

Welcome

Drax Hydro Limited is pleased to share the advanced plans for the expansion of Cruachan Power Station. In July 2021 as part of the first public consultation, we introduced the concept of the scheme and the broad parameters of the project. Further information and details were exhibited at the second round of public consultation events in November and December 2021. We received valuable input from interested parties and have sought to answer some of the questions raised in this final consultation. Plans have been developing and the engineering design has been refined.

Changes since December Consultation

- The Upper Control Works at Cruachan reservoir have been revised to reduce the impact on the hillside so that less rock excavation is required and visual impact is minimised. Recreational access will also be maintained for walkers, with temporary diversions as required.
- Cruachan Visitor Centre car park confirmed as an alternative parking location for recreational users during the temporary diversion of A85 into the existing layby.
- Location of Main Access Tunnel and Lower Intake Structure swapped to facilitate ease of access to the Main Access Tunnel, allow easier connectivity between the power stations and simplify the quayside structure.
- Firmed up proposed areas of works and reduced the red line site boundary for development.

Continued commitments

- No spoil will be removed from the upper reservoir and dam area via St Conan's Road.
- The A85 will no longer be diverted onto a new quayside in Loch Awe, instead there will be a temporary diversion into the existing lay-by at Falls of Cruachan Railway Station ensuring the A85 remains open to vehicles.
- Maintenance of recreational access for walkers to all existing areas subject to localised diversions only.

Why Pumped Storage Hydro?

Pumped hydro storage stations have never been more important to the country's decarbonisation. Drax believe that flexible and responsive power generation and storage capacity from pumped hydro projects like Cruachan are essential for delivering the Scottish Government's net zero by 2045 target.

With no new long-duration energy storage projects built in the UK since the 1980s, enough wind power to supply more than a million homes was wasted in 2020 as excess renewable power could not be stored sufficiently. Pumped storage hydro technologies help stop the excess renewable power going to waste by storing it and making it available quickly when it is needed.

How does Pumped Storage work?

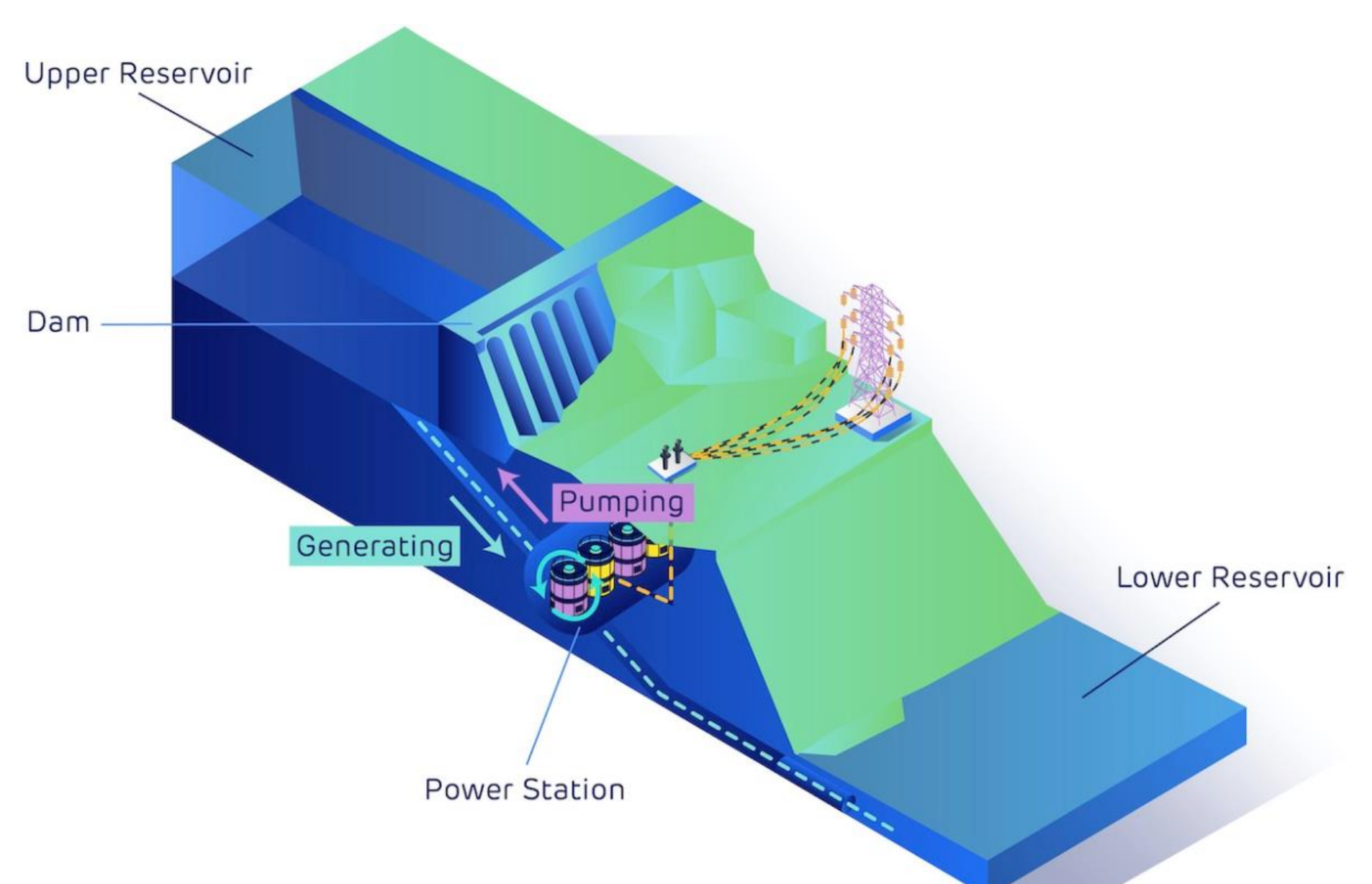
Water released from the upper reservoir (Cruachan) flows through a series of waterways then through a turbine and into the lower reservoir (Loch Awe). The flow of water rotates the turbine which in turn rotates a generator to produce electricity.

