rights Reserved

# Contents

|                                                                |    |
|----------------------------------------------------------------|----|
| Introduction                                                   | 1  |
| Chapter 2 – The Proposed Development                           | 2  |
| Chapter 3 – Consideration of Alternatives and Design Evolution | 3  |
| Chapter 6 – Hydrology and Water Management                     | 4  |
| Chapter 7 – Landscape and Visual                               | 5  |
| Chapter 8 – Terrestrial Ecology                                | 6  |
| Chapter 9 – Forestry                                           | 15 |
| Chapter 10 – Ornithology                                       | 15 |
| Chapter 11 – Aquatic Ecology                                   | 16 |
| Chapter 12 – Geology, Soils and Water                          | 19 |
| Chapter 14 – Land Use                                          | 28 |
| Chapter 15 – Recreation and Access                             | 28 |
| Chapter 16 – Cultural Heritage                                 | 29 |
| Chapter 17 – Transport and Access                              | 29 |
| Chapter 18 – Noise and Vibration                               | 32 |
| Chapter 19 – Socioeconomics and Tourism                        | 34 |

## 20. Mitigation Schedule

### 20.1 Introduction

- 20.1.1 The purpose of this Mitigation Schedule is to provide a summary of mitigation measures proposed in the various chapters of the EIA Report to minimise or offset any potential negative environmental effects of the Proposed Development. These are presented in **Table 1 – Mitigation Schedule** below.
- 20.1.2 During the construction phase, these would be detailed within and implemented by means of a Construction Environmental Management Document (CEMD). A draft CEMD is included with the EIA Report at **Appendix 2.3 – Draft CEMD**.

**Table 1 – Mitigation Schedule**

| Ref                                         | Subject                                                       | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EIAR Reference                   |
|---------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <b>Chapter 2 – The Proposed Development</b> |                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                  |
| 2-1                                         | Dams vegetated faces                                          | The downstream face of the Shuas and Shios dams will be topsoiled and vegetated to match the surrounding areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Chapter 2, para 2.5.9 and 2.5.12 |
| 2-2                                         | Earba reservoir promontories                                  | The area of grassland separating the existing Earba lochs would be permanently inundated by the Earba reservoir. In order to break up the linearity of the reservoir margins, promontory areas landscaped with trees, similar to that existing on the south shore of the existing north Earba Loch, would be created at the north and south sides reservoir as shown in Figure 2.2 – Scheme Arrangement.                                                                                                                                                                                                                | Chapter 2, para 2.5.14           |
| 2-3                                         | Underground waterway system                                   | Apart from the Pitridh aqueduct, which is an open channel for aquatic ecology reasons, all water conduits will be underground                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Chapter 2, para 2.5.15           |
| 2-4                                         | Surge shafts constructed by raise boring                      | It is planned to construct the surge shafts with a raise boring technique which leaves the excavation arisings in the tunnel at the bottom of the shaft to be transported out through the low-level tunnels. This reduces the transport of excavated material from the top of the shafts, and consequently the scale of access track and site establishment required there.                                                                                                                                                                                                                                             | Chapter 2, para 2.5.21           |
| 2-5                                         | Powerhouse landscape mitigation                               | The powerhouse and switchyard would be in a landscaped benched cutting to minimise the locations from which these structures would be visible.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Chapter 2, para 2.5.32           |
| 2-6                                         | Indoor switchyard                                             | The switchyard adjacent to the powerhouse will be housed within a building similar to the powerhouse superstructure to minimise its visual impact.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Chapter 2, para 2.5.34           |
| 2-7                                         | Use of existing access tracks                                 | Wherever possible, existing access tracks would be used in favour of constructing new tracks.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Chapter 2, para 2.5.42           |
| 2-8                                         | Reduction of access track width on completion of construction | To reduce visual impact of permanent tracks.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Chapter 2, para 2.5.56           |
| 2-9                                         | Mass balance strategy                                         | A mass balance / spoil management strategy has been designed for the Proposed Development which would maximise the use of materials generated from within the site for use in the construction of the permanent works and which would put any surplus materials generated from construction of the permanent works to beneficial use within the site. This would minimise the environmental impact of the Proposed Development by avoiding the need to transport bulk materials to the site wherever possible and by minimising the generation of any waste material that would need to be taken off site for disposal. | Chapter 2, para 2.5.61           |
| 2-10                                        | On site workers' camp                                         | This would reduce the additional traffic generated by the construction work.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Chapter 2, para 2.5.72           |

| Ref  | Subject                              | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | EIAR Reference                   |
|------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| 2-11 | Habitat Compensation and Enhancement | The Proposed Development would include a very significant package of habitat compensation and enhancement works, including approximately 600ha of peatland restoration, over 1000ha of fenced land around the Earba reservoir and surrounding hills which will provide an area for woodland restoration, and some further species-specific habitat enhancement works. These proposals would demonstrably contribute to the enhancement of biodiversity, including restoring degraded habitats and building and strengthening nature networks and the connections between them. Details of the proposed habitat compensation and enhancement works are outlined in Chapter 8 – Terrestrial Ecology and Appendix 8.6 - Outline Biodiversity Enhancement and Management Plan. | Chapter 2, para 2.5.82           |
| 2-12 | Implementation of CEMD               | Construction mitigation and environmental protection measures would be managed through a suite of documents under the umbrella of a Construction Environmental Management Document (CEMD). An outline CEMD is attached at Appendix 2.3 – Outline Construction Environmental Management Document.                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Chapter 2, para 2.8.1            |
| 2-13 | Micrositing                          | There may be a requirement to microsite elements of the Proposed Development from the positions shown on Figure 2.2 – Scheme Arrangement, as a result of additional environmental constraints encountered during site works. Any micrositing would require agreement of the specialist advisors (e.g. the ECoW) as appropriate.                                                                                                                                                                                                                                                                                                                                                                                                                                            | Chapter 2, para 2.8.5            |
| 2-14 | Site reinstatement                   | Reinstatement would be undertaken as soon as practical following the construction works in each area.<br>Site tracks and some hardstanding areas would be retained for use during maintenance operations, although except for the main track from the A86 to the powerhouse, construction tracks would be reinstated to 4 m with passing places. The track edges would as far as possible be blended to the adjacent contours, with natural vegetation being allowed to re-establish.<br>All construction equipment and other temporary infrastructure would be removed from site and the temporary storage areas would be reinstated.                                                                                                                                     | Chapter 2, para 2.8.10 to 2.8.12 |
| 2-15 | Construction lighting                | For safety reasons, temporary lighting would be required for all external construction activities during hours of darkness and low natural light. This lighting would be designed to minimise illumination, glare or light spillage to nearby receptors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Chapter 2, para 2.10.1           |
| 2-16 | Operational lighting                 | Once operational, external lighting would only be provided at key areas, such as the lower control works but would only be used during essential operational and maintenance activities, for example if a switching operation was necessary in the external switchyard. No lighting would be operated by PIRs. Prior to the commencement of Proposed Development, final design details for the external lighting during operation would be agreed with the Planning Authority.<br>The powerhouse surface building will be designed with automatic blinds on all glazed windows and doors, with these closed between dusk and dawn.                                                                                                                                         | Chapter 2, para 2.10.3 to 2.10.4 |

| Ref                                                                   | Subject                                            | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EIAR Reference                                                 |
|-----------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| 2-17                                                                  | Electric Car Charging Point Strategy               | Wherever practicable, vehicles used in the operation of the Proposed Development would be electric vehicles (EVs). The powerhouse would be provided with sufficient charging points for all vehicles used to operate the scheme, as well as for staff vehicles to recharge whilst at work.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Chapter 2, para 2.11.11                                        |
| 2-18                                                                  | Renewable power for construction                   | There is potential to locate temporary solar arrays within the footprints of the site compounds, which would enhance the sustainable use of electric vehicles and plant. Electrical power supply and charging from several of the local hydroelectric schemes in the vicinity of the works would also be explored as a viable sustainable temporary power supply.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Chapter 2, para 2.11.2                                         |
| <b>Chapter 3 – Consideration of Alternatives and Design Evolution</b> |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                |
| 3-1                                                                   | Design evolution to mitigate environmental effects | The Proposed Development has been subject to extensive design evolution in response to the constraints identified as part of the baseline studies, intended to reduce environmental effects. These are detailed in Chapter 3 - Consideration of Alternatives and Design Evolution.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Chapter 3 - Consideration of Alternatives and Design Evolution |
| <b>Chapter 6 – Hydrology and Water Management</b>                     |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                |
| 6-1                                                                   | Mitigation for effects on Ardverikie hydro         | Prior to any filling, an agreement would be reached with Ardverikie Hydro (owned by Ardverikie Estate) on compensation due to lost generation as a result of the Earba reservoir filling operations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Chapter 6, para 6.8.1                                          |
| 6-2                                                                   | Mitigation for effects on Lochaber hydro           | Prior to any filling of the lower Earba reservoir agreement would be reached with Lochaber Hydro (owned by GFG Alliance) on compensation due to any lost generation as a result of the filling operations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Chapter 6, para 6.8.2                                          |
| 6-3                                                                   | Flows to blanket bog area                          | During construction of the Pitridh diversion water would still pass downstream as compensation flow to maintain the blanket bog below.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Chapter 6, para 6.8.3                                          |
| 6-4                                                                   | Construction flows from Leamhain                   | During construction of the Leamhain dam the natural flow up to an agreed return period would bypass the works. As the temporary diversion at the Leamhain dam works would be achieved by over pumping the pumping capacity will likely not match the higher return period flood flows. This means that there will need to be a storm attenuation zone above the proposed temporary drawdown level of Loch Leamhain. This storm attenuation zone will need to be sufficient to store a set volume of storm water until it can be transferred through the pumping system. Furthermore, the pumping methodology will require to be reliable and with built in redundancy such that there is minimal risk of: a) depleting the downstream Allt Loch a Bealaich Leamhain and b) allowing water to build up to unacceptable levels. The full methodology for the temporary dewatering and flow bypass at Loch Leamhain will form part of the Construction CAR Licence to be agreed with SEPA. | Chapter 6, para 6.8.4                                          |
| 6-5                                                                   | Construction flows at Shios dam                    | At the Shios dam, until filling can commence water would be diverted around the dam works. This water would be utilised by the Ardverikie Hydro scheme in a reconfigured intake. It is proposed that the levels in Loch Earba are kept low during the construction of the dam foundations so the existing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Chapter 6, para 6.8.5                                          |

| Ref                                     | Subject                                                  | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EIAR Reference         |
|-----------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
|                                         |                                                          | dams on both the upper and lower Earba lochs would likely be decommissioned but may form part of the temporary works operations during the construction stage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                        |
| 6-6                                     | Operational compensation flows at Pitridh burns          | To mitigate against deterioration of the downstream water bodies in the Allt Coire Pitridh area, compensation flow would be released at each of the intakes on the Pitridh diversion channel.                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Chapter 6, para 6.8.6  |
| 6-7                                     | Operational compensation flows at Allt Leamhain          | To mitigate against any deterioration in the Allt Leamhain and areas downstream of Leamhain around the Allt Cam, the full natural flow would be provided through the Leamhain dam.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Chapter 6, para 6.8.7  |
| 6-8                                     | Operational compensation flows at Allt Labhrach          | Whilst not a mitigation as such, a potential benefit of the project is to introduce a continuous compensation flow into the Allt an Labhrach below Shios Dam. Currently this water course has no compensation flow entering it from the existing Ardverikie hydro scheme.                                                                                                                                                                                                                                                                                                                                                                                 | Chapter 6, para 6.8.8  |
| 6-9                                     | Restoration of Shuas blanket bog area                    | Taking water from all the Pitridh catchment burns may impact the area of blanket bog at the south end of Loch Earba. A substantial peatland restoration plan is proposed as part of this scheme, and this includes improving the quality of the blanket bog at the south of Loch Earba. Final compensation flows will be agreed with SEPA and in conjunction with specialist involved in the proposed peatland restoration project.                                                                                                                                                                                                                       | Chapter 6, para 6.8.10 |
| 6-10                                    | Operational sediment management from the Earba reservoir | Sediment moved downstream during spates in the Pitridh burns has the potential to accumulate in the proposed diversion channel. A geomorphology report has considered this in more detail and this report is included in Appendix 6.2. A sediment management plan for the Pitridh diversion channel will be agreed with SEPA as part of the CAR licence application.                                                                                                                                                                                                                                                                                      | Chapter 6, para 6.8.11 |
| <b>Chapter 7 – Landscape and Visual</b> |                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        |
| 7-1                                     | Reinstatement of vegetation                              | Reinstatement of vegetation across all areas disturbed by the works and not required for operational use. A high standard of re-instatement would be key to re-establishing vegetation types appropriate to the receiving landscape. This would include the careful stripping, storage and replacement of existing turves and peat / soils to allow natural regeneration to occur. A suitable upland seed mix may be used to supplement natural regeneration and help to reduce erosion, whilst the native seed bank establishes, if considered necessary. Further details of reinstatement proposals are included in <b>Appendix 2.3: Outline CEMD</b> . | Chapter 7, para 7.8.2  |
| 7-2                                     | Tracks narrowed on completion of construction            | Tracks would be narrowed on completion to the minimum width that operational requirements would allow. This would reduce their visible footprint and bring them closer to the scale and character of existing tracks and paths within the landscape, in particular tracks around the upper reservoir. Narrowing of tracks would give the opportunity to incorporate landform to help these assimilate into the surrounding landscape, including mounding on the lower side to reduce visibility of the running surface;                                                                                                                                   | Chapter 7, para 7.8.2  |



