Green Highland

Unlocking Hydro Energy

Loch Etive Hydro Development

Construction and Operation of Marine Landing Facility at Rubha Barr

July 2019

Screening Request

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A	Draft design drawings
B	Draft Scheme of Mitigation from the Hydro EIAR

1. Introduction

1.1. Background

SIMEC GHR Ltd (GHR) received planning consent and CAR licences[1] for 3 run-of-river Hydro schemes around Loch Etive in March 2019, with the details of these authorisations shown in table 1.

Table 1 – Scheme Details

Scheme Name	Capacity (MW)	Planning Reference	CAR Licence Reference	Location
Allt Easach	2MW	18/01257/PP	CAR/L/1169145	North shore of Loch Etive
Allt Hallater	2MW	18/01258/PP	CAR/L/1180237[2]	Glenkinglass, south shore of Loch Etive
Glenkinglass Lodge	1.8MW	18/01259/PP	CAR/L/1169108	Glenkinglass, 2km east of Allt Hallater

Each scheme is to be constructed simultaneously with commissioning expected at the beginning of 2021.

As part of the planning application, in order to minimise the impacts on the existing private road network (and consequently minimise the impacts on the environment adjacent to the existing roads, some of which is designated), a combination of road and marine access is to be used. Discussions with Marine Scotland Licence Operations Team have established that the infrastructure required to facilitate the Marine element requires licencing prior to the works being undertaken.

This document addresses the infrastructure required to facilitate access to the north side, servicing Allt Easach.

Two marine licences have been awarded to this site, referenced:

- 06760/19/0 – this authorises the installation of a sub-sea cable to connect the Allt Easach to the national grid at the point of connection at Ardmaddy, on the south side of Loch Etive.
- 06997/19/0 – this authorises the landing facility on the south shore of Loch Etive to facilitate the Allt Hallater and Glenkinglass Lodge Hydro schemes.

1.2. Site Location

To enable the delivery of construction materials and plant by boat, a new landing facility is required at Rubha Barr, shown circled in red in figure 1.

[1] Authorisation under The Water Environment (Controlled Activities) (Scotland) Regulations 2011, issued by SEPA
[2] A variation to an existing licence, originally awarded to Innogy Renewables and subsequently transferred to GHR

Figure 1 – Location of the works. Rubha Barr is circled in red, and Bonawe quarry is circled in blue for context.

The proposed works would be undertaken at Rubha Barr, Loch Etive. Table 2 provides the co-ordinates of the four corners of the works which are shown on drawing ref: 600377-DG-3007-P3.

Table 2 – Infrastructure Co-ordinates		
Point	Lat	Long
Northwest corner	56°30.2673	-5°8.23254
Northeast corner	56°30.2658	-5°8.22756

Table 2 – Infrastructure Co-ordinates		
Point	Lat	Long
Southwest corner	56°30.2105	-5°8.28246
Southeast corner	56°30.2090	-5°8.27652

1.3. Construction process

The following methods would be used to construct the landing facility:

- Isolate the northern concrete pad area using one tonne bags filled with clean gravels. Overpump any isolated water to dry the working area.
- Erect shuttering, and pour concrete allowing to cure before the one tonne bags are removed.
- Working from the beach outwards, lay large diameter clean boulders along the line of the landing facility. This will create the stable base of the track.
- Using clean smaller diameter crushed rock, fill between the boulders and create the running surface ensuring it remains above the MHWS elevation.
- Lay large diameter boulders along the edge of the landing facility from the bed of Loch Etive to the running surface. This will provide protection from wave/wind erosion during the operational period.
- The above is to be an iterative process until the southern (deepest) end of the landing facility is reached.
- Working from the landing facility, form cofferdam using one tonne bags filled with cleaned gravels to create a dry working area. Overpump any isolated water away from the working area.
- During the next phase it is imperative that pumps are kept to hand to address any seepage into the working area.
- Form concrete pad by excavating down below the natural bed of Loch Etive.
- Lay blinding concrete.
- Mass pour concrete to the required gradient, ensuring the northern end of the concrete is at the same elevation as the running surface of the landing facility.
- Install anchors to ensure landing craft can tie off safely.

1.4. Vessel Information

A local pilot familiar with Loch Etive would be contracted to assist with the delivery of construction materials. No ships over 1,350T would be used.