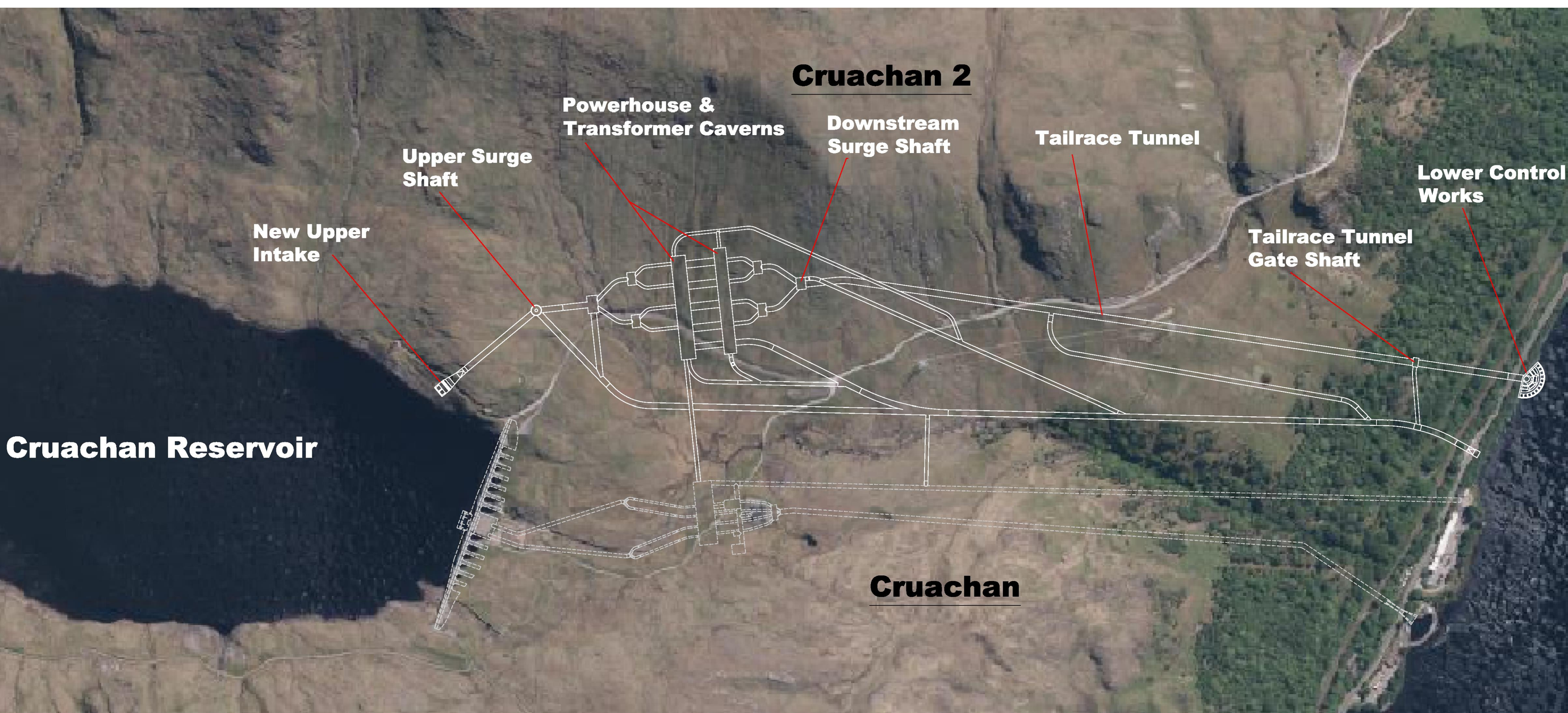
For pumping, the process is reversed, with the turbines operating as pumps. Water is drawn from Loch Awe, which is then pumped up to the upper reservoir and stored for later use. Pumped storage provides extremely quick back-up during periods of excess demand by maintaining stability on the National Grid.

