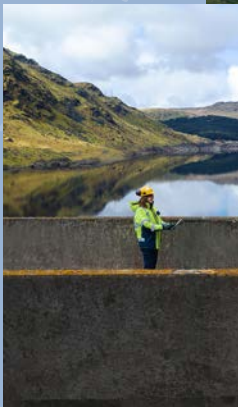
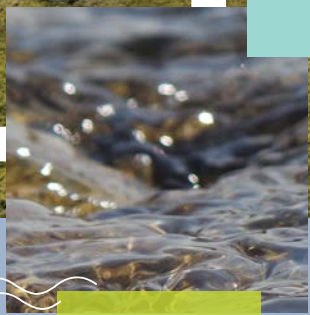
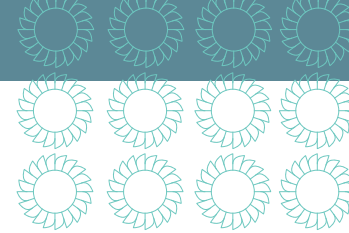


Sloy Pumped Storage Redevelopment







Who we are

About SSE Renewables

Part of the FTSE-listed SSE plc, SSE Renewables is a leading developer, operator, and owner of renewable energy across the UK and Ireland, with an operational portfolio of around 4GW of onshore wind, offshore wind, and hydro.

Our strategy is to drive the transition to a net zero future through the world-class development, construction, and operation of renewable power assets.

We operate the largest fleet of hydro-electric power assets across eight hydro schemes in Scotland. These include some of the most iconic power station sites constructed after the introduction of the 1943 Hydro Electric Development (Scotland) Act, which brought hydro-electric power to the Scottish glens 80 years ago.

Our hydro portfolio totals 1,459MW of installed capacity, including 300MW of pumped storage and 750MW of flexible hydro.



The story so far

Sloy hydro-electric scheme

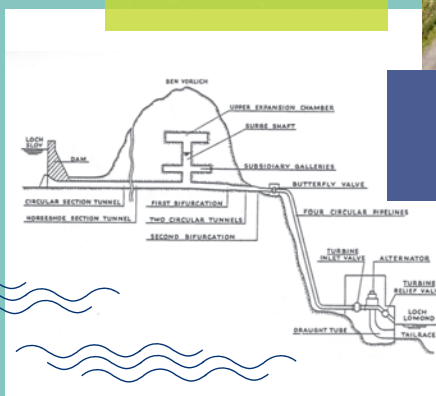
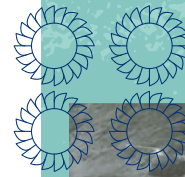
The Sloy hydro-electric scheme came into operation in 1950 and was a hugely ambitious engineering project at the time. The operational scheme has been recognised for its engineering and architectural importance and is Category A-Listed.

Now over 70 years since construction was completed, the above ground elements of the development have largely been absorbed into the surrounding landscape, and the main features of the lower works appear as distinctive structures.

The scheme makes use of the waters of Loch Sloy, the surface of which (since 1950) lies at 285m above sea level and the steep slope down to the shores of Loch Lomond, lies less than 10m above sea level but only 4km away from Sloy dam. The difference in height within a small horizontal distance offered ideal conditions for the development of the scheme.

From Loch Sloy the water is carried over 3km by a tunnel through Ben Vorlich, which towers 943m above Loch Lomond. The water then falls down the side of the mountain in four large high pressure steel pipelines to Sloy Power Station at Inveruglas bay on Loch Lomond. Inside the power station, four Francis turbines drive four vertical shaft generating sets. Energy is exported to the National Grid via the nearby Sloy substation.

With an installed capacity of 152.5 MW, Sloy is the UK's largest conventional hydroelectric power station. It currently generates around 130 million units of electricity in a year of average rainfall.