1.5. Project timeline

The following dates are indicative but provide a reasonable overview of the project timeline:

- Installation of landing facility – September 2019
- Removal of landing facility – July 2022

Upon decommissioning the materials will be excavated and removed from site before being returned to source. The concrete pads will be broken up and removed from site, disposed of by the Principal Contractor according to the relevant prevailing legislation.

1.6. Document purpose

This document provides information to support the request for a Screening Opinion regarding the proposed works under Part 2 of The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017. The headings provided under Schedule 3 have been used throughout this document to aid the reader.

2. Characteristics of works

2.1. Size and design of the works

The works proposed consist of a landing facility to enable the delivery of construction plant and materials, avoiding heavy use of the existing road that runs parallel to the shore of Loch Etive from Bonawe to the site. The facility would be constructed from a rockfill core with armour stone protection on all sides. A concrete platform would be formed at either end to provide stable and safe access, and the southern end would be fitted with fixed anchor points to secure the ships whilst materials are being offloaded. The landing facility would extend from MHWS to MLWS with the following characteristics:

- Length – 120m
- Running surface width – 6m
- Base width – 8.3m on average (depending on depth)
    - Total plan area (including scour protection) – 998m^2, or around 0.1Ha

The facility would be a temporary structure, to be removed upon completion of the construction phase.

A draft design has been produced, attached as Appendix A with the following references:

- 600377-DG-3006-P2
- 600377-DG-3007-P3

2.2. Cumulation with other existing works and/or approved works

The proposed landing facility would service the Allt Easach Hydro scheme which forms part of the Loch Etive Hydro development. Table 1 in section 1.1 provides details of the existing authorisations associated with the proposed works, and a description of the overall project.

2.3. Use of natural resources

The landing facility would be constructed using rock won on site, cleaned prior to placement in Loch Etive. All rock would be returned to source upon removal at the end of the construction phase. Small amounts of concrete would be used at either end to provide robust access for vehicles, and it is likely that this would be batched on site.

There is no consumption of natural resources associated with the proposed works.

2.4. Production of waste

As the facility would be temporary, the only waste generated would be the concrete pads. The cleaned rock would be returned to its source. Waste would be addressed by the principal contractor who would dispose of it according to the relevant legislation at the time, liaising with SEPA and Marine Scotland to ensure appropriate disposal.

2.5. Pollution and nuisances

The facility and proposed works are unlikely to create pollution or be considered a nuisance due to the following:

- Pollution:

- The facility would be constructed from cleaned, locally sourced rock.
- The concrete pads providing safe access would be constructed from within a dry environment, using 1T bags filled with cleaned gravels to isolate the working environment. This would be done a low tide, with pumps on standby to remove any water that accidentally enters the working area. These pumps would discharge onto the vegetation on land with the outlet moved periodically to prevent inundation.
- All plant and landing craft would be subject to rigorous maintenance inspections, ensuring there is little to no risk of fuel or hydraulic fluids leaking into nearby waterbodies.

- Nuisance – potential impacts can be split into three categories:
  - People who live or stay in the area - there are two regularly inhabited, private properties close to the proposed works:
    - Barrs Lodge – around 900m northeast of the proposed works
    - Dahl Beag – around 700m west of the proposed works

    Both proprietors have been extensively consulted regarding the overall project and are aware of the proposed works. Neither have expressed any issue.
  - People at work or leisure in the area – this includes members of the public along the existing roads parallel to Loch Etive on both sides, climbers on the surrounding peaks, people on the loch, and people camping in the area. Impacts on these receptors would be negligible, due to the distance from the works, the short duration of the works, the reversibility, and the duration of exposure. It is arguable that the proposed works represent a benefit to members of the public in the context of the Hydro construction works for two reasons:
    1. The use of boats would reduce the number of vehicles on the existing road, minimising the number of times they encounter members of the public.
    2. The use of boats, and the delivery of heavy equipment and plant by them, minimises the scale of upgrades required on the existing road, enabling the route to retain much of its wild feel throughout construction and operation. This is significant as some of the woodland adjacent to the existing road forms part of the Loch Etive Woods SAC, and taking all equipment in by road would likely result in impacts on the qualifying criteria.

