



**Garrogie Estate
Fort Augustus
Inverness-shire**

Development of 3 Run-of-river HEP Generating Stations

Environmental Report

November 2012

Report Title	Garrogie Estate – Environmental Report
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Client	Charles Connell & Co (Colquhalzie Farms) Limited
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Appendix B – Hydrological Study

Appendix C – Fish Habitat Survey

Appendix D – Breeding Bird Report

Appendix E –Terrestrial vegetation Survey

Appendix F – Mammal Walkover Surveys

Appendix G – Peat Depth Surveys

Appendix H – Bat Survey

Appendix I – Landscape and Visual Survey

Appendix J – Archaeological Desktop and Walkover Survey

Appendix K – Indicative Construction Method Statement

Appendix L – SEPA Scoping Checklist

1. Introduction

Garrogie Estate lies approximately 15km east of Fort Augustus on the south side of Loch Ness, and is well maintained, hosting a number of shoots throughout the relevant seasons. Additionally, the estate supports modest number of sheep grazing, maintained by the resident shepherd.

The estate is dominated by the heather moorland found at altitudes above 300mAoD. Relatively shallow peat covers much of the flatter areas at the higher elevations whilst the only woodland found tends to be located close to a waterbody. Above Garrogie Lodge, all woodland is contained within commercial plantations, however an area of Broad-leaved trees (mainly Oak) can be seen on the lower slopes of the Allt Mor below the road. RWE Innogy currently own and operate a 2.4MW run-of-river HEP (Hydro-Electric Power) scheme on the River Fechlin. This was completed in 2005, and consists of a 2.5km buried penstock which transports up to 5m³/s under pressure to the Francis turbine located within the powerhouse. All of the generated electricity is exported to the national grid.

Green Highland Renewables Ltd has been employed by the landowner to develop and apply for the required planning permission and water use licence¹ to construct and operate the following HEP schemes:

- Scheme 1 - Twin intake scheme incorporating:
 - Allt Mharconaich
 - Allt Loch Feith a' Phuill
- Scheme 2 - Single intake scheme on Allt Liath Bhaid. The flow in this scheme would be supplemented by additional water secured from a secondary intake on Allt na Ceardaich to the northwest. There are issues with this diversion which are discussed in section 3.2.1.
- Scheme 3 - Single intake scheme on the Allt Mor

The design drawings attached as Appendix A to this document show the layout of each scheme, and the locations of the associated infrastructure.

1.1. Landuse

The principle landuse on the estate is farming. Additionally a number of sporting activities take place. The area is well used by the public, and the River Fechlin is a well publicised kayaking river noted in numerous guidebooks.

The proposed Hydro scheme presents the opportunity for the estate to diversify its business portfolio, generating a reliable income and providing local employment opportunities, whilst assisting in meeting Scottish Government renewable energy targets.

1.2. Previous Correspondence

A Screening Request was submitted to The Highland Council (THC) on 8th of March 2012. A response was received on 23rd March 2012 stating THC's position, and a full Environmental Impact Assessment (EIA) and subsequent Environmental Statement (ES) was not required. A scoping exercise followed the receipt of this document which was discussed and agreed with the planning authorities prior to the initiation of fieldwork and subsequently the production of this Environmental Report (ER).

¹ CAR Licence – The Water Environment (Controlled Activities) (Scotland) Regulations 2011

1.3. Planning Context

Although no formal EIA and ES is required, this ER aims to provide an indication of the impacts identified on selected receptors of the proposed development, and to provide an indication of the proposed footprint of each scheme.

1.4. Report Format

The three proposed schemes are addressed within this single ER. This allows each scheme to be assessed in relation to the other proposed developments.

2. Specific Aim

The aim of this Environmental Report is to provide the Highland Council (THC), as the planning authority, with sufficient information upon which a planning decision can be made. Additionally, information relevant to the required water use licences is contained within this document.