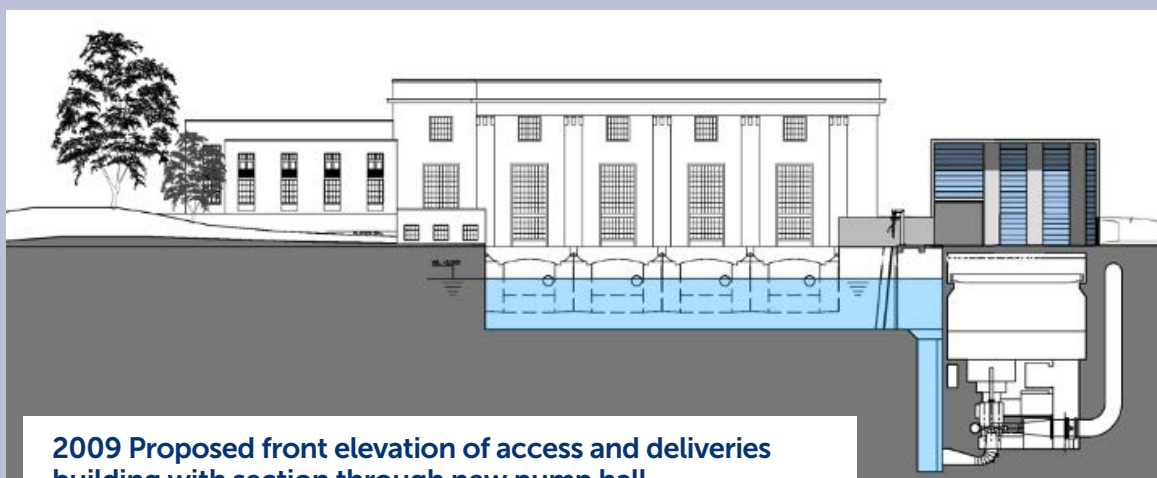


2009 Sloy pumped storage scheme

In September 2009, Scottish Government Ministers granted consent for a pumping station within the grounds of the existing power station, with subsequent extension to the section 36 consent granted until December 2018. However, due to a perceived lack of market at the time, the scheme was never built.

In recent years, there has been an increase in the development of flexible renewable schemes (principally wind farms) and as a result there is now a recognised, clear and urgent need for the development of pumped storage, to support the integration of renewable energy and maintain security of supply.

At SSE Renewables, we have reviewed our operational assets and still believe that the existing Sloy Power Station is ideally placed for an extension and conversion into a pumped storage scheme.



2009 Proposed front elevation of access and deliveries building with section through new pump hall



Architects render of 2009 proposals

What is Pumped Storage?

SSE and Hydro Energy

The construction of 54 power stations, 78 dams and over 300km of underground tunnels, beginning 80 years ago, brought electricity to Highland communities, transforming the way people lived and worked. Now, eight decades later, we still own and operate most of these sites, using 'Scotland's original source of renewable energy' to provide cost-effective, low-carbon flexibility to Britain's energy system.

Our hydro portfolio totals 1,459MW of installed capacity, including 300MW of pumped storage and 750MW of flexible hydro, producing over 3TWh of renewable energy annually – enough to typically power over 1 million Scottish and UK homes each year.

As Britain transitions to a renewables-led net zero energy system, we are actively seeking investment opportunities for hydro generation, including the construction of a new pumped storage scheme at Coire Glas in the Great Glen, repowering of existing hydro power plants, and adding pumping capabilities to existing stations. This way, energy can be discharged on those days when the wind doesn't blow, or the sun doesn't shine which will be critical to a renewables-led energy system in the UK.