    People working in the area would either be forestry personnel clearing the woodland to facilitate the Hydro construction, or members of the Hydro construction team and as such would be unaffected by the proposed works.
  - People passing through the area with the sole purpose of getting to a destination. This differs from the above in that the journey itself is not the activity, therefore the impact is on the objective of the commute. There are no connecting through roads and consequently there would be no people in this category.

2.6. Risk of accident

Accidents could occur during the construction, operation, and decommissioning of the proposed works. Each contractor (including sub-contractors where necessary) would produce their own Risk Assessments and Method Statements (RAMS) prior to the

commencement of the proposed works. Due to the short duration of the works and the temporary nature of them, it is not proposed that risks associated with climate change are included.

The small-scale nature of the proposed works is such that major accidents are unlikely, however the following is possible:

1. The proposed structure could fail during use – the design proposed is robust and has been proven to work in locations similar to this. Protection would be installed to prevent wave erosion and the structure would undergo regular maintenance inspections to ensure it remains in good shape. TSL Ltd, the Principle Contractor, have a significant amount of experience in the construction and maintenance of this type of structure.
2. The pilot of the boats may make an error in approach – to address this a pilot experienced in navigating Loch Etive is to be employed throughout the construction phase.
3. The loads could be shed into Loch Etive – all loads would be secured to the deck of the boat, with the pilot using their knowledge and experience of the loch to determine whether it is safe to travel. Weather reports and visual observations will be key in this decision.
4. The loads could fall into the loch during handling – TSL operators have a significant amount of experience of working on structures in environments similar to the proposed works. As with the transit along the loch, the operators would decide when it is safe to access the landing facility and handle equipment.

There may be other risks, and these would be identified by the contractors when relevant, however it is not expected that they would be insurmountable or represent a significant risk to the environment, the boat, the plant, or the operators/pilots.

2.7. Risk to human health

It is not anticipated that there will be any risks to human health in addition to those outlined in the previous sections, and it is believed that these are all relatively easy to mitigate.

3. Location of works

3.1. Existing and approved land use

The land is currently owned by Forest and Land Scotland (FLS – formerly Forestry Commission Scotland (FCS)), and in the latest Land Management Plan (LMP) the area is classified as Open Habitat as shown in Figure 2. The area will be retained as open habitat and will be returned to its current state once construction works are completed. The planning consent issued by ABC is dependent upon the proposed works being temporary in nature, therefore GHR is legally required to remove the landing facility upon completion. As a result the proposed works are consistent with the existing and proposed land use.

