

Memo

To: [REDACTED] From: [REDACTED] - Project Manager
Sloy Pumped Storage
Project/File: Sloy Pumped Storage Date: 4th July 2025

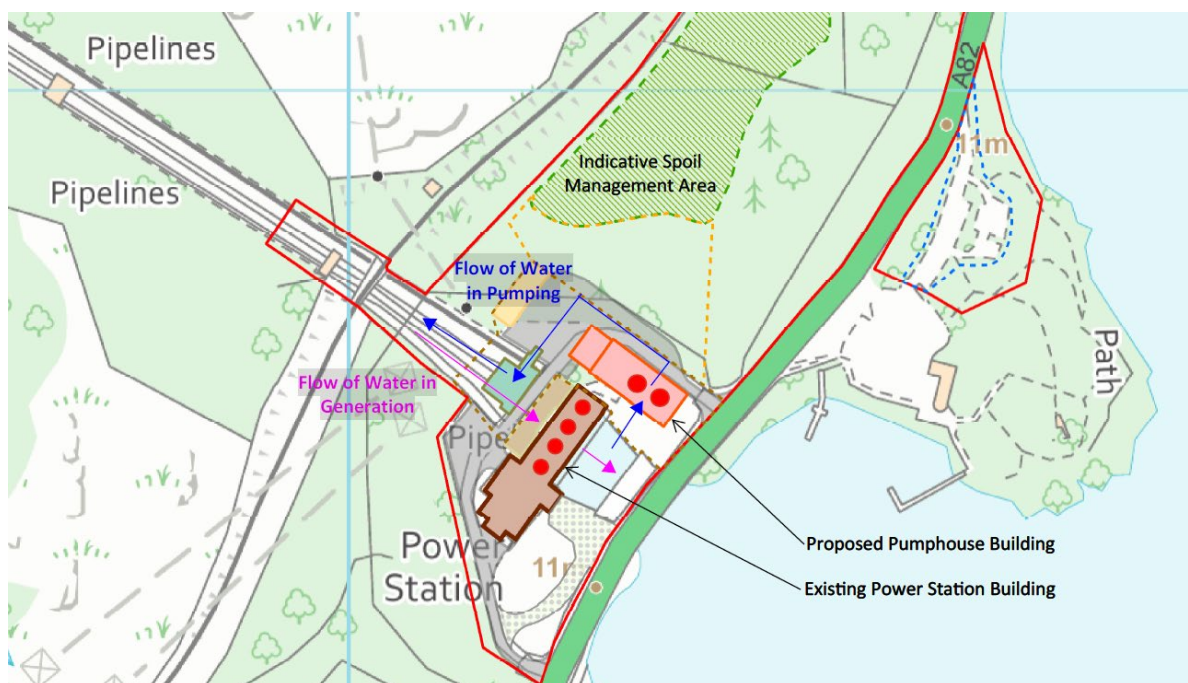
Reference: Sloy Pumped Storage CAR Variation CAR-L-1011861 – Supporting Information

As requested in your email dated 7th March 2025, please find below a memo answering your questions and presenting supporting information for SSE Renewables' (SSER) application to vary the existing CAR Licence for the Sloy Hydro Scheme (CAR-L-1011861) to incorporate SSER's recently submitted proposals to convert the scheme to pumped storage hydro.