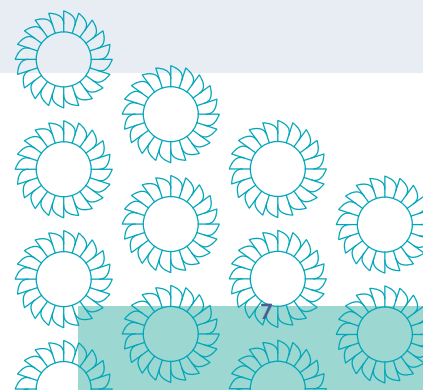
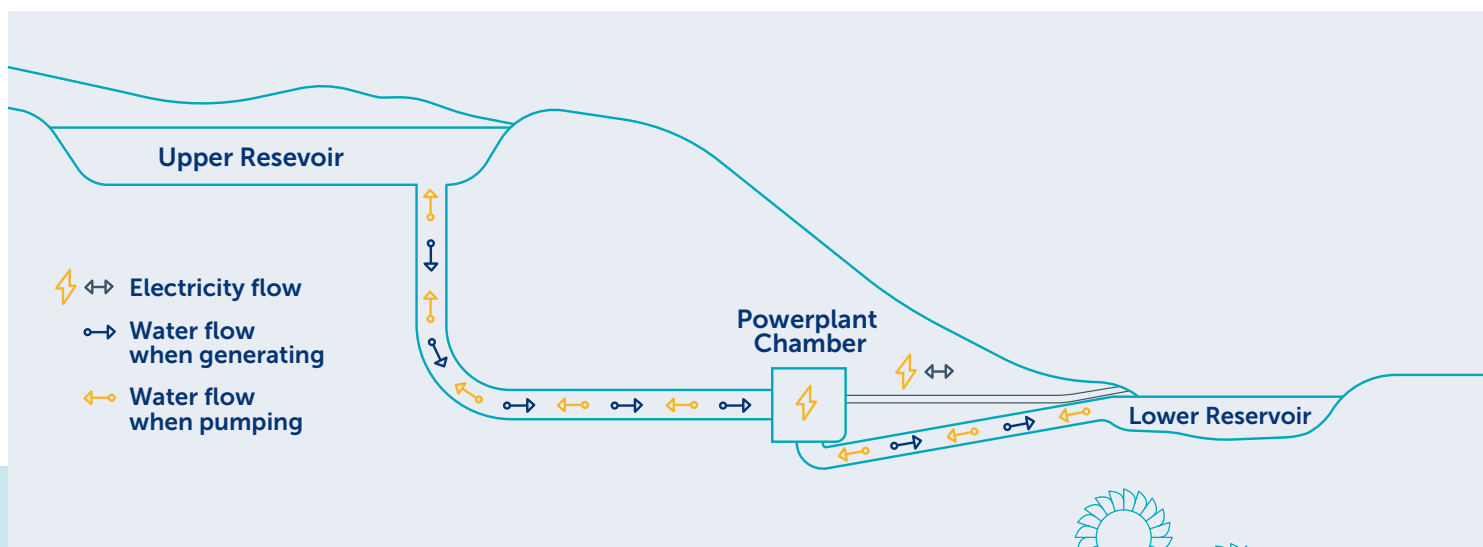
How does pumped storage work?

Pumped storage schemes have two reservoirs to hold the water, with one higher than the other. Traditionally, pumped storage has been used when there is high demand for electricity. However, as we move to an electricity system with a higher proportion of intermittent renewable generation such as onshore and offshore wind, pumped storage will have an important role to play in 'storing' the electricity from wind power when it is generating more electricity than is needed and then using this electricity to meet demand when it can't be supplied by wind power.

Pumped storage works when water is released from the higher reservoir to drive the turbines in the power station below it before being passed into the lower reservoir. Then, at times when there is cheap surplus electricity available, for example from wind farms, the electricity generators are switched to become massive motors, which pump water from the lower reservoir back up to the higher one, where it is stored until it is needed to meet the next peak in demand.

Pumped storage schemes give the operator even greater control over when the power station runs and can often respond very quickly to meet unexpected high demand for electricity. Typically, pumped storage schemes can be operating in full output in under two minutes when called on to do so. Foyers, owned by SSE Renewables, on the south shore of Loch Ness, is one of only four pumped storage schemes in the UK.