Cruachan Expansion – A 'National Development'

The expansion of Cruachan is identified in National Planning Framework 3 (NPF3) as a 'National Development' and this status was carried forward in the draft NPF4 published in November 2021.

Draft NPF4 describes Cruachan as a 'Nationally important example of a pumped storage facility with significant potential for enhanced capacity that could create significant jobs in a rural location'.





The Proposed Scheme

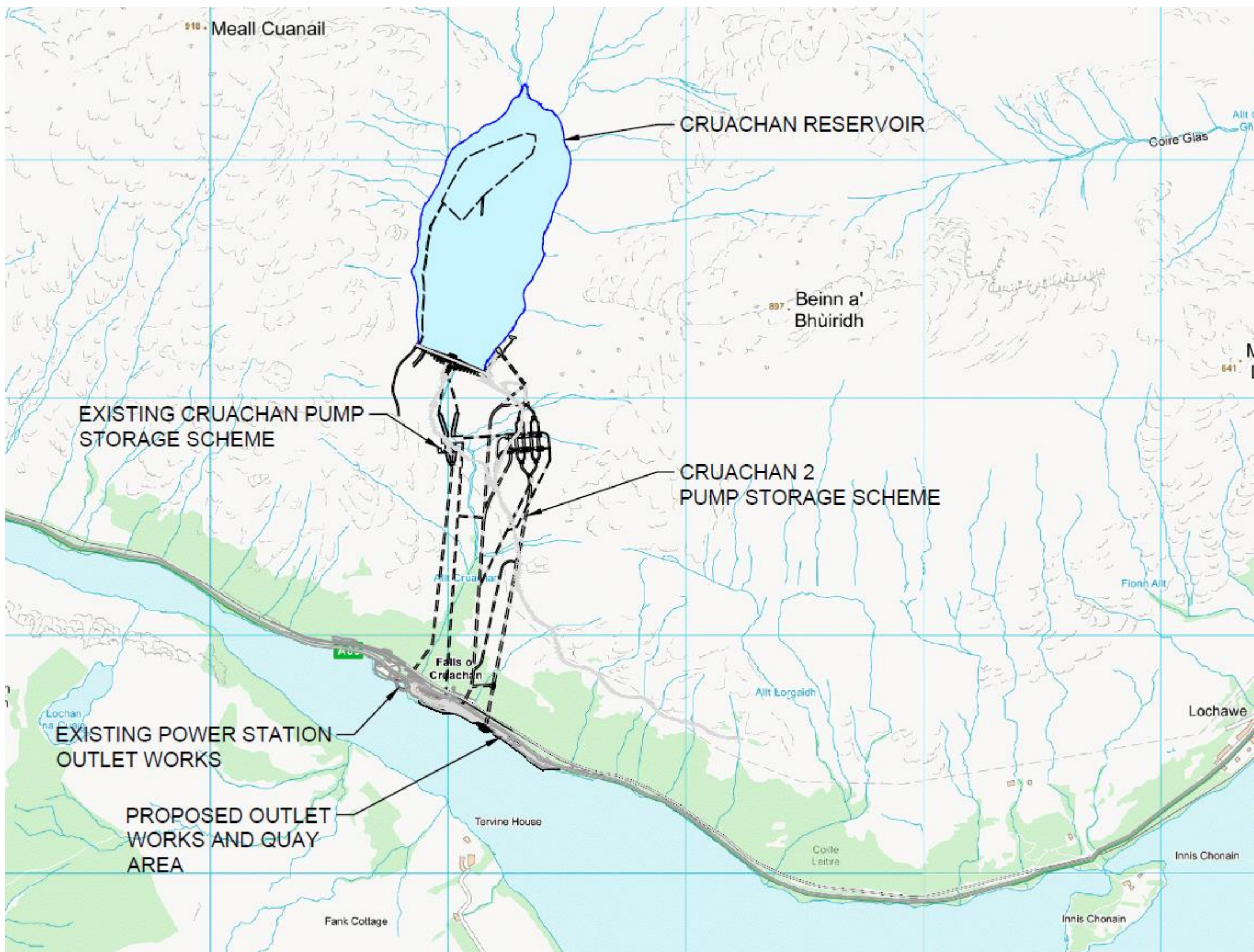
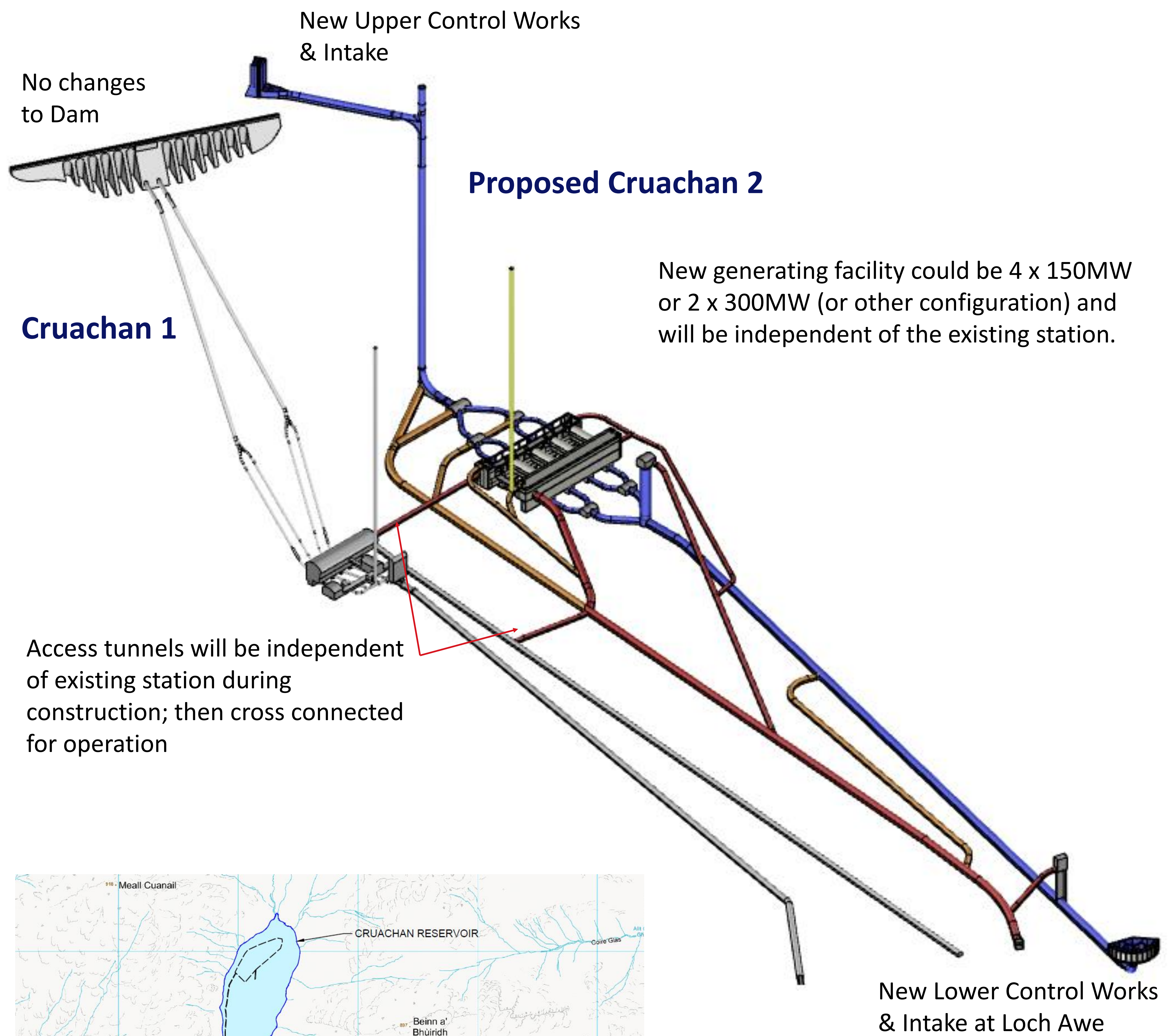
The proposed development will comprise the following main elements:

- **Upper Control Works** – An additional intake structure including tower, screens, gate and gate shaft located within or adjacent to Cruachan Reservoir to direct water to a new headrace tunnel, surge shaft and underground waterway system.
- **Upper Construction Compound** – Temporary site in the vicinity of Cruachan Dam.
- **Underground Waterway System** – A series of underground shafts and tunnels carrying water between the upper reservoir and lower reservoir through the underground cavern powerhouse.
- **Cavern Powerhouse** – A series of underground caverns containing reversible pump-turbines and motor-generators together with associated equipment such as transformers and switchgear. The construction process will require various interconnecting tunnels to allow construction.
- **Grid Connection** – Cables will surface adjacent to the 275kV power lines that run from Cruachan to Dalmally. The electricity generated from the new power station will connect on to these circuits at or close to the existing electrical compound. No new power lines are required.
- **Ventilation Shaft** - A ventilation shaft will be required to circulate fresh air through the underground access tunnel and cavern power station complex.
- **Lower Control Works** – Comprising two screened inlet / outlet structures and stop logs positioned in Loch Awe at the end of the tailrace tunnel below the minimum water level. These structures would channel water in and out of Loch Awe.
- **Quayside** - Constructed on the shore of Loch Awe to facilitate the construction and operation of the development, and the temporary storage of tunnel spoil prior to its off-site removal.
- **Administration Building** – Above ground administration and workshop buildings required for day to day operational and maintenance tasks – located on the quayside.
- **Access Tunnels** – A main access tunnel would be provided for accessing the underground power plant, close to the shore of Loch Awe. This will cross connect to the existing Cruachan 1 power plant to allow personnel to easily move between the plants and provide a further means of access and egress.
- **Existing Service Roads** – These will be used as far as possible to facilitate the long-term operation of the generation station. Some upgrades may be required to facilitate access by heavy plant and machinery including localised widening of the dam access road to create passing places.

