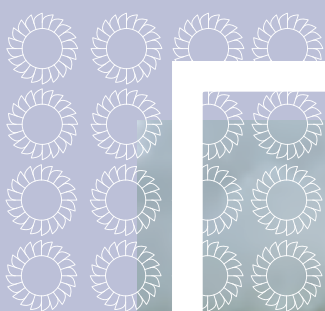
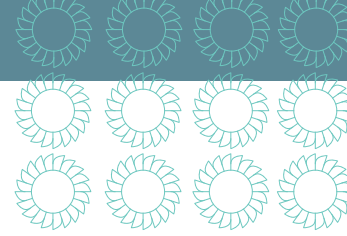


Sloy Pumped Storage Redevelopment







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

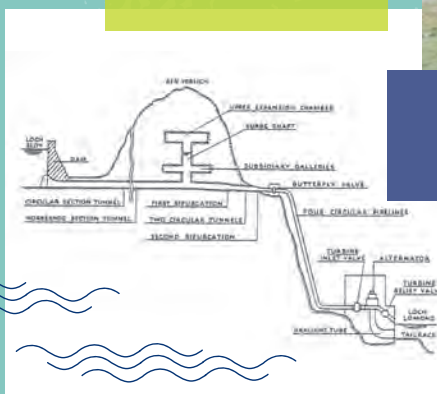
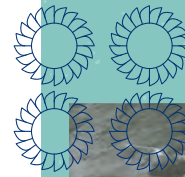
The Sloy hydro-electric scheme came into operation in 1950 and was a hugely ambitious engineering project at the time. The operational scheme has been recognised for its engineering and architectural importance and is Category A-Listed.

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.

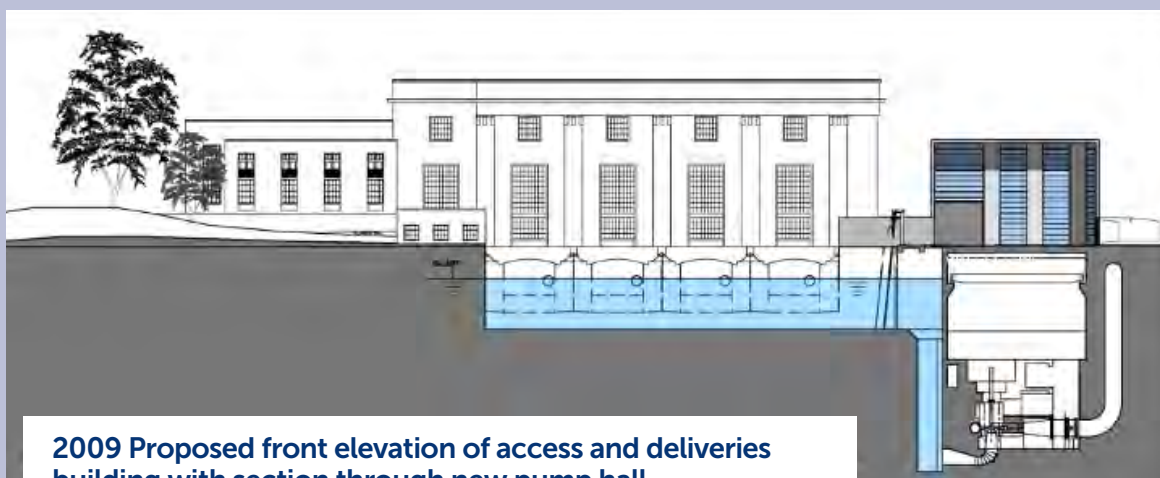


2009 Sloy pumped storage scheme

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, resulted in affordable electricity for 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.