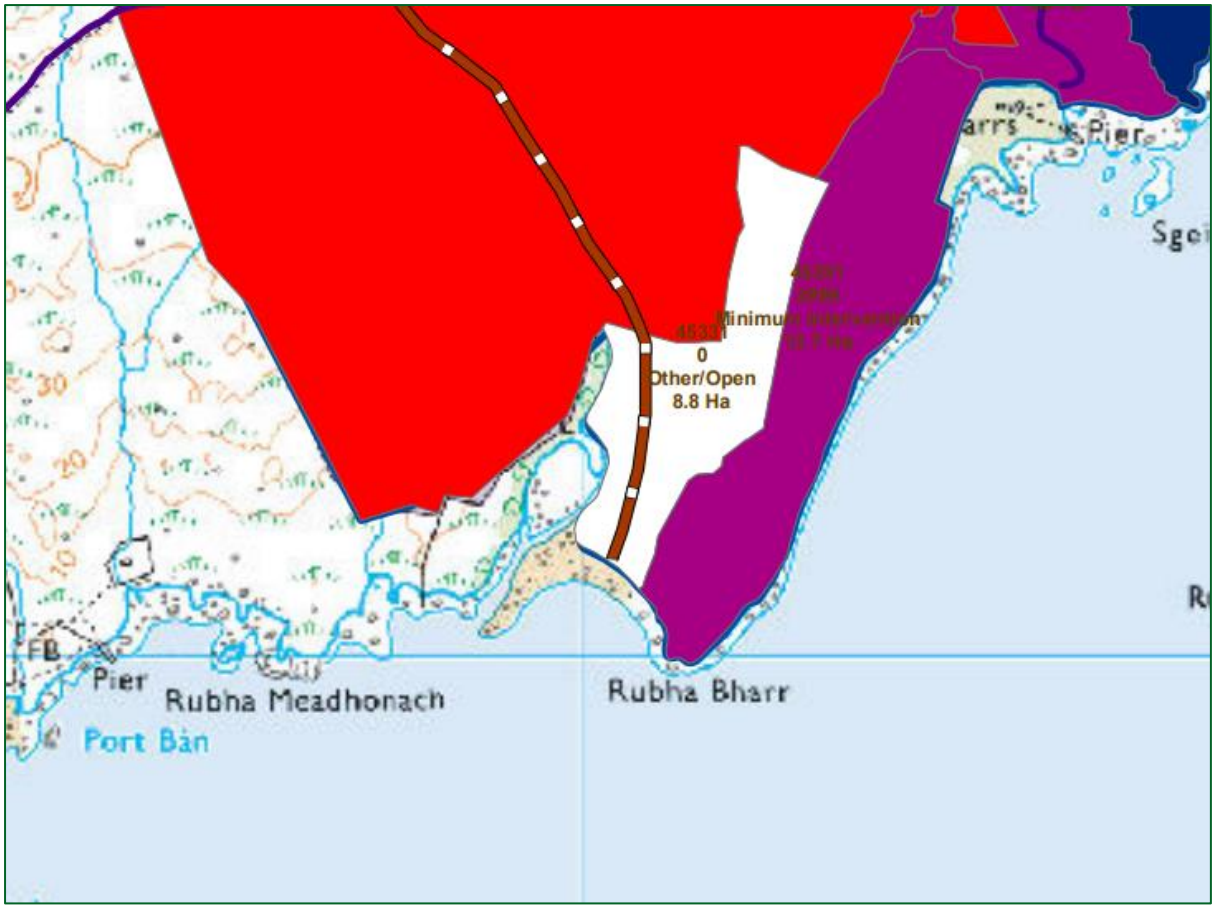

Figure 2 – Land classification in the latest LMP

3.2. Regenerative capacity of natural resources

Loch Etive is a tidal loch, with a tidal range of around 1.2m observed at Rubha Barr. The distance between the MHWS and MLWS is around 120m and the intertidal zone slopes gently down towards the Loch, consisting of sand and small to large boulders. Based on observations of the surrounding shores it is likely that rock is present at relatively shallow depths below this. Below the MLWS mark, the bed of Loch Etive drops off quickly with depths increasing to greater than 3m in less than 20m.

Figure 3 shows an aerial photo of the beach at Rubha Barr. It's clear that the sandy composition of the intertidal zone (to where the depths increase dramatically) continues into the deeper water. Occasional boulders can be seen, however there are many smaller boulders not picked up.

Figure 3 – Aerial imagery of the beach at Rubha Barr

Figure 4 shows a screenshot from the Dynamic Coast website[3], displaying the change in the nature of the shoreline. It can be seen that the most significant change is the small triangle of land to the west of the proposed facility location where the MHWS line has changed due to the accretion of material deposited by the Allt Easach as it enters Loch Etive. The prominence of Rubha Rubha Barr shelters the bay from strong currents which creates the conditions to form the sloping intertidal zone, however the bay hasn't changed significantly for around 50 years. As the landing facility will be temporary in nature and will only rest on the bed of Loch Etive (i.e. there are no deep excavations or any piling proposed) there is expected to be no long-term impacts on the characteristics of the bay. Additionally, as the bay is already sheltered from currents which cause drifting of the deposited sediment, the landing facility is not expected to alter any ongoing coastal processes whilst in-situ.

[3] Scottish Government. SNH. SEPA. Ordnance Survey. The National Library of Scotland. © Crown copyright [and database rights] 2017 OS 100017908. (2017). Dynamic Coast: Scotland's NCAA. Available: https://snh.maps.arcgis.com/apps/webappviewer/index.html?id=3b70a725513446749e62612e3dd4b463. Last accessed 12th June 2019.

Figure 4 – Screenshot of the Dynamic Coast website

Figure 5 shows the habitat survey around the shoreline where it can be seen that the land adjacent to the landing facility is acid grassland.