Cruachan Expansion Project

Consultation
March 2022

The Proposed Scheme

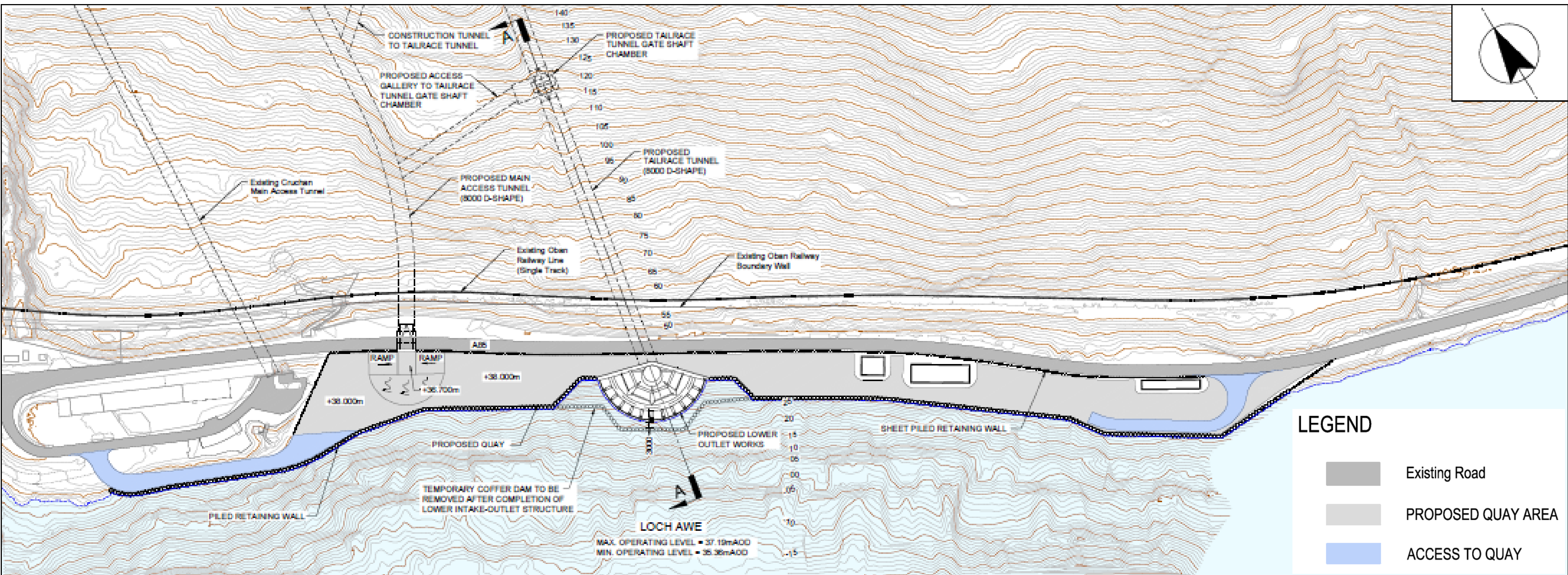


Proposed scheme shown in context

Cruachan Expansion Project

Lower Control Works

- New Lower Inlet/Outlet structure.
- The lower works are proposed to be located to the east of the existing Cruachan access tunnel on the shore of Loch Awe.
- To facilitate the construction of the new outlet structure in Loch Awe and the access tunnel it is proposed that a new quay is constructed along the shore to provide a working platform for the project.
- Location of Main Access Tunnel and Lower Intake Structure swapped to facilitate ease of access to Main Access Tunnel and introduce simplified quayside structure.
- Stantec has prepared high level concept designs to show how the infrastructure can be constructed within the constrained site whilst keeping impacts on the existing road and rail networks as low as possible.



