

EARBA PUMPED STORAGE HYDRO SCHEME

About Gilkes

Gilkes Energy Ltd (GEL) specialises in the development of hydro power projects in the UK. Over the last 14 years we have developed 17 hydro projects in the range 500kW to 5MW. In 2018 we moved our focus to Pumped Storage Hydro (PSH), reflecting the fact that the UK needs very significant amounts of electricity storage to reach the Government's Net Zero targets.



Purpose of Exhibition

This is the final consultation event prior to submitting a planning application.

This pre-application public exhibition has been arranged to:

- Introduce the Earba Pumped Storage Hydro Scheme
- Provide details of the proposed project and how it would work
- Explain some of the environmental effects of the scheme and their mitigation
- Show images of what the development would look like, and
- To provide details of the project timeline.



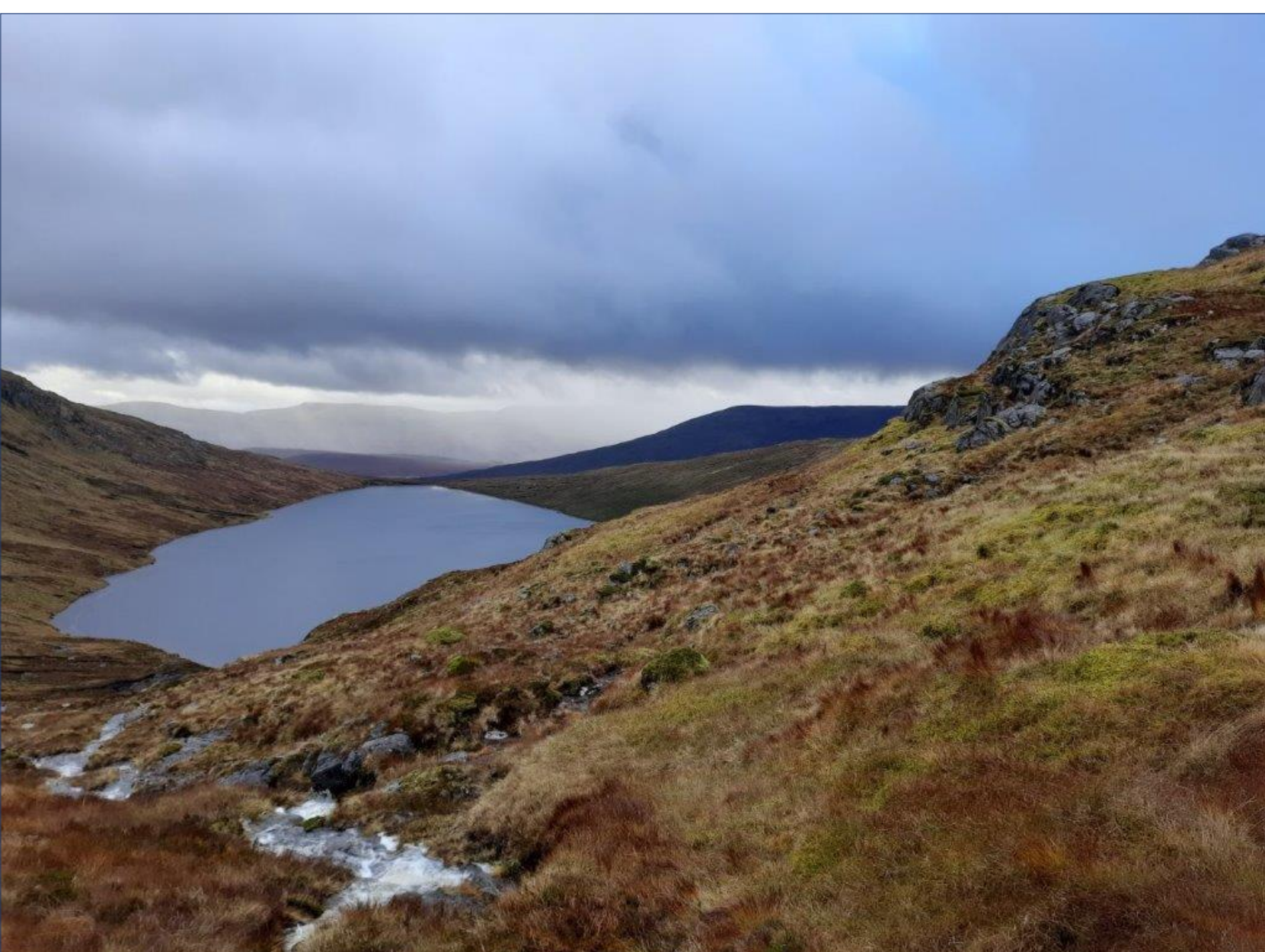
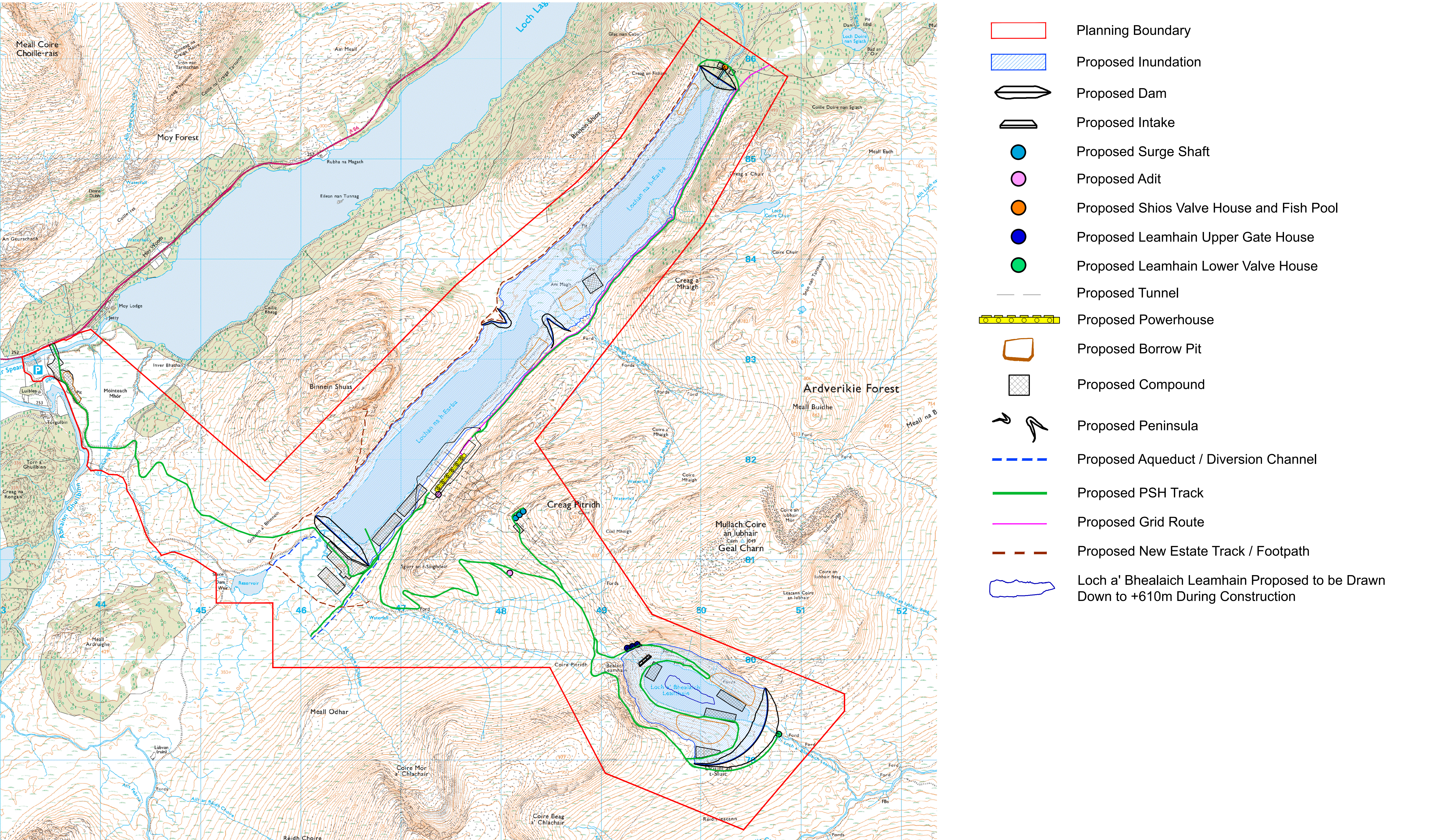
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The Site