| Ref | Subject                                              | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | EIAR Reference         |
|-----|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 7-3 | Cuttings to accommodate vegetation                   | Cuttings and embankments around tracks or other features would be reinstated at a gradient to accommodate vegetation where possible, except where they would be within bare rock.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Chapter 7, para 7.8.2  |
| 7-4 | Vegetated downstream faces to Shuas and Shios dams   | At the lower reservoir, it is proposed to establish vegetation on the downstream faces of the Shuas and Shios Dams. This would reduce the prominence of these features when seen from downstream. Native woodland planting is also proposed on the downstream side of the Shuas Dam which would further soften its appearance when viewed from the west;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Chapter 7, para 7.8.2  |
| 7-5 | Powerhouse on cutting in hillside                    | The powerhouse and substation would be set within a cutting in the hillside and landform created to wrap around the front of the building. This would help to sit the building within the landscape and would partially conceal it. Planting on this landform and the surrounding slopes to either side and above the powerhouse cutting would help to further conceal the building and soften the appearance of the cutting and landform.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Chapter 7, para 7.8.2  |
| 7-6 | Promontories to break up linearity of reservoir edge | It is proposed to construct two promontories at the mid-point of the lower reservoir which would go some way to re-establishing the original appearance of two separate lochs, particularly when looking laterally along the valley.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Chapter 7, para 7.8.2  |
| 7-7 | Landscape planting                                   | Further planting around the lower reservoir area is proposed to compensate for trees lost to the inundation. As well as planting around the powerhouse, this would include planting on the proposed promontories, and scattered planting along the shoreline to try to re-establish some of the existing types of views which are experienced of the tree-lined shoreline when looking along the loch-shore. Fencing to prevent grazing would also encourage natural regeneration of woodland in these areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Chapter 7, para 7.8.2  |
| 7-8 | Landform at entrance compound                        | A landform bund planted with native woodland would be installed adjacent to the entrance compound area to minimise potential visibility of features within this area during construction.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Chapter 7, para 7.8.2  |
| 7-9 | Landform                                             | Landform to help tie-in and conceal different built elements of the Proposed Development is considered within the mitigation through design. However, as the detailed design is developed for individual features and areas there would be opportunity to design more specific landform at a greater level of detail, to contain and tie-in permanent features. This could help to reduce the visible appearance of these features and the footprint of disturbed areas by maximising the area for vegetation growth, and would help these features assimilate with the surrounding landscape. The following measure are proposed: <ul style="list-style-type: none"> <li>At the surge shaft reduction in the size of the cuttings and restoration of gradual vegetated, slopes where possible would help to reduce the visible area whilst 'wraparound' landform around the lower edges of cut would help to reduce appearance of lower features including fencing, hardstanding or vehicles.</li> <li>Around the gate-shaft entrances, restoration of landform around these features would reduce the area of visible cut, whilst landform mounding on the lower side of the track</li> </ul> | Chapter 7, para 7.12.2 |

| Ref                                    | Subject                                                             | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | EIAR Reference         |
|----------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
|                                        |                                                                     | <p>opposite would help to reduce the visible facing of the structures in longer views across the reservoir. Similar measures could be taken at the tunnel adit.</p> <ul style="list-style-type: none"> <li>At the bases of the Shuas and Shios Dams, gradation of the toe of the slope would help the dams to smoothly tie into the adjacent landform, helping to disguise their height.</li> <li>At former borrow pits or compounds outside inundated areas, the restoration of contours and landform features which reflect and tie in with the surrounding terrain, such as ridges, knolls and erratic boulders, would help to reduce perceptibility of these features in the longer term.</li> </ul> |                        |
| 7-10                                   | Drawdown Areas                                                      | Where greatest extent of horizontal drawdown occurs on the lower reservoir across shallow ground (likely to be limited to areas in the central area between the two existing lochs), there may be opportunities to modify terrain within the drawdown area to create pools or small islands which would help to break up the visible extent of these areas. Small islands could be planted with riparian tree species to further minimise perceived extent of drawdown.                                                                                                                                                                                                                                  | Chapter 7, para 7.12.3 |
| 7-11                                   | Finishes                                                            | Detailed consideration of finishes to permanent features, including at the powerhouse (such as doors or vents), gate shaft entrances, tunnel adits and features such as railings or valves would help these to appear less prominent within the landscape. Dark grey or brown colours would result in features being more regressive and would reflect the tones and colours of shadowed rock and peat within the surrounding landscape context.                                                                                                                                                                                                                                                         | Chapter 7, para 7.12.4 |
| 7-12                                   | Restoration of Borrow Pits and Working Areas within Inundated Areas | Softening of cuttings and shapes of borrow pits and working platforms which would be visible within the drawdown area or would modify the shapes of the inundated reservoirs would help to create waterbodies which would appear more natural within the landscape in the longer term. This could include breaking out some cut faces or reinstatement of softer contours with un-used excavated materials.                                                                                                                                                                                                                                                                                              | Chapter 7, para 7.12.5 |
| <b>Chapter 8 – Terrestrial Ecology</b> |                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |
| 8-1                                    | Mitigation by design                                                | The Proposed Development has been subject to a design evolution in response to the constraints identified as part of the baseline studies, intended to reduce environmental effects (see <b>Chapter 3: Consideration of Alternatives and Design Evolution</b> for further details). With respect to non-avian terrestrial ecology the changes outlined in rows 8-2 to 8-4 below have been incorporated to avoid or minimise negative effects.                                                                                                                                                                                                                                                            | Chapter 8, para 8.7.1  |
| 8-2                                    | Avoid / Minimise Effects on Sensitive Habitats                      | <ul style="list-style-type: none"> <li>Borrow pits have been located within proposed inundation zones or within an existing borrow pit, to avoid additional land-take;</li> <li>Existing estate tracks would be used (and upgraded) where possible, in preference to creating new tracks, in order to reduce land-take and minimise additional drainage effects of wetland</li> </ul>                                                                                                                                                                                                                                                                                                                    | Chapter 8, para 8.7.1  |

| Ref | Subject                                                                | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | EIAR Reference        |
|-----|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
|     |                                                                        | <p>habitats. This includes use of a c. 1.5 km length of existing track at the Site entrance through a large area of blanket bog;</p> <ul style="list-style-type: none"> <li>• Construction compounds have been sited within the proposed inundation zones where possible, to reduce land-take. Some construction compound areas are required beyond the inundation zones, due to the requirement for inundation before the end of the construction period. However, these have been minimised as far as possible, and have been sited to avoid blanket bog habitat and deep peat;</li> <li>• The main construction compound has been re-sited away from blanket bog habitat on flat ground by the Site entrance, and on to non-bog habitats (primarily acid grassland) near the proposed Shuas dam;</li> <li>• Construction tracks have been sited within the proposed inundation zones where feasible, to minimise additional land-take;</li> <li>• Access tracks have been micro-sited to avoid sensitive flush habitats and other high value habitats including montane willow scrub, where technically feasible;</li> <li>• The infrastructure footprint and working corridor has been minimised as far as is practically possible, to minimise land-take.</li> <li>• The layout of the access tracks was designed to minimise the requirement for watercourse crossings where possible. A minimum buffer of 10 m has been applied to all watercourses, with the exception of the proposed watercourse crossings, and where practical any proposed construction activities or infrastructure has been located outside of this buffer (excluding the inundation area) (see <b>Chapter 12: Geology, Soils and Water</b>).</li> </ul> |                       |
| 8-3 | Avoid / Minimise Effects on Protected and Other Notable Faunal Species | <ul style="list-style-type: none"> <li>• Access tracks have been micro-sited to avoid water vole burrows where technically feasible;</li> <li>• The proposed access track watercourse crossing to the west of the Shuas dam would be micro-sited to avoid the water vole burrow (and appropriate buffer as advised by the Ecological Clerk of Works (ECoW)) on this minor watercourse, if the water vole burrow is still present at the time of construction, as informed by pre-construction surveys (see paragraph 8.7.12) and overseen by the ECoW;</li> <li>• New watercourse or ditch crossings would be designed in a way to facilitate the movement of otter (and water vole) along the corridors through bankside reinstatement and reduced development footprints. This includes allowing for the safe passage of otters (and water vole) under rather than over the roads, by retaining the sections of natural bank, or providing a ledge above the water level for movement;</li> <li>• The proposed bridge crossing on the River Spean would be designed sensitively for bats, by: maintaining a free flight of 2 m above water level to allow free movement and foraging from <i>Myotis</i> sp. bats; and minimising tree loss in this area;</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Chapter 8, para 8.7.1 |

| Ref | Subject                                                                         | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | EIAR Reference        |
|-----|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
|     |                                                                                 | <ul style="list-style-type: none"> <li>Intake / outlet and tailrace structures at the upper and lower lochs, and compensation flow outlets, would be screened (comprising a 12.5 mm mesh aperture), such that otter (and fish) will be protected from becoming entrapped or injured / killed, or accessing the turbines, in accordance with NatureScot and SEPA guidance (further information regarding screening is contained in <b>Chapter 11: Aquatic Ecology</b>).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |
| 8-4 | Water Management                                                                | <ul style="list-style-type: none"> <li>A compensation flow discharge to Allt Loch a' Bhealaich Leamhain (which drains from Loch Leamhain) which mimics the natural outflow from the existing (baseline) catchment would be made, to maintain the hydrological regime of the Allt Loch a' Bhealaich Leamhain and downstream habitats (including the Allt Cam and Loch Pattack). This outflow would be maintained during construction and operation. The rate of discharge will be agreed with SEPA as part of a CAR application and would be informed by a site-specific flow monitoring record (further information is contained within <b>Chapter 6: Hydrology and Water Management</b>).</li> <li>To facilitate construction of the Leamhain dam and associated infrastructure it will be necessary to lower the water level of the existing Loch Leamhain via discharge to the Allt Loch a' Bhealaich Leamhain, during construction. This will be undertaken in accordance with a CAR authorisation agreed with and regulated by SEPA. The CAR application and authorisation will contain a method statement, flow rate and volume controls, and water quality standards. The rate and volume of discharge to the Allt Loch a' Bhealaich Leamhain will be no greater than currently occurs, and thus within the capacity of the Allt Loch a' Bhealaich Leamhain channel downstream of the Site. It is expected that this would be stipulated within the CAR authorisation. This will ensure the Allt Loch a' Bhealaich Leamhain and downstream watercourses / waterbodies remain stable, and that their geomorphology and habitats dependent on / adjacent to the watercourses / waterbody are not impaired. The CAR application would be made as part of the detailed design stage of the project.</li> <li>A compensation flow discharge (Q95 flows) would be made to the Allt Labhrach, Allt Coire Pitridh, Allt Coire a' Chlachair and associated tributaries, details of which would be agreed with SEPA as part of a CAR application (further information is contained within <b>Chapter 6: Hydrology and Water Management</b>).</li> </ul> | Chapter 8, para 8.7.1 |
| 8-5 | Embedded Measures: Outline Biodiversity Enhancement and Management Plan (OBEMP) | To compensate for the significant residual effects upon important ecological features, and to provide significant enhancement, a Biodiversity Enhancement and Management Plan (BEMP) would be produced. An Outline BEMP is provided in <b>Appendix 8.6: Outline BEMP</b> , and an overview figure provided as <b>Figure 8.7</b> . These describe extensive habitat restoration, creation and management measures across the Site and the majority of the wider Ardverikie Estate, comprising a total area of c. 12,501 ha.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Chapter 8, para 8.7.2 |

| Ref | Subject | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EIAR Reference        |
|-----|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 8-6 | OBEMP   | 8.7.3 The OBEMP has been developed in consultation with NatureScot and THC. Information on the rationale for the development of the OBEMP proposals, which has gone through several draft iterations in response to consultee feedback, is provided in <b>Appendix 8.6</b> . The final measures presented within the OBEMP are considered to: represent the highest certainty of outcome; represent the greatest biodiversity benefit with the greatest extent and diversity of habitat enhancement, including montane areas; take into account consultee feedback to date; retain Ardverikie Estate's heritage as a sporting estate whilst delivering habitat enhancement over the majority of the estate; and be supported by Ardverikie Estate, the developer, and its specialist ecology advisers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Chapter 8, para 8.7.3 |
| 8-7 | OBEMP   | <p>The goals and objectives of the OBEMP are summarised as follows:</p> <ul style="list-style-type: none"> <li>• <b>Goal 1. Bog restoration:</b> Objective 1.1. Undertake bog restoration to directly restore 625 ha of degraded / modified bog;</li> <li>• <b>Goal 2. Woodland restoration:</b> Objective 2.1. Restore and create native woodland to enhance biodiversity connectivity, via a 1,496 ha deer enclosure and targeted planting. Areas targeted within the deer enclosure are:</li> <li>• <b>Goal 3. Restoration of montane willow scrub and other montane habitat:</b> Objective 3.1. Restore montane willow scrub and other montane habitat, via a 1,496 ha deer enclosure, and targeted planting. Approximately 200 ha is targeted within the deer enclosure.</li> <li>• <b>Goal 4. Enhancement of heathland and other upland habitats:</b> Objective 4.1. Reduce deer numbers by 39% (8 deer per km<sup>2</sup>) outwith the deer enclosure, across a c. 11,390 ha deer control area to provide benefits to upland habitats including heathland and facilitate bog restoration. An estimated 6,490 ha of this area comprises heathland. A further c. 328 ha of open upland habitats would also benefit from grazing exclusion within the deer enclosure area.</li> <li>• <b>Goal 5. Watercourse and aquatic / riparian enhancement:</b> Objective 5.1. Enhance the c. 2.2km long Allt Labhrach by re-wetting; Objective 5.2. Create c. 20.9 ha of riparian woodland; Objective 5.3. Enhance spawning habitat on Moy Burn; Objective 5.4. Install large woody structures in littoral zones; Objective 5.5. Install artificial floating spawning nests within Loch Leamhain and Loch Earba.</li> <li>• <b>Goal 6. Remove invasive species:</b> Objective 6.1. Removal of all identified Rhododendron.</li> <li>• <b>Goal 7. Control bracken:</b> Objective 7.1. Control bracken within a 10.6 ha area.</li> <li>• <b>Goal 8. Reinstate habitats disturbed during construction:</b> Objective 8.1. Reinstate c. 90 ha of habitats temporarily disturbed during construction within the working corridor.</li> <li>• <b>Goal 9. Translocate sensitive plant species:</b> Objective 9.1. Translocate sensitive plant species during construction at 9 locations (downy willow, field gentian, petty whin and hawkweed sp.).</li> </ul> | Chapter 8, para 8.7.4 |