Proposed layout of Lower Control Works

Road Works

A85 at Lower Control Works

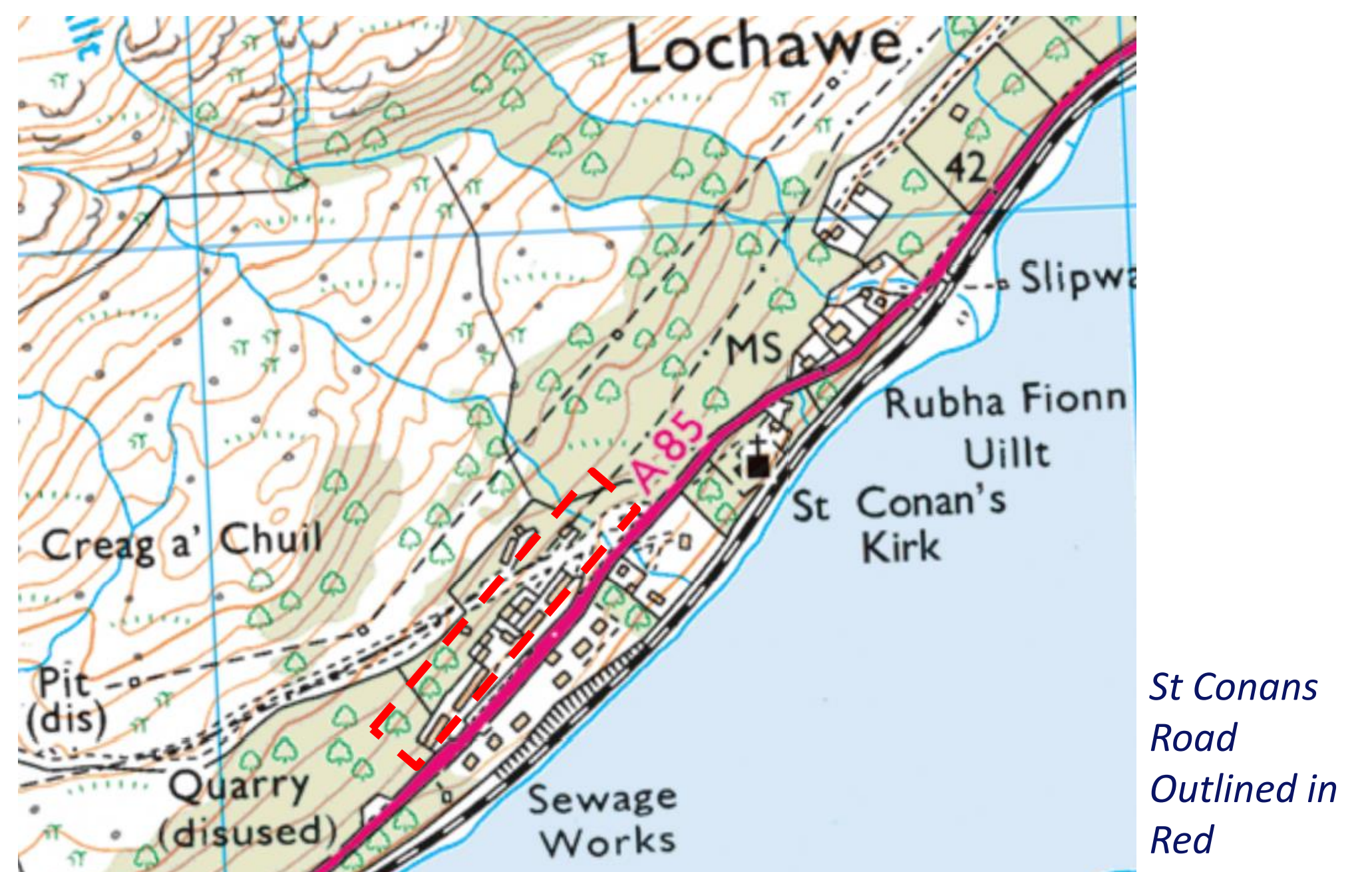


Proposed diversion of A85 into existing layby to facilitate construction of Main Access Tunnel

- Previous proposals for the A85 recommended a diversionary route of the road onto a jetty to facilitate the construction of the access tunnel under the carriageway.
- This option has been ruled out and an alternative access tunnel location has been considered below the A85 at the existing layby. This greatly reduces the amount of time that the A85 would need to be under diversion and signal control.
- The diversion will be completed as a first phase of works to allow the construction of a section of the new quay.
- This wider section of the A85 is located at the existing parking lay-by adjacent to the pedestrian access to Falls of Cruachan Railway Station. Alternative parking will be provided at the Cruachan Visitor Centre during this construction phase and the parking area will be reinstated.

St Conan's Road to Dam Access Road

- The existing track is approximately 4650m from the upper works area to the junction with the A85. Design work is ongoing at this time to identify a series of upgrades to strengthen the existing road, widen it to provide a minimum width of 4.8m (where practical) and where possible to form HGV passing places.



St Conans Road Outlined in Red

- Construction traffic movements at the junction of St Conan's Road and the A85 are expected to be well below the threshold that would necessitate an upgrade to the junction e.g. the installation of a right turning lane.
- Work is ongoing with respect to identifying abnormal loads at this junction. These will be identified in a Transport Assessment, however at this time it is not anticipated that upgrades to the junction will be required.

Cruachan Expansion Project

Consultation
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Upper Control Works & Grid Connection



Cruachan as Existing



Cruachan 2 Intake

- A new intake for the Cruachan Expansion project is proposed within the upper reservoir.
- The design of this area has been progressed to allow the works to be constructed with minimal outage time for the existing Cruachan Power Station.
- This has meant moving construction works eastwards to allow the construction to take place behind a coffer dam, rather than requiring the reservoir to be drained for the duration of these construction activities at the upper reservoir.
- The Upper Control Works have been revised since December to decrease the impact on the hillside so that less rock excavation is required and visual impact is minimised.
- The visualisations show the location of the new upper control works and provide indicative images of the new intake.