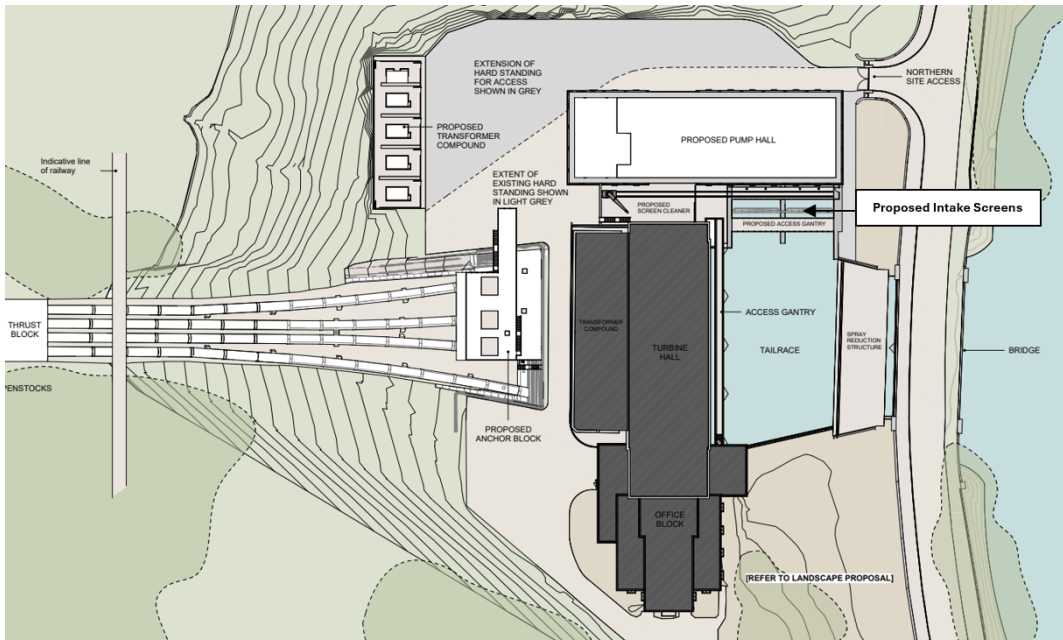
Please find enclosed a copy of **EIA Chapter 8 - Sloy Pumped Hydro Storage Scheme - Aquatic Ecology and Fish**, which details potential impacts on the aquatic environment and proposed mitigation measures.

1 Introduction

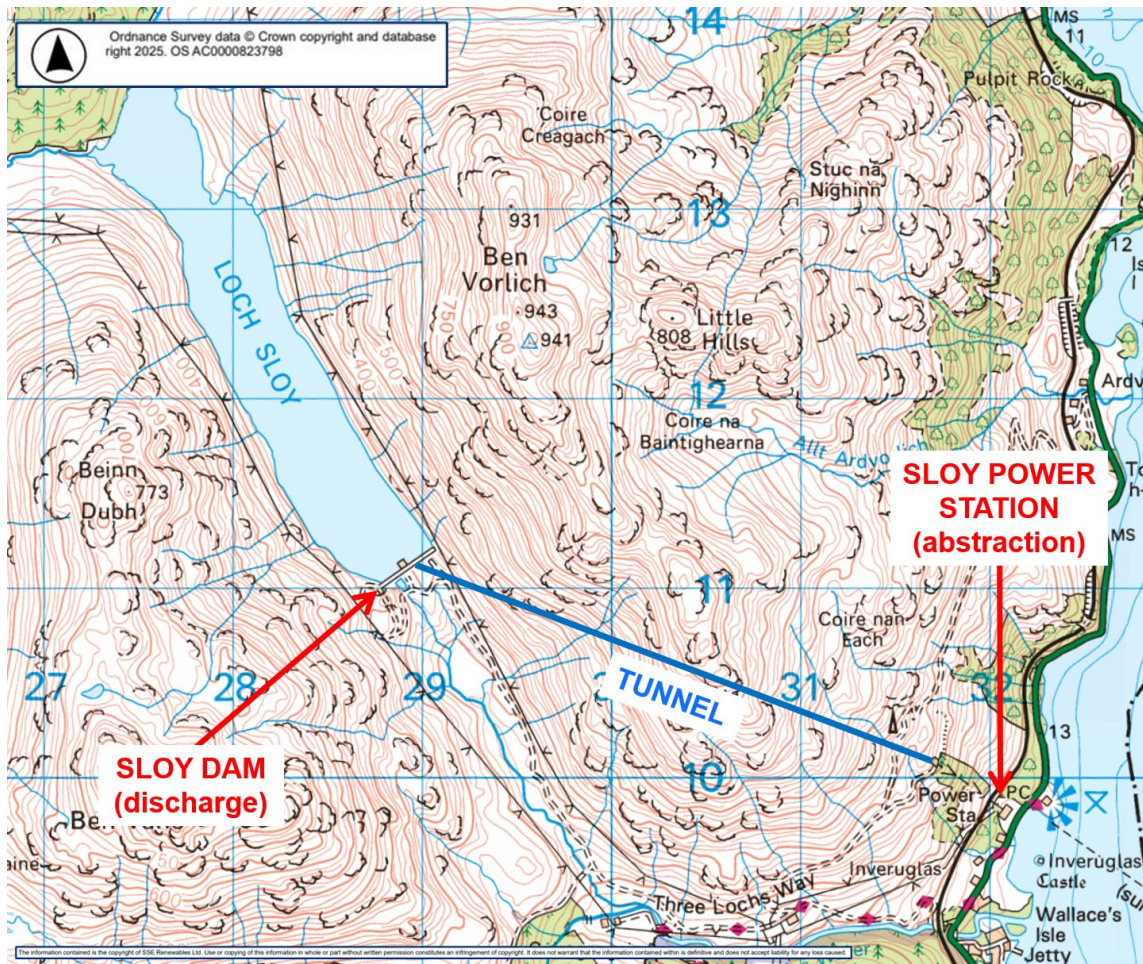
Sloy Power Station is the UK's largest conventional hydro scheme with a maximum generating capacity of 152.5MW. In April 2025, SSER submitted an application for consent to convert the current Sloy scheme to pumped storage hydro with up to 100MW of pumping capacity. Pumped storage hydro uses excess electricity during off-peak hours to pump water from a lower reservoir to an upper reservoir; water is then released during peak demand periods. The conversion would be achieved by the installation of two pumps located in the grounds of the existing power station on the shores of Loch Lomond. Water would be abstracted from the existing Sloy Tailrace and transferred to Loch Sloy (over 3km away and over 270m higher) using the existing pipelines and tunnel system.