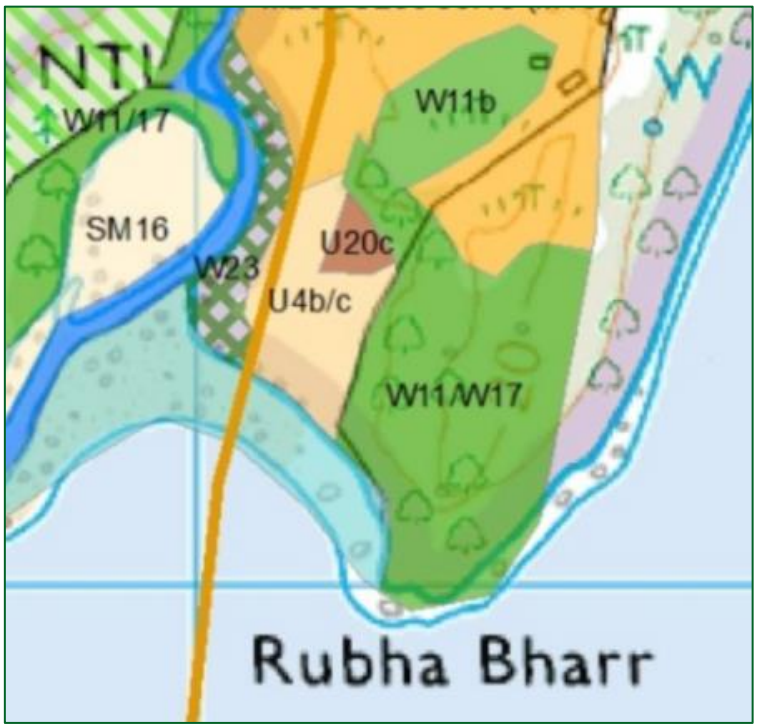

Figure 5 – Habitat survey of the land adjacent to the landing facility

The Construction method Statements (CMS) associated with the planning consent for the proposed works have been approved by ABC and demonstrate a commitment to incorporating best practice. Provided these are adhered to the ground, including the soils, should recover well and return quickly to its pre-construction state.

No significant features relating to biodiversity were found that could be impacted by the proposed works. The site would be monitored by an ECoW during construction and any issues addressed appropriately.

There is predicted to be no long-term impact on the natural resources. This is largely due to the limited extent of the works and the temporary nature of the facility.

3.3. Absorption capacity of the natural environment

The Hydro scheme and associated infrastructure, including the landing facility, was included in the application for planning consent which was subsequently consented by ABC. The impacts on, and the absorption capacity of, the natural environment was addressed through this process. A copy of the summary and conclusion chapter, including the draft Scheme of Mitigation, has been included in Appendix B. The full report can be made available upon request.

4. Characteristics of the potential impact

As described in section 3.3, the proposed works have been subject to a rigorous and thorough assessment through the Town and Country Planning (Scotland) Act 1997, receiving consent issued by ABC, the planning authority. Extensive consultation took place with all statutory and non-statutory consultees resulting in mitigation being proposed where relevant. Whilst this application was subject to an EIA, with an EIA Report (EIAR) submitted in support of the planning application, it is considered that the proposed works should not be subject to an EIA. This is due to the following:

- The characteristics of the works, including the extent and duration, are extremely limited in the context of the surrounding environment and environmental/coastal processes.
- The immediate area is likely to recover quickly, and no significant biodiversity issues were encountered during the baseline studies carried out.
- Impacts on the receiving marine environment were addressed through licence 06760/19/0. Although this was issued for the laying of a sub-sea cable, it is considered that the impacts are lesser due to the following:
    - The proposed works are temporary
    - The proposed works are inert with no potential for EMF impacts on species in Loch Etive

It is appreciated though that the competent authority with regards to the require licence is Marine Scotland, and as such GHR is happy to consult further on what assessments might be required in support of the forthcoming application.

5. Conclusion

The landing facility as described cannot be considered a Schedule 1 development as the vessels delivering materials will be significantly less than 1,350T. Consequently, the landing facility should be screened for whether it can be classed a Schedule 2 activity. Loch Etive is a category C Inland Waterway and therefore the landing facility can be considered an Infrastructure Project (category 10), specifically sub-section (h) – "Inland-waterway construction not included in schedule 1, canalisation and flood-relief works". The works are less than 0.1ha, therefore less than the threshold of 0.5ha. Combined with the assessments already carried out, the characteristics and location of the works, the duration of the works, and the

limited potential for impacts on the local environment, SIMEC GHR does not believe the landing facility should be considered an EIA development.