Cruachan 2 Grid Connection

- The grid connection for Cruachan 2 is expected to use the same connection point as Cruachan 1 at the existing electrical compound in front of the Dam.
- **No new overhead lines are proposed.**

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Principal Environmental Effects

Due to the nature and scale of the Cruachan expansion, the project is subject to an Environmental Impact Assessment (EIA) which has been scoped with consultees to identify the likely environmental effects and make sure appropriate mitigation and protections are in place.

Construction Phase

Recreational Access

- Existing access routes will be maintained to protect local public rights of way. In limited circumstances, localised diversions may be put in place around construction working sites.
- The Cruachan Visitor Centre Car Park will be available as an alternative parking location while the Falls of Cruachan lay-by is used to divert the A85 during construction.

Noise

- Noise surveys were undertaken in December to determine background noise levels and set appropriate construction noise limits. The assessment of the proposed development is now underway.
- A Construction Environment Management Plan (CEMP) will outline noise mitigation measures and management practices to limit noise impacts during the construction phase. Example measures include:
 - Locating noisy plant and machinery as far away as possible from neighbours;
 - Selecting quiet or low noise equipment;
 - Using acoustic screens and enclosures.

Spoil Management

- Spoil re-use on site will be prioritised. Potential uses include road and footpath improvements and for use in concrete to line tunnels and waterways.
- Work is also ongoing to identify local sites to re-use spoil generated from the project. Spoil material will be stored at appropriate locations on site to allow a coordinated removal strategy and to minimise traffic movements.
- A Construction Environment Management Plan (CEMP) will be prepared to mitigate and limit any run-off/sedimentation into Loch Awe.

Traffic

- Removal and movement of spoil material will be achieved via the existing road network.
- St Conan's Road and the existing access road to the dam will be upgraded for construction traffic (localised widening, strengthening and passing places only). This route will not be used for spoil removal.
- Options to mitigate traffic related impacts are being explored at present and include the timing of removals and re-using the spoil material at local sites.
- An appropriate location for a contractors compound will be identified to allow workers to travel to and from the site sustainably throughout the construction of the project (e.g. mini buses to limit impacts on the local road network as far as possible).

Ecology

- A significant number of surveys have been undertaken across the project site, including; golden eagle, otter, pine marten, red squirrel, bats, badger and fish. Presence of red squirrel, otters, badger and pine marten have been recorded from surveys undertaken to date.
- Mitigation will ensure these populations are appropriately protected during construction, and compensation habitats will be provided for any habitats permanently lost.
- The protected areas and ecological constraints across the site will be mapped in the EIA.
- We are working with NatureScot and Argyll & Bute Council to ensure the protection of species and habitats across the project site and wider surrounding area.

Temporary Works



During construction there will be areas required for storage of equipment and materials, carrying out construction tasks, contractor offices and staff welfare facilities.

Likely working land requirements include:

- General storage
- Mechanical & Electrical large items storage
- Administration office
- Small canteen
- Temporary building for storage of sensitive equipment
- Works set up area
- Contractors car parking



★ Areas under consideration for temporary works (subject to further evaluation and suitability)

Principal Environmental Effects

Operational Phase

It is anticipated that there will be very limited environmental effects once operational. The project will operate in a similar way to Cruachan 1.

Recreational Access

- An Access Management Plan will be produced which will ensure access remains to established walking routes and will detail where any re-routing and path improvements are required.
- The Falls of Cruachan lay-by will be improved and will revert back to parking following the temporary diversion of the A85.