Table 19 – Proposed landscape mitigation

Objective	Applicable to Scheme No.	Mitigation Measure
To ensure the structure fits in with the surrounding landscape	1, 2 and 3	M38. Roofs. pitch to mirror existing buildings; constructed of slate; overhang recommended but rejected due to risk of encouraging nesting birds and roosting bats, with subsequent danger of harm to those species in the event of maintenance work.
	1, 2 and 3	M39. Walls. harled, stone clad or timber clad, depending on location, and coloured specifically for each location;
	1, 2 and 3	M40. Timberwork. Dark green or brown, or estate colour if appropriate;
	1, 2 and 3	M41. Earthworks. No major earth sheltering which would be inappropriate in all locations, but some earth modelling (specific to each location) to settle the buildings into their landscapes;
	3 only	M42. Tree planting. To create a screen around the powerhouse selected planting of tree species (birch, rowan etc) existing in the area to occur.
	1, 2 and 3	M43. Kiosk. As close as possible to the powerhouse, and finished in the same colour.

A sketch showing the post-mitigation structure (artists impression) can be seen in Appendix I. The trees to be planted at Scheme 3 are not shown as these are specific to Scheme 3.

5.9. Archaeology and Cultural Heritage

A desktop and walkover survey was completed by Scotia Archaeology on behalf of GHR in July 2012. This identified a number of remains that could potentially be affected as a result of the proposed development. The desktop survey revealed a number of sites, however they were deemed to be at no risk from the development. The walkover survey that followed identified two potential receptors to the development:

1. A structure marked as no. 6 on the report maps at approximate NGR NH 5319 1155. This has been identified as a substantial shieling and is located on the north bank of the Allt Liath-Bhaid.
2. An enclosure marked as no. 7 on the report shows the remains of a structure that lies close to the proposed penstock route on scheme 3 at approximately NH 5054 1259.

In addition to this, a sheepfold has been identified adjacent to the proposed powerhouse on Scheme 2. This is a large obvious structure and lies to the south of the proposed penstock route, and to the east of the powerhouse site at approximate NGR NH 5282 1145. The original route was on the north side of the Allt Liath-Bhaid, hence why the sheepfold was not originally identified as a potential receptor and no. 6 was. The pipe would now follow the existing track on the south side, passing close to the sheepfold, with the powerhouse located close by. This minor deviation has resulted in the sheepfold now being considered within the mitigation proposals.

5.9.1. Proposed mitigation

It is anticipated that by implementing the below mitigation that impacts on the receptors identified above would be avoided.

Table 20 – Proposed archaeological mitigation

Objective	Applicable to Scheme No.	Mitigation Measure
Avoidance of direct impacts on identified structures (no. 6 & 7 and unidentified structure)	2, 3	M44. Fencing erected around each structure giving a suitable buffer zone to avoid damage. This should include preventing damage by direct contact, ground pressures or covering by excavated spoil.
Informing the workforce	2 and 3	M45. Prior to the initiation of any ground-breaking works the primary contractor would be made aware of the fencing, what it's role is and the significance of adhering to the mitigation. This would then be passed down to the workforce constructing to the scheme to ensure the ongoing integrity of each site.

5.10. Recreation

5.10.1. Access

The road up to Loch Killin is open to the public, with vehicular access ending at the turn off to Killin Lodge. Schemes 1 and 2 would not impact on public access in anyway, as they would be located away from existing access tracks. Scheme 3 would impact on access to Loch Killin as the penstock is proposed to cross the road approximately 3km west of the outflow from Loch Killin. It is anticipated that this would require a road closure lasting for no longer than 2 consecutive days. During this time the road would be closed to the public with signs displayed at the turn off from the B862. The primary contractor would be instructed to keep heavy steel plates next to the excavation to allow the free passage of any emergency service vehicles that require access. Additionally it is important to inform the public that there will be a road closure in place.

Table 21 – Proposed archaeological mitigation

Objective	Applicable to Scheme No.	Mitigation Measure
Facilitating emergency access to the estate	3	M46. Ensure the primary contractor has heavy-duty steel plates next to the excavation across the road, and the plant to move it at short notice.
Facilitating emergency access to the estate	3	M47. Provide contact details of the site office/manager to the emergency services should access be required during the excavation
Informing the public of the road closure	3	M48. Erect signage at the turn off from the B862 providing closure dates and duration.