

Response to Jacobite Cruises Ltd. Objection Requirements:**Glen Earrach Pumped Storage Hydro Scheme - Addressing Conditions for Objection Retraction**

To: Alison Daun, Managing Director, Jacobite Cruises Ltd

CC: Douglas Yule, Energy Consents Unit, The Highland Council.

From: Glen Earrach Energy Team

Date: 10th November 2025

Re: Response to Objection Letter Requirements (ECU00005121)

Dear Alison,

Thank you for your comprehensive letter dated 2nd June 2025, and for the constructive meeting held on 3rd July 2025. We appreciate your detailed engagement then and since, and the opportunity to address your concerns directly.

As discussed in our meetings, we fully acknowledge that Jacobite Cruises Ltd. actively participated in the consultation process, including attendance at the roundtable event in May 2024, submission of detailed written responses in November 2024, and subsequent email communications. We sincerely apologise for the inaccurate information in our consultation records as this was a genuine mistake in the table that we should have caught at the time of submission.

Below, we address each of the specific requirements you outlined as required for retraction of your objection:

1. Assessment of Water Level Fluctuations

Requirement: *"An assessment of water level fluctuations which details the likely frequency and rate of fluctuations as a result of the installation of the Glen Earrach PSH, and accounting for potential climatic changes such as increased incidence of drought"*

Our Response:

Based on our operational modelling and the discussions during our meeting, we can provide the following assessment:

Rate of Change: During PSH operations, water level changes from the operation of the Glen Earrach PSH will be approximately **1 inch per hour** during active pumping or generation cycles.

Frequency and Duration of Operations:

- **Typical Operation:** 2-6 hours duration, with only occasional periods of longer operation;
- **Pumping cycles:** More likely to occur overnight (taking advantage of lower energy costs);
- **Generation cycles:** Typically occur during peak demand periods (mornings and evenings);
- **Full reservoir cycling:** Expected to be infrequent given the combination of market requirements and weather conditions;
- **Weather-driven patterns:** The scheme will typically operate in response to multi-day weather patterns rather than daily cycling; and

- **Minimum water levels:** Our “hands off” pumping level will be 15.42 mAOD, which we understand is above your operational requirements at all three sites.

Operational Response to Weather Patterns: As discussed, the scheme operates primarily in response to Atlantic weather systems, with extended periods of pumping during windy conditions (5-6 hours per night over multiple days) followed by generation during calm periods.

Climate Change Considerations: We acknowledge the potential risk of drought conditions due to climate change and other local weather factors. Our proposed mitigation to enable PSH is through upgrading the Dochfour Weir system, which specifically addresses this concern by preventing water wastage during generation cycles and maintaining consistently higher average water levels during the summer months. This dual effect – conserving water through PSH operations and allowing for a summer level increase through the adjustable weir – provides greater resilience and stability for navigation and tourism operations during critical summer periods.

Detailed Assessment: Our Additional Information submitted to ECU, dated June 2025, provides further hydrological modelling data, including specific frequency analysis and time-series data for exceptional low-level scenarios (May-June 2023) and typical summer conditions (May-June 2021). This modelling shows the hydrological status at various water levels including your operational thresholds.

2. Cumulative Impact Assessment

Requirement: *"An assessment of cumulative impacts taking account of other PSH schemes (operational and proposed) utilising Loch Ness as a lower reservoir including regulatory compliance mechanisms to mitigate any impacts"*

Our Response:

We have conducted comprehensive cumulative impact modelling as detailed in our Additional Information submission, dated June 2025. This includes:

Modelled Schemes:

- **Foyers PSH:** Already included in baseline conditions;
- **Red John PSH (Loch na Cathrach):** Consented scheme;
- **Loch Kemp PSH:** Potential scheme (recently refused at THC planning committee but currently being appealed to Scottish Ministers); and
- **Glen Earrach PSH:** Our proposed scheme.

Cumulative Impact Results:

- **Glen Earrach alone:** Approximately 1 inch per hour change; and
- **Glen Earrach + Loch Kemp:** Approximately 2 inches per hour change (effectively doubling the impact).