Water Levels

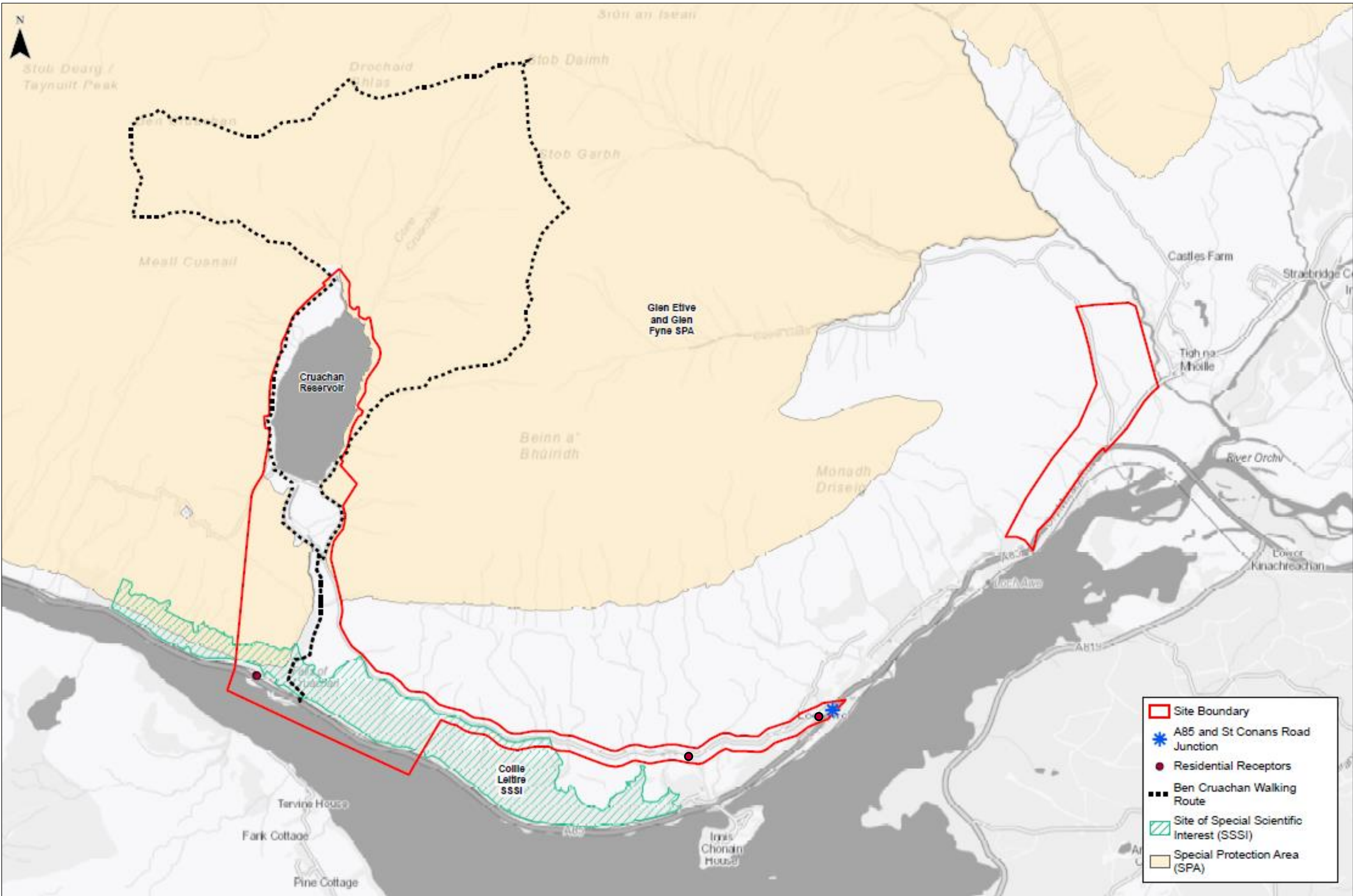
- Extensive studies have been conducted to predict how the operational phase will affect water levels in Loch Awe. Findings highlight that the proposed development would not have any likely significant effects on water levels or the hydrological regime of Loch Awe or Cruachan Reservoir.

Traffic

- As the proposed development will create an additional 5 to 10 operational staff above existing levels at Cruachan 1, any potential operational effects on traffic flow will be minimal.

Energy generation

- The 600MW expansion of Cruachan will add enough generation capacity to power nearly 1,000,000 homes.



Principal Environmental Constraints Plan

Exhibitions such as this are an important part of the development process for us, helping us to engage with the local community and interested parties about our proposals and work we have undertaken so far and will be undertaking before an application is submitted to the Scottish Government in later this year.

The exhibition 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. Now that you’ve seen the proposals, we’d be grateful if you can share your thoughts with us. You can do this in any of the following ways:

Complete a Feedback Form:
Available from the team today or at
<https://www.cruachanexpansion.com/>

Email:
getintouch@cruachanexpansion.com

Writing to:
Stantec, 5th Floor, Lomond House, 9
George Square
Glasgow, G2 1DY

Comments should be submitted by:
3rd April 2022

What Happens Next?

Section 36 Application

In Scotland, any proposal to construct, extend or operate an onshore generating station requires the consent of Scottish Ministers under section 36 of the Electricity Act, this applies for the proposal to expand Cruachan. Following this final round of consultation, the design proposals will be finalised and the application will be prepared and submitted to the Energy Consents Unit for determination by Scottish Ministers.

When the application is submitted, a notice will be published in The Oban Times, the Press and Journal, national papers and the Edinburgh Gazette. A notice will also be added to the project website www.cruachanexpansion.com where all documents will be available for viewing. The public will then be able to comment on the finalised proposals. As the Local Planning Authority, Argyll and Bute Council will be consulted. NatureScot, SEPA, Historic Environment Scotland and any other relevant public bodies with specific environmental responsibilities or local and regional interests who the Scottish Ministers consider likely to have an interest will also be consulted.

The application will be accompanied by an Environmental Impact Assessment (EIA) Report which will detail the outcome of the surveys and impact assessments which have been undertaken by professionally qualified specialists. The following topics will be covered:

- Landscape Character and Visual Amenity;
 - Terrestrial Ecology (Habitats and Animals);
 - Ornithology;
 - Fish and other Aquatic Ecology;
 - Water, Geology and Soils;
- Noise and Air Quality;
 - Cultural Heritage;
 - Socio-Economics;
 - Land Use and Recreation; and
 - Traffic and Transport.

Planning Timeline