| Ref | Subject                           | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | EIAR Reference                  |
|-----|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
|     |                                   | <ul style="list-style-type: none"> <li>• <b>Goal 10. Enhance nesting / roosting habitat for mammal species:</b> Objective 10.1. Erect 50 bat boxes, 50 red squirrel boxes and 30 pine marten boxes.</li> <li>• <b>Goal 11. Enhance reptile habitat:</b> Objective 11.1. Create 1 reptile hibernacula and log piles.</li> <li>• <b>Goal 12. Enhance habitat for divers:</b> Objective 12.1. Provide nesting platforms for divers on appropriate lochans (subject to monitoring).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                 |
| 8-8 | OBEMP monitoring and management   | Monitoring would be undertaken to measure the success of the restoration and management measures, to measure the achievement of the goals and objectives of the OBEMP, and to inform adaptive management and remedial action as necessary.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Chapter 8, para 8.7.4           |
| 8-9 | Good practice mitigation measures | <ul style="list-style-type: none"> <li>• Full details of construction mitigation measures would be provided in a Construction Environmental Management Document (CEMD). A draft outline <b>CEMD</b> is included as <b>Appendix 2.3</b>, a Peat Management Plan (PMP) as <b>Appendix 12.2: PMP</b>, and a draft Pollution Prevention Plan (PPP) as <b>Appendix 2.1</b>.</li> <li>• Good practice measures in relation to pollution risk, sediment management and watercourse crossings to be adopted during the construction and operation phases are set out in <b>Chapter 6: Hydrology and Water Management</b> and <b>Chapter 12: Geology, Soils and Water</b>. During the construction phase, good practice techniques with respect to peatland environments, as contained within SNH (2019), would be implemented. Good construction practice and methodologies to prevent peat instability within areas that contain peat deposits would be implemented as detailed in <b>Chapter 12: Geology, Soils and Water</b> and <b>Appendix 12.1: PLHRA</b>. Further details on peat and water management during construction are provided in <b>Chapter 6: Hydrology and Water management</b>, <b>Chapter 12: Geology, Soils and Water</b> and are outlined in <b>Appendix 2.3: Outline CEMD</b> and <b>Appendix 2.1: draft PPP</b>.</li> <li>• Good practice measures to protect retained habitats outside of the inundation zone during the construction phase would be implemented, including the erection of temporary protective fencing demarcating the working corridor and all trees to be retained, to be overseen and policed by an Ecological Clerk of Works (ECoW) (see paragraphs 8.7.13 - 8.7.14). Appropriate buffer zones would be implemented when erecting barriers to avoid inadvertent damage from heavy machinery / plant manoeuvring. This would incorporate Root Protection Areas (RPA) for retained trees (to avoid damage to the root plates of retained trees near the working corridor), as detailed in a Tree Protection Plan (a draft outline TPT is provided in Appendix 9.2. Vehicular access would not be permitted outside of the working corridor. Within the working corridor outside of permanent infrastructure areas, vehicular access would be restricted across unprotected ground out-with the working corridor, using only load-spreading, wide-tracked plant, deploying bog-mats or trackway as appropriate and avoiding streams, mires and flushes where possible. Sensitive habitats within the working corridor, such as flushes, springs,</li> </ul> | Chapter 8, para 8.7.5 to 8.7.11 |



| Ref | Subject | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | EIAR Reference |
|-----|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
|     |         | <p>montane willow scrub would be demarcated by the ECoW, and these areas avoided where feasible.</p> <ul style="list-style-type: none"> <li>• Good practice mitigation to protect habitats from dust deposition would be contained within the CEMD.</li> <li>• Mitigation measures for Groundwater Dependent Habitats are detailed in <b>Appendix 12.4</b> and <b>Chapter 12: Geology, Soils and Water</b>. Measures, such as permeable access tracks and regular cross track drains, have been proposed to safeguard existing water flow paths and maintain existing water quality. These measures would be included in the final CEMD. Micro-siting (for example of tracks) would also be undertaken under direction of the ECoW to safeguard valuable habitats, such as flushes, where possible. The ECoW would supervise construction works, and would have the authority to approve drainage measures, and ensure their efficacy. It is considered therefore that the majority of the water dependent habitats identified by the NVC mapping can be sustained. This would be confirmed, in accordance with good practice, by the ECoW at the time of the construction who would ensure existing surface water flow paths and water flushes are maintained where possible (see <b>Chapter 12: Geology, Soils and Water</b>).</li> <li>• Good practice techniques for vegetation and habitat reinstatement would be adopted and implemented on areas subject to disturbance during construction (outside of the inundation zone) as soon as is practicable. This would include excavated materials being stored according to good practice taking care to separate turves, topsoils, soils and peat layers. Reinstatement would ensure that turves are replaced on the surface. Construction tracks would be reinstated to 4 m with passing places following construction, with the exception of the main track from the A86 to the powerhouse. All construction equipment and other temporary infrastructure would be removed from Site and the temporary storage areas would be reinstated.</li> <li>• Mitigation to protect fish is detailed in <b>Chapter 11: Aquatic Ecology</b>, and would include measures such as implementation of a Surface Water Quality Monitoring Programme; noise and vibration controls which would be detailed within a Construction Noise and Vibration Management Plan; sensitive timing of instream works; fish rescues and relocations; relocation of juvenile Arctic Charr from the Allt Coire Pitridh to the Moy Burn via electrofishing; using appropriate culvert designs; implementing sensitive construction lighting; implementing a 'soft start' approach to any piling operations; spawning habitat improvement to retained habitat; provision of an aqueduct channel with substrate and channel design suitable for spawning, to maintain spawning access between Loch Earba, the Allt Choire Pitridh and the Allt a' Choire Chlachair; creation of terraced pools to maintain marginal loch spawning habitat, macrophyte</li> </ul> |                |

| Ref  | Subject                   | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | EIAR Reference                   |
|------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
|      |                           | and macroinvertebrate habitat; and creation of artificial spawning nests for Arctic charr <i>Salvelinus alpinus</i> within Loch Leamhain and Loch Earba..                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                  |
| 8-10 | Pre-Construction Surveys  | Due to the time that will have elapsed since the last surveys and construction, coupled with the possibility that protected mammal species activity could have changed in the intervening period, a pre-construction survey for otter, water vole, badger, red squirrel, pine marten and Scottish wildcat will be undertaken. This would cover all suitable habitat within 250m of infrastructure and working corridors. The results of the pre-construction surveys will inform the need for further mitigation (if required) in respect of working practices, or consultation with NatureScot, if required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Chapter 8, para 8.7.12           |
| 8-11 | Ecological Clerk of Works | <p>A suitably qualified ECoW or ECoW team would be employed for the duration of the construction and reinstatement periods, to ensure ecological interests are safeguarded. The role of the ECoW would include (but not be limited to) the following tasks:</p> <ul style="list-style-type: none"> <li>• Give toolbox talks to all staff on-site, e.g. an ecological induction, so staff are aware of the ecological sensitivities on the Site and the legal implications of not complying with agreed working practices;</li> <li>• Agree and monitor measures designed to minimise damage to retained habitats, including marking out Root Protection Areas and sensitive habitats where appropriate;</li> <li>• Demarcate retained water vole burrows and 20m buffers (under the discretion of the ECoW) to protect them from construction activities;</li> <li>• Undertake pre-construction surveys and advise on ecological issues where required;</li> <li>• Oversee implementation of a Biosecurity Management Plan, to minimise risk of inadvertent spread of invasive non-native species; and</li> <li>• Pre-construction inspections of areas which require species-specific mitigation and supervision of relevant mitigation measures, including supervision during habitat clearance for reptiles, as detailed within Species Protection Plans (SPPs).</li> </ul> <p>The ECoW would also undertake additional roles such as assisting with hydrological measures and / or checking for nesting birds (see <b>Chapter 10: Ornithology</b> and <b>Chapter 12: Geology, Soils and Water</b>).</p> | Chapter 8, para 8.7.13 to 8.7.14 |
| 8-12 | Lighting                  | <p>Temporary construction lighting would be restricted to the minimum required for safety reasons, which would be required for any external construction activities during hours of darkness and low natural light. This lighting would be designed to minimise illumination, glare or light spillage to nearby receptors. Construction lighting details would be provided in the final CEMD.</p> <p>Operational lighting would also be restricted to the minimum required for operational and security purposes. Once operational, external lighting would only be provided at key areas, such as the lower control works but would only be used during essential operational and maintenance activities, for example if a switching operation was necessary in the external switchyard. The powerhouse</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Chapter 8, para 8.7.13 to 8.7.14 |



| Ref  | Subject                      | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EIAR Reference                   |
|------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
|      |                              | surface building would be designed with automatic blinds on all glazed windows and doors, with these closed between dusk and dawn. Lighting would be directed away from the most sensitive habitats including woodland and waterbodies, wherever possible, to minimise light spill to adjacent habitats. Lighting would avoid specifications with a high UV component. Operational lighting details would be agreed with the Planning Authority prior to construction.<br>Any lighting required in areas of likely bat activity, including at the River Spean crossing, would be in line with current guidance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                  |
| 8-13 | Invasive Non-Native Species  | Rhododendron was the only invasive non-native plant species recorded on the Site during baseline surveys, and Rhododendron control would be undertaken (see <b>Appendix 8.6</b> ). As distribution of such species can change, on a precautionary principle a pre-construction survey for invasive non-native plant species would be undertaken. A Biosecurity Management Plan would be produced, which would be informed by the results of the pre-construction survey, and would be adhered to for the duration of construction, to prevent the spread of invasive non-native species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Chapter 8, para 8.7.18           |
| 8-14 | Protected Species            | Species Protection Plans (SPPs) would be developed and adhered to during construction, to protect faunal groups. As part of the SPPs, the contractor would keep a log of incidental sightings and road kills, which would be reported to the ECoW to advise on appropriate action, as required. SPPs would form part of the final CEMD and any protected species licence applications. Further details are provided in the following sections.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Chapter 8, para 8.7.19           |
| 8-15 | Protected Species - Reptiles | In order to comply with the Wildlife and Countryside Act 1981 (as amended in Scotland), mitigation would be employed to reduce the chances of inadvertently killing or injuring individual reptiles during construction works. Given the low numbers of reptiles likely to be present, the large areas of suitable habitat that would remain unaffected by the works and given also the large spatial scale of the works, fencing and translocation are not considered appropriate. Proposed mitigation, therefore, would involve vegetation management where appropriate and the identification / removal of potential refugia and hibernacula if present.<br>Where appropriate and safe to do so, potentially suitable habitats for reptiles located within construction working areas would be cut, under the supervision of the ECoW, prior to construction works commencing in that area, in order to encourage reptiles to leave the area. Where required, suitable habitat within working areas would also be searched by the ECoW prior to construction commencing and any potentially suitable refuges would be removed. Additionally, best efforts would be made to remove suitable hibernacula from the inundation zone prior to inundation, where features can be moved. These works would take place during the active season for reptiles (typically April to October, although this is dependent upon the nature of weather conditions in any one year). | Chapter 8, para 8.7.20 to 8.7.21 |

| Ref  | Subject                        | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | EIAR Reference                   |
|------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| 8-16 | Protected Species – Otter      | <p>Due to the presence of two otter couches within the proposed inundation zone, a licence would be obtained from NatureScot prior to the commencement of works within 30 m of the existing identified otter couches, along with any new otter resting places identified during the pre-construction survey. The licence application would include up to date survey information and an otter protection plan, detailing measures to protect and reduce disturbance to otter.</p> <p>During construction, site speed limits of 15 mph would reduce the likelihood of accidental injury / killing of otter or other mammal species by construction traffic. A site speed limit of 15 mph would also be in place during operation.</p> <p>All potentially dangerous substances or materials within construction compounds or used during maintenance activities during operation, would be carefully stored to prevent them causing any harm to otters or other mammal species which may enter the compounds at night.</p> <p>During construction, all excavations greater than 1 m depth would either be covered at night or designed to include a ramp to allow otters and other animals a means of escape should they fall in. These measures would also protect other fauna at the Site including pine marten, red squirrel and water vole.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Chapter 8, para 8.7.22 to 8.7.26 |
| 8-17 | Protected Species – Water Vole | <p>Due to the presence of a small water vole colony on the watercourse connecting the two lochs making up Loch Earba (where seven active burrows were recorded in 2023, see Appendix 8.4 and Confidential Figure 8.5), a licence would be obtained from NatureScot to undertake a water vole trapping and translocation process, to protect water vole from the unavoidable flooding of the burrows in this location.</p> <p>NatureScot advise that trapping and translocation, rather than displacement, is the better option to use when clearing an area of ground which has water voles, based on recent research findings. Water vole colonies can change their distribution frequently, particularly in upland environments, and therefore the licence application and mitigation works would be informed by up-to-date survey information (see paragraph 8.7.12). The licence application would also be accompanied by a comprehensive Species Protection Plan which would detail measures to protect water vole and minimise disturbance during construction. The trapping and translocation would be undertaken prior to inundation works, at a suitable time of year. Trapped water voles would be translocated to a suitable receptor site as close as possible to the original water vole colony location, but outwith the working corridor. The receptor site must support suitable habitat and have a carrying capacity to be able to sustain the relocated colony. Extensive areas of retained suitable habitat are present within the small watercourses between the River Spean and Loch Earba, and therefore the receptor site is anticipated to be within this area. However, the precise location of the receptor site would be informed by up-to-date surveys, and would depend on the precise distribution of water voles at that time.</p> | Chapter 8, para 8.7.27 to 8.7.29 |