The reference to proposed Scottish Water Inverness Water Treatment Works abstraction (40,000 m³/day) is noted, however this equates to less than two minutes of Glen Earrach's full-capacity pumping and is therefore insignificant for cumulative impact assessment.

Key point on other schemes: As discussed in our meeting, due to the difference in height (hydraulic head) schemes on the other side of the loch store **significantly lower amounts** of energy for the same volume of water moved compared to the more water efficient Glen Earrach PSH scheme. In practical terms, this means for every inch of water level movement, Glen Earrach provides 2.5 times more energy storage and available power than the next largest scheme in Loch Ness, making Glen Earrach a much more efficient user of the Loch Ness water resource.

Regulatory Compliance Mechanism - Water Management Board:

We propose establishing a **Water Management Board** with the following structure:

- **Governance:** Dochfour Weir owned and operated by Scottish Canals as a public body;
- **Membership:** All loch stakeholders including Jacobite Cruises, other key commercial users of the loch, Ness Fisheries, SEPA, Highland Council, any other appropriate public bodies and PSH developers;
- **Transparency:** Open algorithms for water level management, real-time telemetry data available to all stakeholders; and
- **Authority:** Binding operational rules for all PSH schemes through the CAR process, with immediate enforcement capability through the Water Management Board (an improvement on current SEPA response times for enforcement)

Binding Commitment: We will not proceed with main construction of the Glen Earrach PSH, without the planning consents for Dochfour Weir modifications, and we will not start operations before the upgraded weir is operational and the Water Management Board is established.

3. Reassessment of Socio-Economic Impacts

Requirement: *"A reassessment of socio-economic impacts taking account of the effects on tourism (including receptors across the whole area of Loch Ness) due to the changing water levels"*

Our Response:

We acknowledge the concerns raised about the scope of socio-economic impact assessment. While we don't see the need for a full reassessment, we commit to the following:

Direct Stakeholder Engagement:

- Formal offer for inclusion of Jacobite Cruises in ongoing Community Liaison Group;
- Recognition of your business as a key receptor regardless of technical study boundaries; and
- Continued dialogue through the Water Management Board structure.

Site Assessment and Engineering Solutions:

Following our meeting on 3rd July, we conducted a joint site visit to Clansman Harbour that same day, guided by your Operations Manager, Colin Barbour. This practical assessment has provided very useful insight into your operational requirements and potential improvement measures.

Key Observations from Site Visit:

- Better understanding of the operational constraints at different water levels;
- Identification of potential engineering solutions to provide greater flexibility across the operating range; and
- Recognition that improvements could be achieved whilst remaining within current natural water level variations.

Engineering Development Opportunity: Based on our site assessment with your Operations Manager and your operational expertise, we believe there may be scope for targeted infrastructure improvements that would enhance operational flexibility across the full range of water levels, whilst maintaining the high operational standards you and your customers expect.

Economic Protection Measures:

- **Community Wealth Fund:** 5% of gross revenue (approximately £20M annually) feeding directly into the local economy and delivering against community priorities;
- **Water Management Board oversight:** Direct stakeholder representation in operations impacting on Loch Ness; and
- **Immediate response capability:** Real-time monitoring with corrective action requirements

4. Comprehensive Dochfour Weir Assessment

Requirement: *"A more comprehensive and joined-up assessment of the Ness Weir upgrade is required to clarify whether both of its objectives (moderating river flow and moderating loch surface level) can be met simultaneously and effectively"*

Our Response:

Our proposed Dochfour Weir system fundamentally differs from alternative approaches and specifically addresses the dual objectives:

Technical Solution:

- **Variable Weir Design:** Adjustable system that operates during summer months (May-September) but can drop completely at 1-2 days' notice in winter (maintaining flood capacity). The assessment completed assumes operations during the summer months only, which is the most critical with respect to protection of water levels, and is the mitigation required to enable the Glen Earrach scheme. However, if of interest to stakeholders, extending operation into the winter months will also be technically feasible and could be explored through the Water Management Board, once formed;
- **Real-time Control:** Weir responds to PSH operations in real-time, rising during generation and lowering during pumping; and
- **Dual Objective Achievement:**

- **River Flow:** Maintains natural River Ness flow patterns as if no PSH operations were occurring; and
- **Loch Level:** Provides enhanced level management with higher summer base levels.