Alongside the site's proximity to a large lower reservoir in Loch Lomond, another key advantage of developing a pumped storage scheme at Sloy is the presence of the existing operational scheme which would require relatively minor modification to be converted to a pumped storage scheme.



The Proposed Scheme

We're proposing to convert the existing hydro-electric scheme at Sloy into a pumped storage scheme, by introducing new pumps located in the grounds of the existing asset, immediately north of the power station at Inveruglas on the shore of Loch Lomond.

The new pumps would enable water to be pumped through up to three of the existing four high pressure pipelines and tunnels from Loch Lomond to Loch Sloy during times of low demand (typically overnight) or oversupply (when there is too much renewable energy being generated).

The proposed development would enable Sloy to operate for longer periods of time, which would minimise the likelihood of renewable energy from other sources being constrained off the grid during times of low demand.

The development of pumped storage at Sloy would only require construction work to be carried out in the vicinity of the existing power station. No permanent new works would be required at Sloy Dam.



Deliveries and pump building

A new building is required to cover the pump well and house the overhead travelling crane, loading bay and electrical control systems.



Underground pump well

A new underground pump well would be required to house two pumps. This would link to the intake structure and would be up to 18m below the existing ground level.



Intake Structure

The intake structure would provide a water passage from Loch Lomond to the new pumps via the existing tailrace.



Tailrace

The existing tailrace spray reduction cover would be replaced with a new cover, designed to be more harmonious with the surrounding landscape.



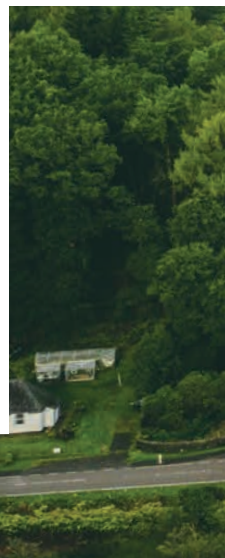
Buried Pipelines

New buried pipelines would take water from the pumps to connect into up to three of the four existing high-pressure pipelines.



Temporary Construction Compound

A temporary construction compound and vehicle holding area would be required in close proximity to the works during the construction activities.



Architectural Design Concept Optioneering

Page/Park Architects, an award-winning architectural practice based in Glasgow, were appointed to undertake a design concept optioneering exercise and the development of a preferred design concept for the building, to take forward to planning.

The concept for the primary, above-ground structure over the submerged pumps, has been derived from the language, rhythm and scale of the existing building. Imagined as a temple in the landscape, the new hall keys into the datum of the existing composition. A weighty plinth roots the building into the landscape. The plinth is topped by an arrangement of fine columns to maximise the transparency through the structure to the existing monument.



In essence, the new building is seen as an inversion of the monumental, existing pumping hall. It takes clues from what exists but by inverting the solid/void relationship a lightness and transparency emerges that enables the new temple-like extension to sit comfortably as an evolution and expansion of the existing composition. The building would be a celebration of the next generation of Scotland's commitment to renewable energy.



Environmental Impact Assessment and FAQs

Following submission of the Scoping Report in June 2023, the Scottish Government sought responses from the key relevant statutory and non-statutory consultees, to identify the issues to be assessed in the Environmental Impact Assessment (EIA).

Over the course of the last year, a number of environmental surveys and impact assessments have been undertaken by professionally qualified specialists to assess the potential effects of the proposed scheme. The results of these assessments will be reported within an EIA Report. The key aspects of the assessment activities are to assess and present the 'reasonable worst case scenario' for consideration in determination of the application.

What is being assessed?

- Landscape Character and Visual Amenity
- Ecology (terrestrial and aquatic)
- Ornithology
- Traffic, Access and Transport
- Cultural Heritage
- Soils, Geology and Water
- Land Use and Recreation
- Noise and Vibration

Consideration of technical feasibility and environmental constraints identified through extensive and ongoing survey efforts, in combination with consultation with various statutory and non-statutory environmental agencies and local communities, has informed the design of the proposed development.