| Ref  | Subject                                                                 | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | EIAR Reference                   |
|------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| 8-18 | Protected Species - Bats                                                | <p>All trees that require felling or pruning / lopping, or are at risk of damage, would be subject to an update assessment for bat roosting potential. The trees that have already been identified as having moderate or high bat roosting potential (trees with PRFs) or a confirmed roost (see Appendix 8.5), and any additional trees that have developed new moderate or high potential PRFs would be subject to detailed bat roost surveys prior to felling, to gather up to date survey information and to identify and characterise any roosts in trees to be felled / at risk of damage. Bat survey work would follow the methodologies within the current recently published guidelines (or any new published guidelines in place at the time of survey). Important bat roosts (maternity or hibernation roosts) are not likely to be present based on current survey data.</p> <p>A licence would be obtained for the loss of the small common pipistrelle day roost identified during baseline surveys (along with any additional roosts if identified during pre-construction surveys), and suitable mitigation provided, in consultation with NatureScot if required. Once a licence is in place, all trees with confirmed roosts that require felling / pruning / lopping would be exhaustively inspected by the bat licensed ecologist. If any features cannot be exhaustively checked they would be fitted with standard one-way exclusion devices for five consecutive nights, in weather conditions suitable for bats to be active. Once the bat licenced ecologist confirms that bats are absent, the tree would be carefully section felled under supervision by the licensed ecologist. To provide alternative roosting habitat, one bat box would be provided per PRF to be lost (whether bat roosts have been confirmed within them or otherwise), such that there would be no loss in bat roosting habitat. Bat boxes would be erected prior to felling of trees with PRFs, and if any bats are identified during the above works, they would be carefully moved to a bat box by the licenced ecologist. Where possible, for trees with PRFs being lost, suitable sections of the tree would be considered for translocation. Where trunks or major limbs support fissures, rot holes or other features these can be carefully removed (under supervision of both an ecologist and arborist) and relocated to new locations which will remain unaffected, such as secured in an upright position to the trunk of a large existing tree. Full details of the bat mitigation would be provided in the licence application to NatureScot. Trees that contain PRFs but where no roosting bats have been confirmed, would also be subject to sensitive section felling under the direct supervision of a bat licenced ecologist, as a precaution.</p> | Chapter 8, para 8.7.30 to 8.7.31 |
| 8-19 | Additional Mitigation, Compensation and Enhancement During Construction | <p>Embedded mitigation and good practice measures are detailed in Section 8.7, as well as in <b>Chapter 6: Hydrology and Water Management, Chapter 10: Ornithology, Chapter 11: Aquatic Ecology and Chapter 12: Geology, Soils and Water</b>, and as outlined in <b>Appendix 2.3: Outline CEMD</b>. To compensate for the significant residual effects upon important ecological features, and to provide significant enhancement, a BEMP would be produced. An Outline BEMP is provided in <b>Appendix 8.6: Outline BEMP</b>, and a summary of the measures proposed is provided in Section 8.7. An</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Chapter 8, para 8.9.1 to 8.9.2   |

| Ref                             | Subject                                                              | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EIAR Reference          |
|---------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
|                                 |                                                                      | assessment of the effects of measures within the OBEMP is provided in paragraphs 8.8.65 - 8.8.72 and <b>Table 8-11</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                         |
| 8-20                            | Additional Mitigation, Compensation and Enhancement During Operation | No specific mitigation measures, additional to the embedded mitigation and good practice measures detailed in Section 8.7, are required for the operational phase. However, compensation and enhancement measures provided as part of the BEMP would remain in place during the operational phase and monitoring of the measures provided as part of the BEMP would also continue during the operational phase (see above and also Appendix 8.6).                                                                                                                                                                                                                                                  | Chapter 8, para 8.9.3   |
| <b>Chapter 9 – Forestry</b>     |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                         |
| 9-1                             | Protection of retained woodland and trees                            | After tree felling and extraction of trees is completed, all retained trees and their root systems would be protected. Trees and groups of trees to be removed would require marking by a suitably qualified forest manager. A Tree Protection Plan (TPP) would be prepared by a qualified forest manager for all of the trees that could be affected by the construction of the Proposed Development prior to the commencement of any construction work on site, which would not start until the TPP has been accepted by THC. <b>Figure 9.1 - Draft TPP for the A86 Access Junction</b> is attached as an example of the standard of TPP that would also be provided in other areas of the site. | Chapter 9, para 9.8.1   |
| 9-2                             | Compensatory planting                                                | The permanent loss of 7.41 ha of woodland would be compensated for at a compensation ratio of at least 1:1 in terms of woodland lost to woodland created to be in compliance with the Scottish Government's Control of Woodland Removal Policy (CoWRP). As part of the overall mitigation process, and taking into account losses in biodiversity, a strong compensatory planting scheme of a total of c. 68.4 ha of native woodland is proposed to be planted around infrastructure areas within the site, together with a fenced area of over 1000 ha to include native woodland restoration.                                                                                                    | Chapter 9, para 9.8.2   |
| 9-3                             | Qualified Forest Manager                                             | A qualified and experienced forest manager would be employed to plan, implement, monitor, and manage all works relating to the compensatory planting.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Chapter 9, para 9.8.7   |
| <b>Chapter 10 – Ornithology</b> |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                         |
| 10-1                            | Mitigation by design                                                 | In relation to ornithology interests, the Applicant's approach to the EIA process has been to prioritise and implement mitigation in a hierarchical way. This approach focusses on developing a design through the consideration of alternative infrastructure layouts to avoid or minimise likely significant adverse effects, as discussed in <b>Chapter 3: Consideration of Alternatives and Design Evolution</b> within this EIAR.                                                                                                                                                                                                                                                             | Chapter 10, para 10.7.1 |
| 10-2                            | Employment of an ECoW                                                | There are several mitigation measures proposed to ensure potential effects on birds are minimised during the construction of the Proposed Development. These measures, outlined below, assume an Ecological Clerk of Works (ECoW) would be employed as required, during the construction phase to                                                                                                                                                                                                                                                                                                                                                                                                  | Chapter 10, para 10.9.1 |

| Ref                                 | Subject                                                  | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | EIAR Reference                          |
|-------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
|                                     |                                                          | ensure that disturbance within sensitive ecological areas is kept to an absolute minimum and contractors are aware of procedures to follow should they encounter a protected bird within the vicinity of the proposed works.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                         |
| 10-3                                | Monitoring in early breeding season                      | During the early breeding season (approximately early-April to mid-May), regular monitoring during the progression of the construction works should be undertaken by the appointed ECoW to ensure that any species nesting, or considering nesting, within close proximity of construction activity is detected, and suitable deterrence or protection measures are implemented at an early stage in agreement with the relevant statutory bodies.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Chapter 10, para 10.9.2                 |
| 10-4                                | Pre-construction access track surveys in breeding season | Where construction is required during the full breeding season (approximately early-April to late-July), the following mitigation procedures are recommended: <ul style="list-style-type: none"> <li>All defined routes of access track should be surveyed by a suitably qualified ornithologist before the start of construction to ascertain the potential risk to any breeding birds within the immediate construction area and a 100 metre buffer on the open moorland, and within 50 metre of any works undertaken in forested areas.</li> <li>In the event that nesting birds are present within the construction areas, or a risk of disturbance is identified, then appropriate measures should be taken to ensure that the potential for any significant effects is avoided. This may involve measures on the ground such as establishment of buffer-zones around nests to prevent any activity, as advised by the appointed site ECoW.</li> </ul>                                         | Chapter 10, para 10.9.3                 |
| 10-5                                | Mitigation for protected species                         | Further mitigation measures to ensure impacts during the construction and operational phases of the Proposed Development on protected bird species are minimised can be found in the <b>Appendix 10.1 - Ornithology – Confidential Annex</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Chapter 10, para 10.9.5                 |
| 10-6                                | Provision of diver rafts                                 | Historic bird data for Ardverikie Estate obtained from the RSPB suggests that black-throated diver possibly bred on the Earba lochans prior to the original Ardverikie hydro scheme being constructed. More recently, a diver raft installed nearby has had a 60% breeding success rate over the past three decades, and a further raft installation nearby has enjoyed annual breeding success over the past few breeding seasons. Following further monitoring of both the group of black-throated divers that currently congregate on Loch Earba and monitoring of suitability of both Loch Earba and other waterbodies within Ardverikie Estate, additional rafts would be provided in suitable locations within the estate, informed by monitoring results and in consultation with the RSPB Diver Raft Programme. The suitable placing of diver rafts may encourage more breeding pairs to take up residence, creating an important local breeding population for this rare breeding species. | Chapter 8, Appendix 8.6 – Outline BEMP. |
| <b>Chapter 11 – Aquatic Ecology</b> |                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                         |
| 11-1                                |                                                          | The Proposed Development has been subject to a number of design iterations based on initial data provided through baseline studies. The purpose of the identification of constraints at the early                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Chapter 11, paras 11.7.1 to 11.7.4      |

| Ref  | Subject                                                  | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | EIAR Reference          |
|------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
|      |                                                          | <p>stages of the scheme design is to reduce environmental effects (<b>Chapter 3: Consideration of Alternatives and Design Evolution</b>) in relation to aquatic IEFs. The following design changes have been incorporated to avoid or minimise negative effects:</p> <ul style="list-style-type: none"> <li>The approach velocity of water across the intake screen during abstraction / pumping mode will be &lt;0.3 m/s. This will ensure that most adult fish species will be able to overcome the effect of entrainment / impingement at the screens.</li> <li>Appropriately designed vertical bar screens of maximum 12.5 mm aperture to cover the intake/outlet will be installed to prevent fish from entering the underground waterway system at Loch Earba and Loch Leamhain. This will prevent the risk of fish entrainment, injury and mortality, of transfer of individuals between waterbodies. It is possible that smaller fish (i.e. juvenile brown trout, juvenile Arctic charr or European minnows) may be able to pass through the 12.5 mm mesh aperture, however, aperture to prevent all life stages (e.g. 1 mm) will result in continual foliage / debris build up and increase velocities across the screen, likely increasing the overall impact on fish.</li> <li>Embedded mitigation for spawning habitat losses will include the provision of optimal spawning substrate on diversion channels (Loch Earba) and floating spawning substrates (loch Leamhain) to mitigate against losses elsewhere in the catchment and enhance overall spawning opportunities for fishes.</li> </ul> |                         |
| 11-2 | Provision of CEMD and associated documents and processes | A Construction Environmental Management Document (CEMD), Pollution Prevention Plan (PPP), Dust Mitigation Plan and Surface Water Quality Monitoring Programme (SWQMP) will be implemented by the Principal Contractor and overseen by an ACoW (Aquatic Clerk of Works) or suitably experienced ECoW. A water quality sampling suite should be designed to cover likely present pollutants and undertaken at timescale to allow sufficient actions to be taken in the case of pollution incidents. Correct implementation of PPP and the SWQMP should result in negligible observable effect to IEFs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Chapter 11, para 11.9.2 |
| 11-3 | Aquatic noise limits                                     | Aquatic elements will be incorporated into the Construction Noise and Vibration Management Plan (CNVMP) to ensure noise and vibration limits are not in excess of limits capable of causing injury and/or mortality to fishes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Chapter 11, para 11.9.3 |
| 11-4 | Avoiding instream works in sensitive periods             | Instream works will be avoided, where practical, during sensitive spawning and localised migration periods for fish. Sensitive periods are October – June to cover salmonid spawning, egg development in gravels and hatching. Due to the programme of works, there are instances where instream works cannot be avoided during sensitive spawning and migration periods for fish and appropriate additional mitigation will be provided where this is the case.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Chapter 11, para 11.9.4 |