Key Benefits for Your Operations:

- **Eliminates water wastage:** No water lost during generation cycles;
- **Higher base levels:** Maintained during critical summer tourism period;
- **Reduced extreme lows:** Less likelihood of hitting minimum operational levels; and
- **Enhanced fish passage:** Improvement over current 80% salmon mortality rate.

Governance and Operation:

- **Scottish Canals Ownership:** Public body ownership and operation rather than developer control;
- **Transparent Operation:** Open algorithms and real-time monitoring available to all stakeholders; and
- **Stakeholder Oversight:** Water Management Board provides ongoing governance.

5. Assessment Without Dochfour Weir

Requirement: *"An assessment of effects on Loch Ness without the Ness Weir upgrade, on the basis that the Ness Weir may not be consented"*

Our Response:

Binding Commitment: We will not proceed into the Construction Phase of Glen Earrach PSH scheme without the Dochfour Weir upgrade being consented or fully commission the scheme until the Dochfour Weir is upgraded. This commitment will be included as a planning condition or planning agreement.

Risk Mitigation: By making the Dochfour Weir a prerequisite for our scheme, we eliminate the scenario you're concerned about. As stated in our meeting, we've been working very hard on that aspect and we are committed to delivering these works as a pre-requisite condition for the scheme.

6. Demonstration of No Significant Adverse Effects

Requirement: *"The outcome of the afore mentioned assessments to demonstrate no significant adverse effects"*

Our Response:

The letter requires that the outcome of the assessments on (i) water level fluctuations, (ii) cumulative impacts, (iii) socio-economic impacts linked to water levels, (iv) the role of the Dochfour Weir, and (v) the effects without the weir, should together demonstrate no significant adverse effects.

Our submitted assessments, including the hydrological and cumulative modelling provided in the Additional Information (June 2025), show that with the proposed Dochfour Weir mitigation in place, no significant adverse effects arise. This commitment to the Dochfour Weir has been made as part of our application and will be secured by planning condition, as stated above: the Glen Earrach PSH scheme will not proceed without the required upgrades to the Dochfour Weir.

In addition, all PSH operations will be regulated under SEPA's Controlled Activities Regulations (CAR) licensing regime. This statutory process provides enforceable conditions for water level management.

Additional Commitments

Engineering Solutions at Clansman Harbour:

Based on the joint site visit with your Operations Manager and the discussions held to date; we are committed to developing and funding practical engineering measures that enhance operational flexibility across the full range of water levels. Our preferred solution is to replicate the existing short wall gangway system at the long wall location. Should this prove technically unfeasible, we will work with you to agree an alternative, such as a floating pontoon arrangement, that meets your operational requirements.

Commercial Arrangement:

We confirm our commitment to entering a commercial arrangement, upon agreement of Heads of Terms, to deliver these works, ensuring that the agreed solution strengthens your long-term operational resilience.

Next Steps:

We recognise that a detailed technical assessment is still required but given the time pressures on the consenting process, we are setting out this clear commitment now. We will work with your team to confirm the preferred option and incorporate the agreed design and commercial terms into a formal agreement.

Conclusion

We believe this comprehensive approach, supported by our detailed technical submissions and binding commitments, addresses all your stated concerns whilst providing additional safeguards and long-term benefits for Loch Ness tourism operations.

The combination of the Dochfour Weir upgrade, Water Management Board governance, and substantial community wealth fund represents a fundamental shift from traditional developer-led projects to a genuinely collaborative approach that protects and enhances local interests.

We remain committed to working constructively with Jacobite Cruises Ltd. to ensure the protection and enhancement of your business operations whilst delivering much-needed renewable energy infrastructure in a responsible manner.

We look forward to your response and to continuing our constructive dialogue.

Yours sincerely,

R. Martin Lacey

Project Director
Glen Earrach Energy Limited