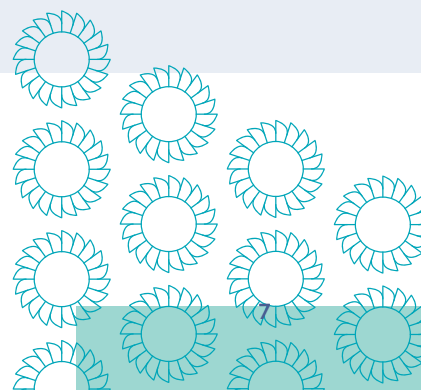
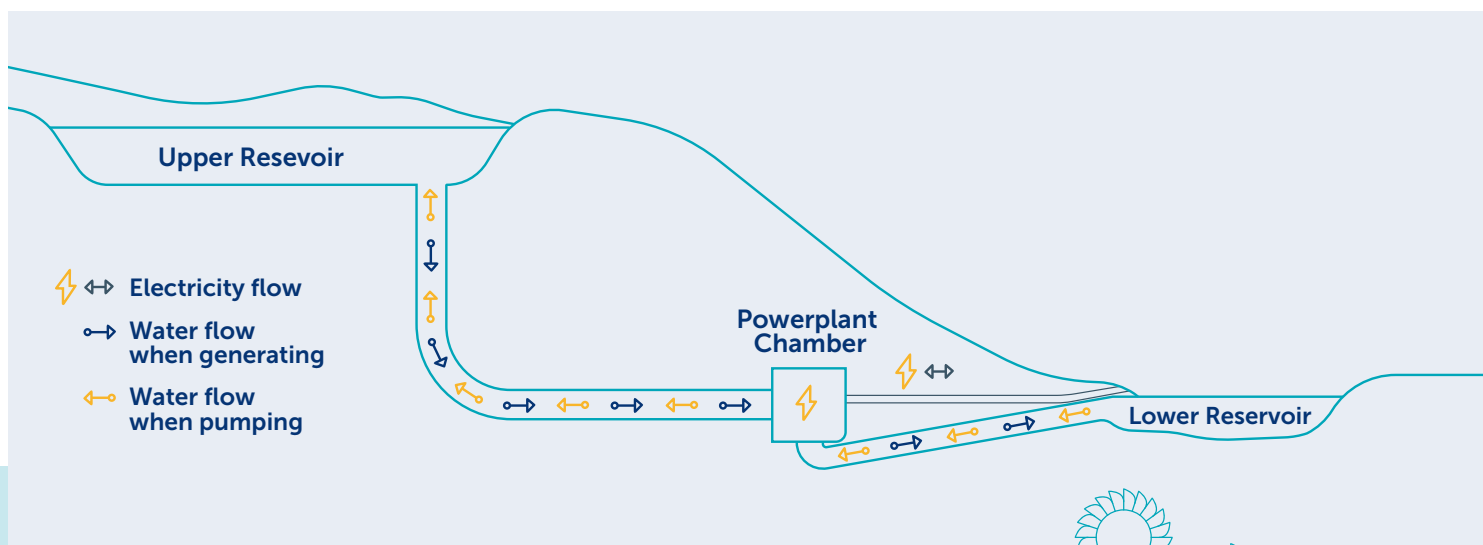
How does pumped storage work?

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 grounds of the existing power station. No permanent new works would be required at Sloy Dam or outside of the existing station boundary.



Building

A new above ground structure would be required which would contain a main hall with vehicular access, laydown areas, an overhead travelling crane, electrical switchgear and control systems.



Underground Pump Hall and Pumps

A new underground pump hall would be required to house two pumps. This would link to the intake structure and would be approximately 20m below the existing ground level.