| Ref  | Subject                                          | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | EIAR Reference          |
|------|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| 11-5 | Fish rescue during culvert installation          | For the installation of any culverts on the access track, fish rescue and relocations should be taken prior to the damming / dewatering of the watercourse. This will protect any fish populations in the vicinity of the works from harm.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Chapter 11, para 11.9.5 |
| 11-6 | Translocation of juvenile charr at the Shuas dam | During the construction of the Shuas dam, juvenile Arctic charr present in the Allt Coire Pitridh will become isolated from Loch Earba, and will be unable to migrate to the loch when they reach a certain size. An increase in adult fish in the Allt Coire Pitridh will increase pressures on food availability and provide unsuitable habitat. Fish of a suitable size will be identified and removed, via electrofishing, and placed in the lower reaches of the Moy Burn to allow them to migrate into Loch Earba.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Chapter 11, para 11.9.6 |
| 11-7 | Shuas dam construction culvert                   | During the construction of the Shuas dam an appropriately designed culvert will be maintained, where possible, to allow the passage of fish from Loch Earba into the Allt Coire Pitridh (to spawn), and to allow juvenile fish to move into Loch Earba.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Chapter 11, para 11.9.7 |
| 11-8 | Monitoring measures implemented                  | <p>In line with MarineScotland guidance for the monitoring of watercourses in relation to onshore wind farm developments: generic monitoring programme, the following monitoring measures are to be employed. Guidance specific to large pumped storage hydro schemes does not exist and it is considered that pollution pathways will be similar, thus the guidance is applicable to the Proposed Development.</p> <ul style="list-style-type: none"> <li>To develop a reasonable baseline dataset from which to detect change it is important that sampling takes place during construction and for a period of at least a year after construction. Sampling should take place at intervals no greater than one month unless sensitive periods / constraints have been identified, e.g. concrete batching or known acidification problems. More frequent sampling of selected parameters, e.g. pH and turbidity should occur more frequently and can be undertaken in-situ by the ECoW.</li> <li>Ex-situ water analysis should be undertaken by an appropriately qualified laboratory (e.g. United Kingdom Accredited Service (UKAS)). Water quality parameters included are: turbidity (NTU) in relation to site disturbance; dissolved organic carbon (DOC) (mg/l-1 ppm) in relation to site disturbance and peat deposits; pH, alkalinity (<math>\mu\text{eq l}^{-1}</math>), acid neutralising capacity (<math>\mu\text{eq l}^{-1}</math>) and aluminium (<math>\mu\text{g l}^{-1}</math>) in relation to changes in hydrology, DOC export and acidification; total oxidised nitrogen (nitrate and nitrite) (mg/l-1) and phosphate in relation to nutrient leaching (<math>\mu\text{l}^{-1}</math>); stream height; temperature; and dissolved oxygen concentration (mg/l-1) and biological oxygen demand to indicate health of water. Sampling should occur pre-construction to provide a robust data set and monthly during construction.</li> <li>Regular visual inspections of all watercourses (flow conditions, discolouration, collection of debris, fish in distress/floating) should be presented in a monthly water quality report and advised by an independent suitably qualified ECoW.</li> </ul> | Chapter 11, para 11.9.8 |



| Ref   | Subject                                                   | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | EIAR Reference                     |
|-------|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
|       |                                                           | <ul style="list-style-type: none"> <li>Macroinvertebrate sampling should occur during construction on relevant watercourses, and at least one control site, at a minimum of once a year, preferably in Spring.</li> <li>Electrofishing should be undertaken once a year during construction and at least once a year after. Surveys should be fully quantitative and include at least one control site.</li> </ul>                                                                                                                                                                                     |                                    |
| 11-9  | Construction lighting                                     | <p>Construction lighting should emit light from a broad spectrum of light with high UV components avoided; most invertebrates are sensitive to short wavelengths of light where greatest behavioural change occur. Lighting should additionally face away from watercourse/waterbodies where it is practical to do so.</p> <p>Any lighting used during construction should be directed away from the loch edges and watercourses to prevent the risk of increased predation of fish during the hours of darkness.</p>                                                                                  | Chapter 11, para 11.9.9 to 11.9.10 |
| 11-10 | Piling works mitigations                                  | Any piling operations should adopt a 'soft start' approach to allow adult fish within the immediate vicinity of the cofferdam works area to disperse unharmed. The ACoW should monitor loch areas in the vicinity of the works for any fish kills in relation to works producing underwater noise.                                                                                                                                                                                                                                                                                                     | Chapter 11, para 11.9.11           |
| 11-11 | Riparian planting                                         | Riparian planting would occur along watercourses not effected by inundation levels (in tandem with peat restoration works). This would aid in improving instream habitat quality by providing instream and bankside cover for fish and would aid in preventing water temperature increases, notably in light of future predicted baselines.                                                                                                                                                                                                                                                            | Chapter 11, para 11.9.12           |
| 11-12 | All Labhrach compensation flow                            | Compensation flow would be permanently introduced to the Allt Labhrach, commencing once the Earba reservoir has been filled. The stretch of the Allt Labhrach below the current dam is dry and was considered to be Not Suitable to house any fish species, this would provide additional habitat for fish present.                                                                                                                                                                                                                                                                                    | Chapter 11, para 11.9.13           |
| 11-13 | Allt Loch a' Choire Leamhain compensation flow            | Compensation flow would be maintained to the Allt Loch a' Choire Leamhain at all times. Natural flow regimes would be mimicked by matching compensation flow to typical flow; this would vary monthly. This is considered more natural than typical freshet events used to mimic natural flow regimes.                                                                                                                                                                                                                                                                                                 | Chapter 11, para 11.9.14           |
| 11-14 | Moy Burn spawning habitat improvement                     | Spawning habitat improvement on the Moy burn higher than inundation levels would provide spawning habitat in excess of what is lost, improved accessibility by removing barriers (where possible), and improvement of habitat through riparian planting would improve habitat and spawning habitat quality.                                                                                                                                                                                                                                                                                            | Chapter 11, para 11.9.15           |
| 11-15 | Pitridh aqueduct designed to provide new spawning habitat | The connection of the Allt Choire Pitridh and the Allt a' Choire Chlachair to Loch Earba via a new aqueduct channel will maintain accessibility of the watercourses to spawning tributaries. Arctic charr and brown trout will be able to access the aqueduct channel during periods of high water levels. Additionally, substrate and channel design of the diversion channel will be undertaken in a manner to provide optimal spawning substrate. This will improve on spawning habitat lost to the dam construction and inundation levels; there are no likely predicted impacts on water quality. | Chapter 11, para 11.9.16           |

| Ref   | Subject                                          | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | EIAR Reference           |
|-------|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 11-16 | Creation of marginal spawning habitat            | Spawning habitat creation on the Moy burn higher than inundation levels would provide spawning habitat in excess of what is lost. Due to a risk of introduced spawning gravels being washed out of the watercourses by spate events a short diversion channel could be created running parallel to the existing Moy burn. This would direct a controlled flow of water over optimal spawning gravels. The rate of flow and water depth is set/controlled to provide stable, optimal conditions unlikely to be impacted by spate events. This will also improve accessibility to the upper reaches of the Moy Burn by bypassing barriers (where present). Riparian planting on spawning channel margins would provide stability to marginal areas and provide spawning habitat quality improvements through shading and/or water temperature regulation. Designs would be subject to approval by NatureScot and SEPA.                                                                                                                                  | Chapter 11, para 11.9.17 |
| 11-17 | Terraced pools for spawning                      | The connection of the Allt Choire Pitridh and the Allt a' Choire Chlachair to Loch Earba via a new aqueduct channel will maintain accessibility of the watercourses to spawning tributaries. Arctic charr and brown trout will be able to access the aqueduct channel during all reservoir levels. Additionally, upper sections of the aqueduct (upper straight sections) will be designed in a manner to contain optimal spawning substrate. Due to the nature of the aqueduct holding smaller volumes of water than the Moy burn the risk of substrates washing out during spate events is minimal. This will improve on spawning habitat lost to the dam construction and inundation levels; there are no likely predicted impacts on water quality.                                                                                                                                                                                                                                                                                               | Chapter 11, para 11.9.18 |
| 11-18 | Artificial floating spawning habitat             | Artificial floating spawning nests would be installed into Loch Leamhain. It is proposed that the artificial structures incorporate known spawning requirements of Arctic charr including depth, depth of substrate and type of substrate. Structures would be suspended via buoys at a constant depth to maintain favourable depth. This would be anchored to the loch bed with sufficient chain to allow the structure to rise and recede with the fluctuations in water level during operational periods. Construction of nests would additionally protect fish eggs from destruction, for example, aerial exposure due to water level decrease and/or predation. The specific measures proposed would be novel in design, however, suspended spawning substrate, e.g. Kiddle spawning grounds are recognised as an established mitigation measure. This will additionally provide suitable conditions for macrophytes and macroinvertebrates to establish. It is proposed monitoring would be undertaken (in-situ or ex-situ) to monitor success. | Chapter 11, para 11.9.19 |
| 11-19 | Post construction water quality monitoring       | Water quality monitoring post-construction and during the first years of operation would be conducted in line with MarineScotland guidance <sup>40</sup> as stipulated in Section 11.9.6.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Chapter 11, para 11.9.20 |
| 11-20 | Implementation of Reservoirs (Scotland) Act 2011 | Catastrophic failure of the Loch Leamhain dam would be likely to result in a significant surge of water (volume dependent on generation cycle) effecting the downstream watercourses Allt loch a' Bhealaich Leamhain, the Allt Cam and Loch Pattack. Catastrophic failure is considered extremely unlikely due to the high standard of design, management, and maintenance required under the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Chapter 11, para 11.9.21 |

| Ref                                          | Subject                                              | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EIAR Reference                     |
|----------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
|                                              |                                                      | Reservoirs (Scotland) Act 2011. As required by the Act, routine inspection of the dams would be undertaken. Therefore the significance of this effect is considered to be Not Significant for all species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                    |
| <b>Chapter 12 – Geology, Soils and Water</b> |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                    |
| 12-1                                         | Mitigation by design                                 | Mitigation has been developed as the project design has progressed as described in <b>Chapter 3: Consideration of Alternatives and Design Evolution</b> . The impact assessment and mitigation process has been iterative and therefore mitigation has been developed for the design to be as specific as possible and as an assumed part of the Proposed Development. This has included consideration of areas of deep peat or potential peat instability, watercourse locations, areas of potential flooding, PWS and GWDTE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Chapter 12, para 12.8.1            |
| 12-2                                         | Water management - compensation flows                | A compensation flow discharge to Allt Loch a'Bhealaich Leamhain which mimics the natural outflow from the existing (baseline) catchment would be made (see <b>Chapter 6: Hydrology and Water Management</b> ). This outflow would also be maintained during construction. The rate of discharge will be agreed with SEPA as part of a CAR application and would be informed by a site-specific flow monitoring record. It is expected as part of the CAR application a compensation flow from Loch Earba to the Allt Labhrach watercourse will also be agreed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Chapter 12, para 12.8.3            |
| 12-3                                         | Water management – controls on flows                 | The quality of water shed to and discharged via the Allt Labhrach and Allt Loch a'Bhealaich Leamhain would also be subject to controls agreed with SEPA during construction and operational phases and regulated by a CAR authorisation. Measures which would be used to minimise erosion and generation of suspended sediment, control water quality and the rate of storm water runoff during construction of the Proposed Development are given in the sections that follow.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Chapter 12, para 12.8.4            |
| 12-4                                         | Water management – fisheries interests               | The CAR authorisation(s) would also ensure fisheries interest are not impaired and the contribution of water to habitats downstream of the dams are maintained.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Chapter 12, para 12.8.5            |
| 12-5                                         | Peat Management and Landslide Hazard Risk Assessment | <p>The potential presence of peat within the Site formed a key consideration in the design of the Proposed Development. Informed by the extensive programme of peat probing undertaken across the Site, the design has tried to avoided areas of deeper peat whilst maximising the potential energy yield of the development. Due to the design requirements of a PSH, it has not been possible to avoid all areas of deeper peat.</p> <p>The peat depth probing has been undertaken in order to accurately determine the volume of peat which will be disturbed by the Proposed Development. This data has been used to prepare a site specific PMP (see <b>Appendix 12.2: PMP</b>) which details the peat conditions, the volume of acrotelmic and catotelmic peat which would be disturbed and how this would be safeguarded and re-used onsite.</p> <p>As shown in <b>Appendix 12.1: PLHRA</b> and <b>Appendix 12.2: PMP</b> measures have been proposed to ensure the stability of peat and carbon rich soils and that peat and soils that would be disturbed by</p> | Chapter 12, para 12.8.6 to 12.8.10 |

| Ref  | Subject                      | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EIAR Reference                      |
|------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|      |                              | <p>the Proposed Development can be safeguarded and beneficially re-used on Site. The Policy aims of NPF4, regarding soils and peat, are therefore met.</p> <p>A Design and Geotechnical Risk Register would be compiled prior to any construction commencing on Site to include risks relating to peat instability, as this would be beneficial to both the developer and the Contractor in identifying potential ground stability risks during construction. Good construction practice and methodologies to prevent peat instability within areas that contain peat deposits are identified in <b>Appendix 12.1: PLHRA</b>. These include:</p> <ul style="list-style-type: none"> <li>• measures to ensure a well-maintained drainage system, to include the identification and demarcation of zones of sensitive drainage or hydrology in areas of construction;</li> <li>• minimisation of ‘undercutting’ of peat slopes, but where this is necessary, a more detailed assessment of the area of concern would be required;</li> <li>• careful micro-siting of access track alignments to minimise effects on the prevailing surface and sub-surface hydrology;</li> <li>• raising peat stability awareness for construction staff by incorporating the issue into the site induction (e.g. peat instability indicators and good practice);</li> <li>• introducing a ‘Peat Hazard Emergency Plan’ to provide instructions for site staff in the event of a peat slide or discovery of peat instability indicators;</li> <li>• developing methodologies to ensure that degradation and erosion of exposed peat deposits does not occur as the break-up of the peat top mat has significant implications for the morphology, and thus hydrology, of the peat (e.g. minimisation of off-track plant movements within areas of peat);</li> <li>• developing robust drainage systems that would require minimal maintenance; and</li> <li>• developing drainage systems that would not create areas of concentrated flow or cause over/under-saturation of peat habitats.</li> </ul> <p>Notwithstanding any of the above good construction practices and methodologies, detailed design and construction practices would need to consider the particular ground conditions and the specific works at each location throughout the construction period. An experienced and qualified engineering geologist/geotechnical engineer would be appointed as a supervisor, to provide advice during the setting out, micro-siting and construction phases of the Proposed Development.</p> |                                     |
| 12-6 | Geology and Ground Stability | <p>Given the presence of inferred fault lines on BGS mapping, there is potential for varying rock quality, even at significant depths. To mitigate issues with varying rock quality, which could result in unstable rock faces during underground excavation and tunnelling works, the potential requirement for lining of the tunnels and underground excavations is embedded in the design.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Chapter 12, para 12.8.11 to 12.8.13 |