Indicative layout of pumped storage proposals showing flow of water in generation and pumping



Planning concept design showing the proposed intake structure and screens



Scheme Location

2 Inlet screens

Following pre-application engagement with the SEPA Water Permitting Team in mid-2024, SSER are proposing to use a steel inlet screen with a maximum approach velocity of 0.45m/s with 8mm flat bars and 12mm bar aperture. The screens would be regularly cleaned using a mechanical screen cleaning system and would be specified to be oversized to maintain acceptable flow rates when partially blinded by debris during operation. The screens would be regularly inspected for damage in-line with SSER's maintenance and inspection procedures.

During the pre-application engagement, and in the EIA, SSE have committed to undertaking sensitive design of the intake arrangement in co-operation with SEPA. Additional fish behavioural deterrents are proposed within the tailrace to minimise impacts on native fish species (through both the potential to entrain native fish species from Loch Lomond and transfer of fish INNS to Loch Sloy).

3 Impacts on the water environment from the proposed increase in the abstraction rate

The Sloy Hydro Scheme is currently permitted to abstract up to 21.1m³/s from Loch Lomond from Sloy Tailrace, it is anticipated that the proposed pumps would have a maximum capacity of ~36m³/s, however, in the CAR Variation, SSER would like to apply for 38m³/s to allow for optimisation during upcoming design phases.

At the currently permitted abstraction rate, 6 hours of pumping would lower Loch Lomond's surface level by approximately 6mm. At an abstraction rate of 38m³/s, 6 hours of pumping would lower Loch Lomond's surface level by approximately 11mm, this increased drawdown of approximately 5mm during a 6-hour pumping operation is not anticipated to have an impact on the aquatic environment.

The current operational range of Loch Sloy will not change as a result of converting the scheme to pumped storage hydro.

We welcome the opportunity to discuss the content of this memo with you further and look forward to arranging a meeting with you at your convenience.

Kind regards,


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SSE Renewables – Hydro Programmes
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Attachment: EIA Chapter 8 - Sloy Pumped Hydro Storage Scheme - Aquatic Ecology and Fish