Intake Structure and Tailrace

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



Buried Pipeline

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

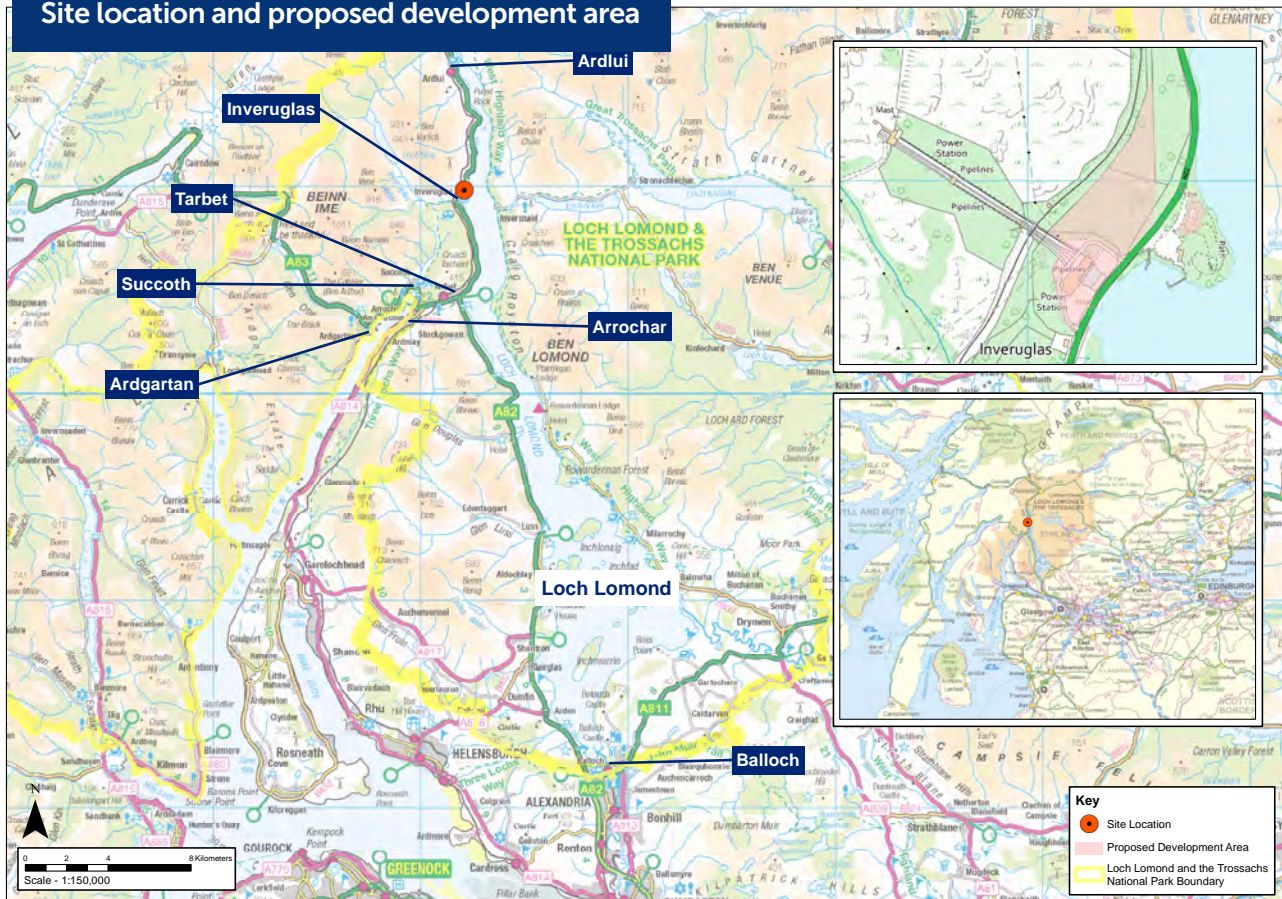


Temporary Construction Compound

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



Site location and proposed development area



Scoping Opinion

The Scottish Government is currently seeking responses from various statutory and non-statutory consultees to the Scoping Report submitted by SSE Renewables in June 2023. From this consultation, the Scottish Government will form a Scoping Opinion, and this will identify issues that should be assessed in the Environmental Impact Assessment in support of a section 36 application to the Scottish Ministers.

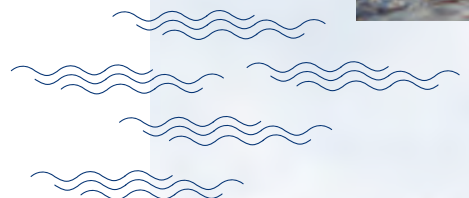
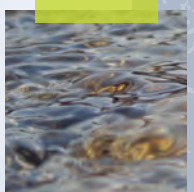
Environmental Impact Assessment (EIA)

On receipt of the Scoping Opinion, an impact assessment will be undertaken by professionally qualified specialists to assess the potential effects of the proposed scheme. A number of environmental surveys are already underway.

The following topic areas are expected to be covered:

- Landscape Character and Visual Amenity
- Terrestrial Ecology (Habitats and Animals)
- Ornithology
- Fish and other Aquatic Ecology
- Noise
- Traffic and Transport
- Cultural Heritage
- Land Use and Recreation

The outcome of these surveys will be detailed within an EIA Report which will accompany the section 36 application. On submission of the application, consultees and the wider public will be able to formally comment on the finalised proposals.





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: August 2023
- Completion of environmental survey work and preparation of the EIA report: Through to October 2023
- Follow up local public exhibition: October 2023

○ Submission of a section 36 application to the Scottish Government: End 2023 / 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: End 2024

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

○ Construction – End 2025

- 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 a replacement transformers project, which is proposed in the vicinity of the proposed development, to avoid any conflict resulting from an overlap between the two construction projects and minimise disruption to the local community.

○ Operational – Late 2027

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.

We will be returning to talk to you in October 2023 to update you on our progress. In the meantime, we will be sharing updated information on the 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:

Email: Georgina.Wardrop@sse.com

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



For more visit
sserenewables.com

Published July 2023

SSE Renewables
Registered in United Kingdom No: SC435847

Registered Office:
Inveralmond House, 200 Dunkeld Road, Perth, PH1 3AQ.

sserenewables.com

Follow us on LinkedIn and Twitter