| Ref   | Subject                        | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EIAR Reference                      |
|-------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|       |                                | Seismic activity in the area could have the potential to destabilise the permanent works however, embedded within the design is the legal requirement that the proposed dams will be designed, constructed and operated in accordance with the Reservoirs (Scotland) Act 2011. Although the impacts on geology have largely been scoped out, during the construction phase substantial excavation, tunnelling and earthworks will be required. A materials balance has been prepared (see <b>Appendix 2.4: Mass Balance Strategy and Borrow Pit Plan</b> ) which shows that excavated materials can be used on site and in the formation of the required dams.                                                                                                                                                                                                                                                                                                                                                                                            |                                     |
| 12-7  | Buffer to Watercourses         | In accordance with consultation responses, a minimum buffer of 10m has been applied to watercourses (shown on OS 1:25,000 mapping) and, with the exception of the proposed watercourse crossings, where practical any proposed construction activities or infrastructure has been located outside of this buffer. The buffer included the existing Loch Leamhain and Loch Earba but excludes the inundation area, which wouldn't be present until the Proposed Development is operational.<br>The layout of the access tracks was designed to minimise the requirement for watercourse crossings. Where possible existing tracks have been used and incorporated into the Proposed Development.                                                                                                                                                                                                                                                                                                                                                           | Chapter 12, para 12.8.14 to 12.8.15 |
| 12-8  | Groundwater Dependent Habitats | It has been shown that areas identified as being potentially moderately groundwater dependent are likely to be sustained by incident rainfall and local surface water runoff rather than by groundwater. Accordingly, the buffers proposed in SEPAs GWDTE guidance need not apply. Measures, such as permeable access tracks and regular cross track drains, have been proposed to safeguard existing water flow paths and maintain existing water quality. It is considered therefore that the majority of water dependent habitats identified by the NVC mapping can be sustained. This would be confirmed, in accordance with good practice, by the Ecological Clerk of Works (ECoW) at the time of the construction who would ensure existing surface water flow paths and water flushes are maintained.<br>There are some GWDTE habitats that will be lost as a consequence of the Proposed Development. These are clearly identified in <b>Appendix 12.4: GWDTE Assessment</b> , and compensation measures presented in <b>Chapter 8: Ecology</b> . | Chapter 12, para 12.8.16 to 12.8.18 |
| 12-9  | Good Practice Measures         | As a principle, preventing the release of any pollution or sediment is preferable to dealing with the consequences of any release. There are several general measures which cover all effects assessed within this Chapter, details of which are given below. The Proposed Development will be undertaken in accordance with good practice guidance, including UK and Scottish guidance on good practice for construction projects detailed in <b>Section 12.4</b> of Chapter 12.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Chapter 12, para 12.8.19 to 12.8.20 |
| 12-10 | Implementation of CEMD         | A contractual management requirement of the successful Principal Contractor would be the development and implementation of a comprehensive and site-specific CEMD. This document                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Chapter 12, para 12.8.21 to 12.8.24 |

| Ref   | Subject                                   | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | EIAR Reference                      |
|-------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|       |                                           | <p>would detail how the successful Principal Contractor would manage the works in accordance with all commitments and mitigation detailed in the EIA Report, statutory consents and authorisations, and industry best practise and guidance, including pollution prevention guidance.</p> <p>The CEMD will outline measures to ensure that the works minimise the risk of an adverse impact to peat, groundwater, surface water and water dependent habitats.</p> <p>It is expected that the following will be included in the CEMD and would ensure the works are undertaken in accordance with good practice guidance, which includes, but is not limited to the following:</p> <ul style="list-style-type: none"> <li>• any above ground on-site fuel and chemical storage would be bunded;</li> <li>• emergency spill response kits would be maintained during the construction works;</li> <li>• a vehicle management system would be put in place wherever possible to reduce the potential conflicts between vehicles and thereby reduce the risk of collision;</li> <li>• a speed limit would be used to reduce the likelihood and significance of any collisions;</li> <li>• drip trays will be placed under vehicles which could potentially leak fuel/oils;</li> <li>• any water contaminated with silt or chemicals will not be discharged directly or indirectly to a watercourse without prior treatment; and</li> <li>• foul water will be collected for offsite disposal at an appropriately licensed facility.</li> </ul> <p>A wet weather protocol would be developed. This would detail the procedures to be adopted by all staff during periods of heavy rainfall. Tool box talks would be given to engineering/construction/supervising personnel. Roles would be assigned, and the inspection and maintenance regimes of sediment and runoff control measures would be adopted during these periods. In extreme cases, the above protocol would dictate that work onsite may have to be temporarily suspended until weather/ground conditions allow.</p> |                                     |
| 12-11 | Environmental / Ecological Clerk of Works | <p>To ensure all reasonable precautions are taken to avoid negative effects on the soils and water environment, a suitably qualified Environmental / Ecological Clerk of Works (ECoW) will be appointed prior to the commencement of construction to advise the Applicant and the Principal Contractor on all ecological and hydrological matters. The ECoW will be required to be present onsite during the construction phase and will carry out monitoring of works and briefings with regards to any ecological and hydrological sensitivities on the site to the relevant staff of the Principal Contractor and subcontractors.</p> <p>With respect to the water environment, the ECoW would also have responsibility to ensure water flow paths and quality to water dependant habitats are sustained during all phases of the Proposed Development.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Chapter 12, para 12.8.25 to 12.8.26 |
| 12-12 | Water Quality Monitoring                  | <p>Water quality monitoring before and during the construction phase would be undertaken within the surface water catchments that drain from the Site to ensure that none of the tributaries of the main</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Chapter 12, para 12.8.27 to 12.8.30 |



| Ref   | Subject        | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | EIAR Reference                      |
|-------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|       |                | <p>channels are carrying pollutants or suspended solids. Monitoring would be carried out at a specified frequency (depending upon the construction phase) on these catchments.</p> <p>Monitoring would continue throughout the construction phase and immediately post construction. Monitoring would be used to allow a rapid response to any pollution incident as well as assess the impact of good practice or remedial measures. Monitoring frequency would increase during the construction phase if remedial measures to improve water quality were implemented. Water quality monitoring plans would be developed during detailed design (SEPA, THC, LFT and LDSFB would be consulted on the plan) and would be contained within the final CEMD.</p> <p>The performance of the good practice measures would be kept under constant review by the water monitoring schedule, based on a comparison of data taken during construction with a baseline data set, sampled prior to the construction period.</p> <p>The water quality programme would also be used to confirm there is no impact to PWS sources, Ben Alder and Aonach Beag SSSI and SAC and Ben Alder SPA.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |
| 12-13 | Pollution Risk | <p>Good practice measures in relation to pollution prevention would include the following:</p> <ul style="list-style-type: none"> <li>• refuelling would take place at least 50 m from watercourses;</li> <li>• foul water generated onsite would be managed in accordance with PPG4;</li> <li>• areas would be designated for production of concrete or washout of vehicles which are a minimum distance of 50 m from a watercourse;</li> <li>• washout water would also be stored in the washout area before being treated and disposed of, or re-used in concrete production;</li> <li>• if any water is contaminated with silt or chemicals, runoff would not enter a watercourse directly or indirectly prior to treatment;</li> <li>• water would be prevented as far as possible, from entering excavations such as trenches and foundations;</li> <li>• procedures would be adhered to for storage of fuels and other potentially contaminative materials in line with the Controlled Activity Regulations, to minimise the potential for accidental spillage; and</li> <li>• a plan for dealing with spillage incidents would be designed prior to construction, and this would be adhered to should any incident occur, reducing the effect as far as practicable. This would be included in the final CEMD for the Proposed Development.</li> </ul> <p>Over the longer term, it would be expected that inorganic and organic sediment derived from water transfer between the lochs, and from natural surface water runoff from the catchment to the lochs will accumulate within Loch Leamhain and Loch Earba. The accumulation of sediment could increasingly influence, and potentially reduce, the quality of water within the lochs through</p> | Chapter 12, para 12.8.31 to 12.8.33 |



| Ref   | Subject                                | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | EIAR Reference                      |
|-------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|       |                                        | <p>mobilisation of fine sediment into the water column increasing turbidity, nutrient enrichment, and oxygen depletion.</p> <p>Sediment build up would also be monitored and when necessary sediment would be removed for appropriate disposal in accordance with waste legislation, although this is likely to be a very infrequent requirement.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                     |
| 12-14 | Water Supply and Foul Water Management | <p>During the construction phase water for the site welfare facilities will either be brought to site by tanker or be provided by a private water supply abstraction, with prior approval from THC (and if required SEPA).</p> <p>During operation, it is expected that rainwater harvesting will be used for grey water requirements and potable water will be brought to Site or taken from a private water source yet to be determined, but which would be agreed with SEPA and THC prior to implementation.</p> <p>During the construction phase all foul water generated from the welfare facilities would be collected and either removed from Site for treatment and disposal at an appropriately licensed facility or treated on site using a package waste water treatment plant subject to agreement with SEPA as required by CAR.</p> <p>During the operational phase, subject to authorisation by SEPA as required by the CAR, foul water would either be disposed a package treatment plant, or to a septic tank or stored in a sealed tank prior to removal from Site for treatment and disposal at an appropriately licensed facility.</p> <p>It is anticipated that the final foul drainage management proposals would be agreed with consultees as part of the final CEMD.</p> | Chapter 12, para 12.8.34 to 12.8.38 |
| 12-15 | Erosion and Sedimentation              | <p>Good practice measures for the management of erosion and sedimentation would include the following:</p> <ul style="list-style-type: none"> <li>• all stockpiled materials would be located out with a 50m buffer from watercourses wherever possible and not within 10m of a watercourse;</li> <li>• water would be prevented as far as possible, from entering excavations such as trenches and foundations through the use of appropriate cut-off drainage;</li> <li>• where the above is not possible, water would pass through silt/sediment traps to remove silt prior to discharge into the surrounding drainage system;</li> <li>• clean and dirty water onsite would be separated, and dirty water would be filtered before entering the water environment;</li> <li>• silt fences would be deployed as required to reduce sediment transport;</li> <li>• the amount of ground exposed, and time period during which it is exposed, would be kept to a minimum;</li> <li>• silt/sediment traps, single size aggregate, geotextiles or straw bales would be used to filter any coarse material and prevent increased levels of sediment. Further to this, activities involving</li> </ul>                                                                                             | Chapter 12, para 12.8.39            |

| Ref   | Subject            | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EIAR Reference                      |
|-------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|       |                    | <p>the movement or use of fine sediment would avoid periods of heavy rainfall where possible; and</p> <ul style="list-style-type: none"> <li>the ECoW and the Principal Contractor would carry out regular visual inspections of watercourses to check for suspended solids in watercourses downstream of work areas.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                     |
| 12-16 | Fluvial Flood Risk | <p>Construction and permanent site workers may be sensitive to flood risk at the development. During construction a wet weather working protocol would be used. This would restrict working in potential flood prone areas (for example in the inundation area or adjacent to watercourses), reducing the risk to workers, machinery, and downstream property.</p> <p>An early activity would be to create the Pitridh and Shuas Aqueducts which would divert waters away for the proposed construction compounds at Shuas Dam, and thus would mitigate the flood risk shown on existing SEPA floodplain mapping to the southwest of Loch Earba. To facilitate construction of the dams, the water level in Loch Earba will also be actively managed, further reducing the flood risk.</p> <p>The wet weather working protocol would also specify areas, which are not prone to flood risk, where construction equipment would be moved to should extreme rainfall or storm warnings be issued by the Met Office and/or SEPA.</p> <p>It is proposed to adopt Sustainable Drainage Systems (SuDS) as part of the Proposed Development. SuDS techniques aim to mimic pre-development runoff conditions and balance or throttle flows to the rate of runoff that might have been experienced prior to development. Good practice in relation to the management of surface water runoff rates and volumes and potential for localised fluvial flood risk would include the following:</p> <ul style="list-style-type: none"> <li>drainage systems would be designed to ensure that any sediment, pollutants or foreign materials which may cause blockages are removed before water is discharged into a watercourse;</li> <li>onsite drainage would be subject to routine checks to ensure that there is no build-up of sediment or foreign materials which may reduce the efficiency of the original drainage design causing localised flooding;</li> <li>drainage measures would attenuate runoff rates and reduce runoff volumes to ensure minimal effect upon flood risk; and</li> <li>where necessary, check dams would be used within cable trenches in order to prevent trenches developing into preferential flow pathways.</li> </ul> <p>Further information on drainage designs would be provided in the final CEMD.</p> <p>Flood risk during the operational phase of the development would be mitigated, managed and regulated by the CAR licence and Reservoirs Act. The CAR authorisation will detail permitted rates and volume of discharge and will be cognisant of potential in-combination effects on flood risk as a</p> | Chapter 12, para 12.8.40 to 12.8.47 |