This will be presented in the Section 36 submission to be made to the Scottish Ministers in early 2024. At this point the proposed development will be open to public consultation and comment from a wide range of consultees, with the final decision made by Scottish Ministers.

FAQ

How long will the scheme take to construct?

It is anticipated the construction period would last up to two years.

How will the scheme affect traffic and recreational users in the area?

The main transport impacts would be associated with the movement of general Heavy Goods Vehicles (HGV) traffic travelling to and from site during the construction phase of the development.

We remain committed to engaging proactively with local communities to incorporate feedback on traffic and transport impacts and potential measures to minimise disruption in the local area.

Standard measures to minimise impact include:

- The production of a Construction Traffic Management Plan to carefully manage traffic movements in and

out of the site. This includes the responsible management of deliveries to site.

- The design of suitable access arrangements with full consideration given to the road safety of all users.

What benefits will the scheme provide to the local communities?

We are committed to supporting the communities close to our developments. We believe in making a positive change to the communities in which we operate, and we believe local people should be at the heart of this investment.

It is usual for a community benefit programme to be available during the construction phase of a project, but we would work on developing the programme based on local need. This would provide long-lasting benefits to the local community during the construction period and beyond.

Will there be an impact on Loch Lomond's water levels?

Sloy Pumped Storage will have a minimal impact on the water levels in Loch Lomond. It is anticipated that the scheme will pump for periods of between one and ten hours, with the water level being lowered by **less than 2cm** during a full ten-hour pumping period.

How will you keep the local community informed?

Our stakeholder engagement team will keep key local stakeholders informed at all stages of the project, with communications also issued via local and digital media channels. If you would like to receive stakeholder updates directly, please let us know and we will add you to the distribution list.

Proposed timeline

○ Pre-Planning

- Scoping report submission: **June 2023**
- Consultee and public responses to scoping report and early consultation: **July / August 2023**
- Scoping opinion from the Scottish Government: **October 2023**
- Completion of environmental survey work and preparation of the EIA report: **Through to End 2023**
- Follow up local public exhibition: **November 2023**

○ Submission of a section 36 application to the Scottish Government: **Early 2024**

- An application is submitted to the Scottish Government accompanied by a comprehensive EIA report showing the results of studies undertaken. This is publicly available information. Interested parties and statutory consultees such as the Loch Lomond and the Trossachs National Park Authority and residents can formally comment on the application.

○ Anticipated Scottish Government decision date: **Early 2025**

- If approved, SSE Renewables and the appointed contractor would look to discharge any pre-construction conditions of the consent.

○ Construction – **Early 2026**

- If approved, construction would typically take two years to complete.
- SSE Renewables will engage with Scottish and Southern Electricity Networks (SSEN) Transmission regarding their construction programme for the Sloy Power Station Transformer Replacement Project, which is proposed in the vicinity of the pumped storage development, to avoid any conflict resulting from an overlap between the two construction projects and minimise disruption to the local community.

○ Operational – **Early 2028**

Exhibitions like this are a very important part of the development process for us. The purpose of this exhibition is to engage with the local community and interested parties about our proposals and the work we have undertaken so far. This is a chance for us to share our plans and is an opportunity for people to raise questions, concerns, ideas or comments that can be considered as part of the development process.

For more information, please visit our project website: sserenewables.com/hydro/sloy-awe/

Keeping In Touch

Please take the opportunity at this exhibition to speak to our project team today and ask questions about the proposal. We would welcome the submission of comments in respect of the proposal. If you have a few minutes, please complete the exhibition feedback form.

Alternatively, please contact our Head of Hydro Stakeholder Engagement, Georgina Wardrop, at:

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Address: One Waterloo Street, Glasgow, G2 6AY.



For more visit
sserenewables.com

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