| Ref   | Subject                | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | EIAR Reference                      |
|-------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|       |                        | <p>result of operation of other PSH schemes in the Loch Laggan catchment (refer to <b>Chapter 6: Hydrology and Water Management</b>).</p> <p>The probability of flood risk being increased as a consequence of the development is extremely low due to the high standard of design, management, and maintenance required under the Reservoirs Act. As required by the Act, routine inspection of the dams would be undertaken.</p> <p>The freeboard incorporated in the design of the enlarged lochs mitigates the potential for wave action on the embankment crests and potential overtopping by waves, by ensuring water levels are below the crest level. Further peninsulas, constructed from site won rock, are proposed in Loch Earba to mitigate the potential effects of wave action.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |
| 12-17 | Thermal Stratification | <p>During operation, although highly unlikely, should there be extended periods of time that the system does not operate, this may provide time for heat to be transferred from the bedrock and in turn, could be then transferred to water if contained in the tunnels (again this is unlikely). Nonetheless, this temperature range is considered to be within the natural fluctuation of surface water in lochs and thus not discernible.</p> <p>The tunnels would be constructed using a boring machine or by drill and blast techniques and will be lined as each tunnel is progressed. This will minimise the potential for groundwater to enter the tunnels. Once constructed, the tunnel lining and the circular cross-sectional shape of the tunnels will allow any groundwater to flow around them. Further review of baseline conditions has confirmed the bedrock geology has little potential to store or allow movement of large quantities of groundwater.</p> <p>The portals for the tunnels are likely to be constructed by excavation into the bedrock, and as such, it is not envisaged that sheet piling will be required. Again, little groundwater flow is expected as a consequence of low permeability of the superficial and bedrock deposits. The SuDS measures detailed above would be used to attenuate any limited groundwater ingress before it is discharged to surrounding ground. No direct discharge would be made to a watercourse.</p> | Chapter 12, para 12.8.48 to 12.8.50 |
| 12-18 | Risk of Algal Blooms   | <p>Standing waterbodies such as lochs and reservoirs follow yearly cycles of stratification when a temperature gradient is created due to high temperatures, also freezing conditions can cause stratifications.</p> <p>When high volumes of water are discharged into a standing waterbody during stratification, especially when the frequency of pumping / discharge cycles is high, this can alter the stability of the water column, especially when water enters at higher temperature and velocity that can mobilise nutrients from existing bed sediments. These conditions increase water turbulence, promoting the mobilisation of nutrients and making them more available for phytoplankton, thus increasing the potential for an algal bloom to occur. However, it is predicted that the risk of this occurring is low</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Chapter 12, para 12.8.51 to 12.8.52 |

| Ref   | Subject                         | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EIAR Reference                      |
|-------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|       |                                 | because the temperature of water discharged between Loch Leamhain and Loch Earba is not anticipated to be significantly different.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |
| 12-19 | Permanent Watercourse Crossings | <p>Good practice in relation to new water crossings involves the following:</p> <ul style="list-style-type: none"> <li>the design of the watercourse crossings would be agreed with SEPA prior to construction and be regulated in accordance with CAR;</li> <li>the appropriate crossing type would be identified from SEPA's good practice guidance and would take into account any ecological and hydrological constraints; and</li> <li>the crossing would be sized and designed so as to minimise effect upon flood risk (sized to accommodate at least the 200 year flow plus an allowance for the potential effects of climate change (currently 41%).</li> </ul> <p>No works are proposed to existing watercourse crossings associated with existing access tracks. Should it become apparent, as part of the detailed design stage of the project, that an existing crossing needs to be replaced, then the principles identified above for new crossings would be used.</p> <p>The location of proposed permanent watercourse crossings are shown in <b>Figure 12.1</b>. One existing crossing is to be upgraded and 23 new crossings are required to provide access to all elements of the Proposed Development. A schedule of watercourse crossings is shown as <b>Appendix 12.3: Watercourse Crossings</b>.</p>                                                            | Chapter 12, para 12.8.53 to 12.8.55 |
| 12-20 | Dam Construction                | <p>The following measures are proposed to mitigate the effects of dam construction:</p> <ul style="list-style-type: none"> <li>as part of the detailed design stage of the project, and to reflect further site investigation that would be undertaken at that stage, it will be confirmed in the CEMD where proposed dam foundations have potential to intercept larger quantities of water and where piling and/or coffer dams will be specified to prevent significant groundwater inflows and therefore the need to manage significant amounts of water;</li> <li>where excavations for foundations encounter localised and limited quantities of groundwater or become flooded due to surface water runoff or heavy rainfall, appropriate treatment of dewatering would be instigated under direction of the site ECoW;</li> <li>no dewatering discharge would be permitted directly adjacent to watercourses;</li> <li>unless directed otherwise by the site ECoW, dewatering discharge would drain across buffer areas of vegetation of at least 20m width, which would provide for natural attenuation and dispersal of the flow and removal of silt;</li> <li>where no suitable vegetation is available for natural treatment of dewatering, the discharge would be passed through on-site settling tanks/lagoons prior to discharge by soakaway or to watercourse;</li> </ul> | Chapter 12, para 12.8.56            |

| Ref   | Subject                                                      | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EIAR Reference                      |
|-------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|       |                                                              | <ul style="list-style-type: none"> <li>the requirement for dewatering would be minimised in all locations by timely and efficient excavation of the foundation void and subsequent concrete pouring and backfilling;</li> <li>all procedures for dewatering would be agreed by the Principal Contractor with SEPA, THC and NatureScot, and detailed in the CEMD; and</li> <li>the Principal Contractor would develop a method statement to address the transport, transfer, handling and pouring of liquid concrete at foundation sites.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                     |
| 12-21 | Concrete Batching, Transport and Pouring                     | <p>In relation to works involving concrete batching, transport and pouring, the following mitigation would be adopted:</p> <ul style="list-style-type: none"> <li>where concrete transfers are required, measures would be adopted at the point of concrete transfer to prevent accidental spillage of liquid concrete and no transfers would be undertaken in proximity to watercourses or areas of standing water;</li> <li>there would be no wash-out of concrete carrying vehicles (except the concrete chute) with wash-out undertaken at the nearest compounds where suitably bunded/protected facilities would be provided. Chutes would be washed out to a suitable container, allowed to settle and disposed at suitably licensed facilities or reused in concrete production;</li> <li>excess concrete or wash-out liquid would not be discharged to drains or watercourses. Drainage from washout facilities would be collected and treated or removed to an appropriate treatment point/licensed disposal site; and</li> <li>vehicles and plant working at foundations would be confined to the area required for safe working only to prevent compaction, rutting and habitat damage to adjacent areas of land.</li> </ul> | Chapter 12, para 12.8.57            |
| 12-22 | Permanent Access Track Construction                          | <p>In relation to permanent access track construction the following principles would be adopted:</p> <ul style="list-style-type: none"> <li>tracks would be completed with permeable construction that will allow infiltration of rainwater and lateral movement of surface water flows;</li> <li>where required have frequent cross drains to maintain existing surface water flow paths, the location of drains would be determined in conjunction with the ECoW; and</li> <li>they would be constructed with rock and aggregate won onsite and therefore with the same geochemical properties as existing rock and tracks at Site.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Chapter 12, para 12.8.58            |
| 12-23 | Water Abstraction (Dust Suppression and Concrete Production) | <p>Any water abstraction would only be made with authorisation from SEPA and in accordance with the CAR. Good practice that would be followed in addition to the CAR regulations includes:</p> <ul style="list-style-type: none"> <li>water use would be planned so as to minimise abstraction volumes;</li> <li>water would be re-used where possible; and</li> <li>abstraction volumes would be recorded.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Chapter 12, para 12.8.59            |
| 12-24 | Mitigation During Construction                               | As there are no predicted likely significant effects under the terms of the EIA regulations during the construction phase of the Proposed Development other than the committed good practice measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Chapter 12, para 12.10.1 to 12.10.2 |

| Ref                                       | Subject                     | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | EIAR Reference           |
|-------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
|                                           |                             | no specific mitigation is required. Monitoring has been proposed to confirm that there are no significant effects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |
| 12-25                                     | Mitigation During Operation | As there are no predicted likely significant effects under the terms of the EIA regulations during the operational phase of the Proposed Development other than the committed good practice measures no specific mitigation is required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Chapter 12, para 12.10.3 |
| <b>Chapter 14 – Land Use</b>              |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |
| 14-1                                      | Minimising land take        | <p>The following design principles have been applied minimise the effect of the Proposed Development on land use:</p> <ul style="list-style-type: none"> <li>• The footprint of the Proposed Development has been minimised as far as is compatible with its proposed function;</li> <li>• Wherever practicable, infrastructure would be underground;</li> <li>• Where infrastructure is required to be above ground, this would be designed to minimise the land take and impact on the landscape as far as practicable.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Chapter 14, para 4.7.2   |
| <b>Chapter 15 – Recreation and Access</b> |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |
| 15-1                                      | Design principles           | <p>The following design principles have been applied minimise the effect of the Proposed Development on recreation and access:</p> <ul style="list-style-type: none"> <li>• Where any existing recreational access would be restricted during either construction or operation of the Proposed Development, alternative access arrangements would be provided in advance of any such restriction;</li> <li>• Construction of the Proposed Development would comply with the requirements of the Construction (Design and Management) Regulations 2017. These regulations require the Developer and Contractor to establish and operate a safety management system encompassing risk assessment, design measures and management instructions to ensure the safety of construction workers and the public;</li> <li>• Wherever practicable, infrastructure would be underground; and</li> <li>• Where infrastructure is required to be above ground, this would be designed to minimise the impact on the landscape as far as practicable.</li> </ul> | Chapter 15, para 15.7.2  |

| Ref                                      | Subject                                               | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | EIAR Reference                                                         |
|------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| 15-2                                     | Access management plan                                | <p>Mitigation for recreation and access is detailed in the <b>Appendix 15.1 - Draft Access Management Plan</b>, which has been prepared in consultation with the Highland Council's Access Officers. The Draft Access Management Plan (AMP) demonstrates the Applicant's proposals and commitment to maintain and where possible improve access through the Development Site during the construction and operation of the Proposed Development. A final AMP will be prepared post consent and agreed with the Highland Council and all other relevant stakeholders ahead of the commencement of any pre-construction works.</p> <p>The Draft Access Management Plan (AMP) provides a plan to:</p> <ul style="list-style-type: none"> <li>• provide site tracks and paths to maintain public access routes during construction and operation of the Proposed Development;</li> <li>• provide safe public access at all stages of the development; and</li> <li>• enhance public outdoor access in the long-term.</li> </ul> | Chapter 15, para 15.9 and Appendix 15.1 – Draft Access Management Plan |
| <b>Chapter 16 – Cultural Heritage</b>    |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                        |
| 16-1                                     | Avoiding archaeology                                  | Wherever possible, the infrastructure comprising the Proposed Development has been designed and located to avoid any archaeological sites. This is particularly the case for the sheep enclosure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Chapter 16, para 16.7.1                                                |
| 16-2                                     | Mitigation for Site 2 (sheep enclosure and shielings) | Mitigation is recommended for one site, Site 2 (sheep enclosure and shielings), to reduce the potential for accidental damage during the construction phase. It is recommended that the location of identified archaeological features be taken into account in the siting of the compound and that these features be clearly marked off in exclusion zones to avoid accidental damage during the construction phase of the development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Chapter 16, para 16.9.1                                                |
| 16-3                                     | Mitigation for Site 1 (shielings and cairn)           | The magnitude of direct impact on Site 1 (shielings and cairn) has been predicted to be medium. This is an unavoidable impact and mitigation in the form of further archaeological recording may be advisable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Chapter 16, para 16.9.2                                                |
| <b>Chapter 17 – Transport and Access</b> |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                        |
| 17-1                                     | New site access junction                              | The Site access junction has been designed to the appropriate standards to operate in a safe and efficient manner throughout the design life of the project. It will be maintained to ensure that road safety at this location is ensured.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Chapter 17, para 17.7.1                                                |
| 17-2                                     | Residential camp                                      | To reduce traffic volumes during the construction phase, a residential camp will be established on the Site to accommodate staff engaged in construction activities at the Site. Having staff based at the Site will help reduce the number of trips on the road network.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Chapter 17, para 17.7.2                                                |
| 17-3                                     | Construction Traffic Management Plan                  | The following measures would be implemented through a Construction Traffic Management Plan (CTMP) during the construction phase. The CTMP would be agreed with THC prior to construction works commencing:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Chapter 17, para 17.9.1                                                |



| Ref  | Subject                                                               | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EIAR Reference                    |
|------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
|      |                                                                       | <ul style="list-style-type: none"> <li>Where possible the detailed design process would minimise the volume of material to be imported to Site to help reduce HGV numbers;</li> <li>A Site worker transport and travel arrangement plan, including transport modes to and from the work Site (including pick up and drop off times);</li> <li>All materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillage on public roads;</li> <li>Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway;</li> <li>Wheel cleaning facilities may be established at the Site entrance, depending on the views of Transport Scotland;</li> <li>Appropriate traffic management measures would be put in place on the A86 to avoid conflict with general traffic, subject to the agreement of the Transport Scotland. Typical measures would include HGV turning and crossing signs and / or banksmen at the Site access and warning signs;</li> <li>Provide construction updates on the project website and or a newsletter to be distributed to residents within an agreed distance of the Site;</li> <li>Adoption of a voluntary speed limit of 15 mph for all construction vehicles travelling through local villages and towns;</li> <li>All drivers would be required to attend an induction to include: <ul style="list-style-type: none"> <li>A tool box talk safety briefing;</li> <li>The need for appropriate care and speed control;</li> <li>A briefing on driver speed reduction agreements (to slow Site traffic at sensitive locations such as Kingussie, Newtonmore and Dalwhinnie); and</li> <li>Identification of the required access routes and the controls to ensure no departure from these routes.</li> </ul> </li> </ul> |                                   |
| 17-4 | Repair of damage to the A86 in close proximity to the access junction | Transport Scotland may require an agreement to cover the cost of abnormal wear and tear on the A86 in close proximity to the access junction. Video footage of the pre-construction phase condition of the construction vehicles route would be recorded to provide a baseline of the state of the road prior to any construction work commencing. This baseline would inform any change in the road condition during the construction stage of the Proposed Development. Any necessary repairs would be coordinated with the Roads Authority. Any damage caused by traffic associated with the Proposed Development, during the construction period that would be hazardous to public traffic, would be repaired immediately.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Chapter 17, para 17.9.2 to 17.9.4 |

| Ref  | Subject                        | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | EIAR Reference                      |
|------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|      |                                | Any damage to road infrastructure caused directly by construction traffic would be made good, and street furniture that is removed on a temporary basis would be fully reinstated.<br>There would be a regular road edge review and any debris and mud would be removed from the public carriageway to keep the road clean and safe during the initial months of construction activity, until the construction junction and immediate access track works are complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |
| 17-5 | A86 Improvement Works          | The proposed development will increase traffic flows on the A86, which is narrow in sections over the construction period. To assist with traffic management, it is proposed to offer Transport Scotland financial support to introduce improved measures on the route. These can take the form of enhanced signage, clearance of vegetation / slopes to improve forward visibility and enhanced laybys / passing areas to ease access. It is proposed to offer a financial contribution to a fixed amount to Transport Scotland. This would allow the authority to undertake any planned works early. This goodwill gesture will assist in improving the road network for the benefit of all road users prior to works commencing on Site and will allow Transport Scotland to bring forward its own considered works.                                                                                                                                                                                                                                                                                              | Chapter 17, para 17.9.5 to 17.9.7   |
| 17-6 | Abnormal Load Mitigation Works | An abnormal load Route Survey Report (RSR) highlights a number of constraint points which have been assessed within the report using swept path assessment software. The locations of the constraint points and the swept path drawings are included in <b>Appendix 17.1: Transport Assessment</b> . The RSR identifies key points and issues associated with the route that require mitigation works. These works are to be agreed with Transport Scotland and other relevant stakeholders. The abnormal loads mitigation works can be designed to be temporary in nature to enable the restoration to their original condition, if required by Transport Scotland.                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Chapter 17, para 17.9.8 to 17.9.10  |
| 17-7 | Abnormal Load Management Plan  | Before the abnormal loads traverse the route, the following tasks would be undertaken to ensure load and road user safety: <ul style="list-style-type: none"> <li>• Ensure any vegetation which may foul the loads is trimmed back to allow passage;</li> <li>• Confirm there are no roadworks or closures that could affect the passage of the loads;</li> <li>• Check no new or diverted underground services on the proposed route are at risk from the abnormal loads; and</li> <li>• Confirm the police are satisfied with the proposed movement strategy.</li> </ul> There are a number of traffic management measures that could help reduce the effect of abnormal load convoys.<br>All abnormal load deliveries would be undertaken at appropriate times (to be discussed and agreed with the relevant roads authorities and police) with the aim to minimise the effect on the local road network. It is likely that the abnormal load convoys would travel in the early morning periods, before peak times while general construction traffic would generally avoid the morning and evening peak periods. | Chapter 17, para 17.9.11 to 17.9.18 |

| Ref  | Subject                        | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | EIAR Reference           |
|------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
|      |                                | <p>The majority of potential conflicts between construction traffic and other road users will occur with abnormal load traffic. General construction traffic is not likely to come into conflict with other road users as the vehicles are smaller and road users are generally more accustomed to them. Potential conflicts between the abnormal loads and other road users can occur at a variety of locations and circumstances. The main potential conflicts are likely to occur:</p> <ul style="list-style-type: none"> <li>• On the A86 and A82 where the loads may straddle the centre line, where fast moving oncoming traffic may be encountered, etc.;</li> <li>• Where loads turn from the A82 onto the A86;</li> <li>• Where traffic turns at a road junction, requiring other traffic to be restrained on other approach arms; and</li> <li>• In locations where high speeds of general traffic are predicted.</li> </ul> <p>Advance warning signs would be installed on the approaches to the affected road network. Information signage could be installed to help advise drivers of dates and times of movements. The location and numbers of signs would be agreed post consent and would form part of the wider Traffic Management Proposal for the project.</p> <p>The Abnormal Load Transport Management Plan would also include:</p> <ul style="list-style-type: none"> <li>• Procedures for liaising with the emergency services to ensure that police, fire and ambulance vehicles are not impeded by the loads. This is normally undertaken by informing the emergency services of delivery times and dates and agreeing communication protocols and lay over areas to allow overtaking;</li> <li>• A diary of proposed delivery movements to liaise with the communities to avoid key dates such as local events;</li> <li>• A protocol for working with local businesses to ensure the construction traffic does not interfere with deliveries or normal business traffic; and</li> <li>• Proposals to establish a construction liaison committee to ensure the smooth management of the project / public interface with the applicant, the construction contractors, the local community, and if appropriate, the police forming the committee. This committee would form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.</li> </ul> |                          |
| 17-8 | Construction Staff Travel Plan | <p>17.9.19 A Travel Plan for construction staff will be developed to reduce dependency on single occupancy car trips. The Travel Plan will be a contractual requirement for contractors working on the Site and would include the following elements:</p> <ul style="list-style-type: none"> <li>• The provision of staff minibus / coach links from railway stations at Roy Bridge, Dalwhinnie and Newtonmore. Links would also extend to Aviemore and Spean Bridge town centres;</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Chapter 17, para 17.9.19 |

| Ref                                     | Subject                                             | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EIAR Reference                     |
|-----------------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
|                                         |                                                     | <ul style="list-style-type: none"> <li>The use of limited parking spaces at the residential camp. The level of parking will be agreed with Transport Scotland, prior to works commencing;</li> <li>The encouragement for car sharing amongst staff and visitors;</li> <li>The provision of an online shopping / Amazon delivery locker in Aviemore and provision of a dedicated postal link from this to the residential camp to reduce single delivery vehicle trips;</li> <li>Provision of emergency taxi links from the Site to Aviemore and Inverness in the event of family emergency requirements;</li> <li>Subsidised rail tickets for use to get from Inverness / Lochaber and the Central Belt to the minibus pick up areas;</li> <li>Reviewing shift changes to ensure that large numbers of staff movements occur outside peak network times to reduce the impact on school trips etc; and</li> <li>The provision of a staff travel co-ordinator to assist in organising the travel links, reviewing their operation and monitoring compliance with the contractual requirements.</li> </ul> |                                    |
| 17-9                                    | Public Information                                  | 17.9.20 The Applicant would also ensure information was distributed through its communication team via the project website, local newsletters and social media.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Chapter 17, para 17.9.20           |
| 17-10                                   | Cumulative Measures                                 | 17.9.21 Shift changes and abnormal load deliveries could be co-ordinated with other large construction schemes with significant traffic generation in the study area, if required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Chapter 17, para 17.9.21           |
| <b>Chapter 18 – Noise and Vibration</b> |                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                    |
| 18-1                                    | Powerhouse in shaft reduces construction programme  | The topography at the Site allows the opportunity for a shaft powerhouse rather than a cavern, with advantages for the cost of construction and minimising the build programme (and therefore length of potential construction noise impacts resulting).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Chapter 18, para 18.7.1            |
| 18-2                                    | Mass balance within site minimises traffic          | The location and layout of the scheme offers the opportunity to win and use materials within the Site, which will minimise off-site transport on the road network and noise resulting.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Chapter 18, para 18.7.2            |
| 18-3                                    | Sub-surface powerhouse mitigates noise transmission | Locating the majority of the operational power station underground / within a building (powerhouse).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Chapter 18, para 18.7.3            |
| 18-4                                    | Construction Noise and Vibration                    | Construction noise and vibration would primarily be managed through a CNVMP, which would be formally agreed with THC prior to construction work commencing. Once clearer detail of the construction plant and processes are known, the appointed main contractor would develop and submit, for approval by THC, the project specific CNVMP which would detail how noise and vibration emissions would be managed during construction works. The plan would detail control measures, such as hours of work, mitigation strategy, monitoring proposals and protocol for receiving and dealing with any complaints.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Chapter 18, paras 18.9.1 to 18.9.3 |

| Ref  | Subject                             | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EIAR Reference                      |
|------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|      |                                     | As a general principle, consideration would be given in the CNVMP for adopting the 'best practicable means' to noise and vibration control, with particular consideration given to the guidance provided in Section 8 (Control of Noise) of BS5228-1, for the purpose of minimising noise emission. For information, an outline of the typical detail provided in the CNVMP, is included in <b>Appendix 18-4</b> to this chapter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     |
| 18-5 | Blasting Overpressure and Vibration | <ul style="list-style-type: none"> <li>The air overpressure and vibration effects of blasting can be reduced through good blast design, although this may come at the expense of higher drilling and detonator costs. Smaller, more frequent blasts lead to smaller but more frequent effects, and the balance between these factors will need to be discussed with THC.</li> <li>Methods employed to control air overpressure and vibration from blasting operations will need to be agreed with THC prior to any blasting, as well as the frequency of blasting and a 90% confidence limit for blast PPV values at NSRs. The PPV blasting vibration limit should follow the guidance provided within BS 6472-2:2008 of between 6.0 and 10.0mm/s during the daytime and 2.0mm/s at night.</li> <li>Above ground blasting should not be undertaken in the early morning, late afternoon or evening. The local community will be given advance notice prior to any blasting.</li> <li>An air overpressure limit at NSRs should follow the guidance provided within BS 6472-2:2008 (120 - 150 dB(lin)) and be agreed with THC.</li> <li>It is recommended that a blast monitoring scheme for air overpressure and vibration be implemented. Any scheme should include details on the location of monitoring points and vibration sensitive properties, and the equipment to be used. This should include a series of representative initial trial blasts at the start of the blasting to accurately identify allowable MICs to prevent exceedance of the identified limits at nearby receptors.</li> <li>All blasts at the Site should be monitored and records maintained so that the historical peak particle velocity from blasts can be produced as required.</li> <li>A close working relationship between the construction / blasting operator and the local planning authority will be required for the exchange of information regarding blasting events.</li> <li>All blasting should be carried out using BPM where available, to ensure that the resultant noise, vibration and air overpressure are minimised in accordance with current British Standards and guidelines.</li> <li>Blast designs should be developed with the aid of regression lines determined from a logarithmic plot of Peak Particle Velocity against scaled distances. The regression lines should be regularly updated using the blasting monitoring information. The regression lines should be made available for inspection upon request.</li> <li>Fly rock requirements will be controlled through Health and Safety legislation.</li> </ul> | Chapter 18, paras 18.9.4 to 18.9.13 |

| Ref                                            | Subject                         | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | EIAR Reference                       |
|------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| 18-6                                           | Operational Noise and Vibration | <p>The best available operational methods should be employed at all times, having regard to the principles of BPM to minimise noise and vibration from the development.</p> <p>Control measures to prevent underground plant noise from exceeding appropriate operational noise limits will be finalised during detailed design. These control techniques may include measures such as orientation away from NSRs, vent attenuators, acoustic lining within the vent shaft, and acoustic louvres at intake and extract terminals.</p> <p>If required, mitigation for LFN and groundborne noise and vibration could include vibration isolation, mufflers, attenuators, etc. and will be considered during the detailed design stage.</p> <p>As the design has not been finalise items have not been included in the assessment, if they block line of sight from the main substation or other sound sources to the receptors then the specific sound level would be reduced by around 10dB. Distance attenuation noting the site layout and context would also be significantly beneficial.</p> | Chapter 18, paras 18.9.14 to 18.9.17 |
| 18-7                                           | Traffic Noise                   | <p>Traffic during the construction and operation of the Proposed Development would utilise existing public roads and tracks, where possible.</p> <p>Furthermore, the creation of a temporary haul road to connect the lower reservoir works area to the upper reservoir and dam, provides an opportunity to supplement rock quarried within the upper reservoir, with suitable tunnel spoil from the underground works, for dam construction, thus reducing off-site disposal quantities.</p> <p>More detail regarding the options for the transportation and re-use of spoil is described in Chapter 2: The Proposed Development.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Chapter 18, paras 18.9.18 to 18.9.20 |
| 18-8                                           | Monitoring                      | <p>Monitoring of noise during construction works would be covered in a section included in the CNVMP (see Appendix 18.3). It is expected that monitoring of noise would only be carried out in response to a specific complaint.</p> <p>Vibration and air-overpressure monitoring would be carried out, either during trials, or during the early stages of blasting operations, for the purpose of predicting site-specific ground vibration and air-overpressure resulting from these operations. Detail of the monitoring programme would be included in the CNVMP, when more detail on the design of the blasting programme is known.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Chapter 18, paras 18.9.21 to 18.9.22 |
| <b>Chapter 19 – Socioeconomics and Tourism</b> |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                      |
| 19-1                                           | Mitigation During Construction  | <p>No socioeconomic or tourism mitigation measures have been considered for the Proposed Development at construction stage as there are no significant adverse effects anticipated. In terms of recreation and tourism, a Draft Access Management Plan is included in <b>Appendix 15.1</b>.</p> <p>Furthermore, there are mitigation measures contained within the Access and Recreation Chapter, to maintain access during construction and operation, to reduce the landscape and visual effects of the Proposed Development.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Chapter 19, paras 19.8.1 to 19.8.2   |

| Ref  | Subject                     | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EIAR Reference          |
|------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
|      |                             | This assessment demonstrates that there are beneficial socioeconomic effects across the construction and operational phases of the Proposed Development. For example, the local economy would be supported by the Proposed Development through direct and indirect employment and expenditure opportunities.                                                                                                                                                                                                            |                         |
| 19-2 | Mitigation During Operation | No socioeconomic or tourism mitigation measures have been considered for the Proposed Development at the operation stage as there are no significant adverse effects anticipated. In terms of recreation and tourism, a Draft Access Management Plan is included in <b>Appendix 15.1</b> . Furthermore, there are mitigation measures contained within the Access and Recreation Chapter, to maintain access during construction and operation, to reduce the landscape and visual effects of the Proposed Development. | Chapter 19, para 19.8.3 |