The Proposed Development is located on Ardverikie Estate, approximately midway between Newtonmore and Spean Bridge, and would operate by transferring water between a lower reservoir, Lochan na h-Earba and an upper reservoir, Loch a' Bhealaich Leamhain.

Lochan na h-Earba sits within a narrow glen, and currently consists of two lochs which are joined by a small watercourse. This loch is already a modified hydro reservoir, controlled by a weir / dam and hydro intake at the northern end. The 1MW hydro it feeds is operated by Ardverikie Estate, with an overhead line from the hydro powerhouse near the Ardverikie House to Dalwhinnie. Pattack Hydro, operated by Gilkes Energy, is located to the east and shares this export line to Dalwhinnie. A number of other existing hydro developments can also be found in the area.

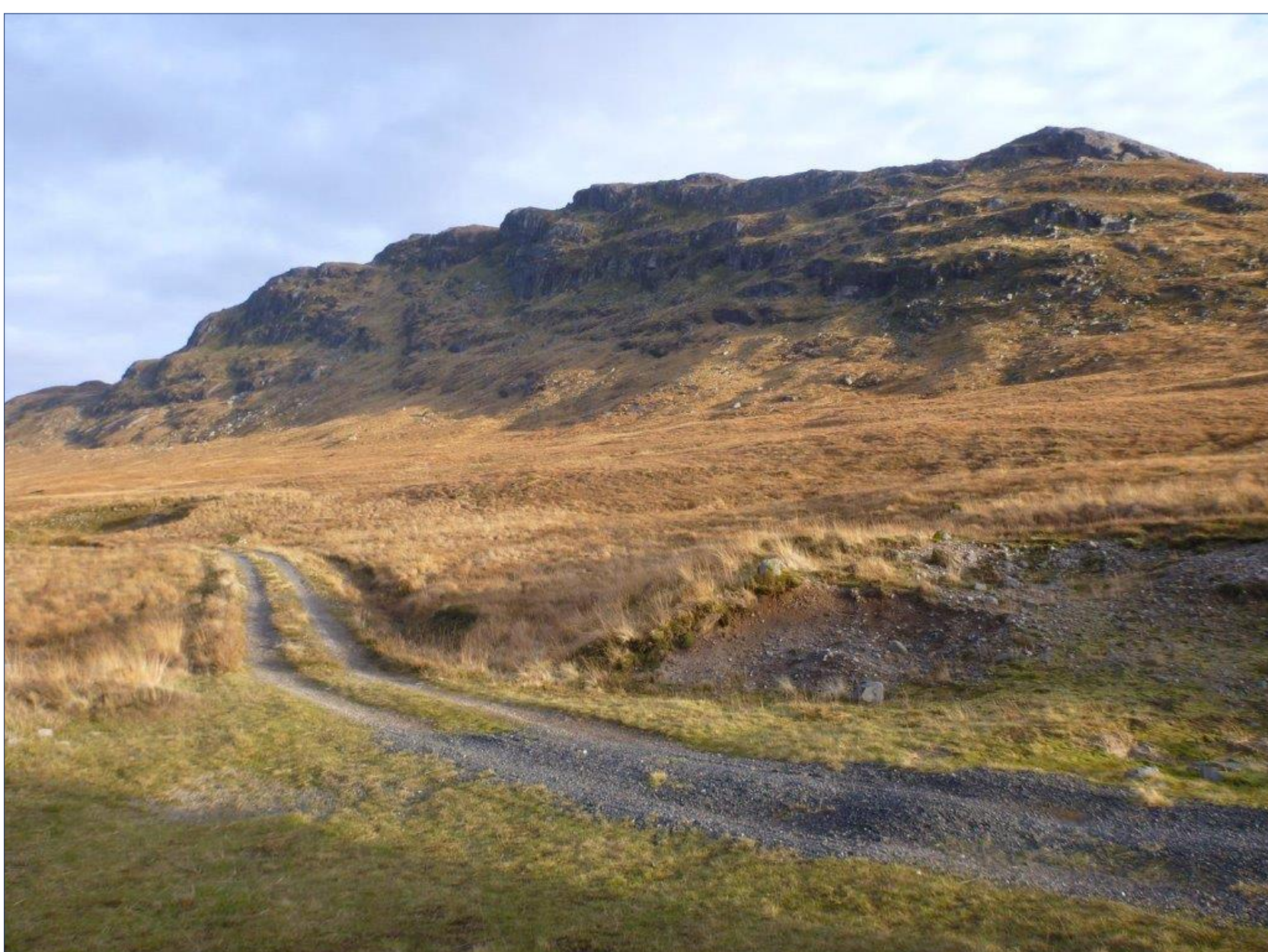
Loch a' Bhealaich Leamhain is a smaller lochan located south-east of Lochan na h-Earba within an area of upland moorland, just south of the summit of Geal Charn.



The upper reservoir area at Loch a' Bhealaich Leamhain



Lochan na h'Earba



Powerhouse Area



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The Proposed Development

The scheme would operate by transferring water between a lower reservoir, Lochan na h-Earba and an upper reservoir, Loch a' Bhealaich Leamhain. The maximum water level of these existing lochs would be raised by constructing dams to increase their natural storage capacity. The reservoirs would be connected by an underground waterway system including two headrace tunnels.

A powerhouse will be constructed on the shore of Loch Earba which will extend deep underground. The turbines will be located at the bottom of the powerhouse shaft and will generate electricity in times of national demand or pump water for energy storage in times when there is surplus electricity on the national grid.



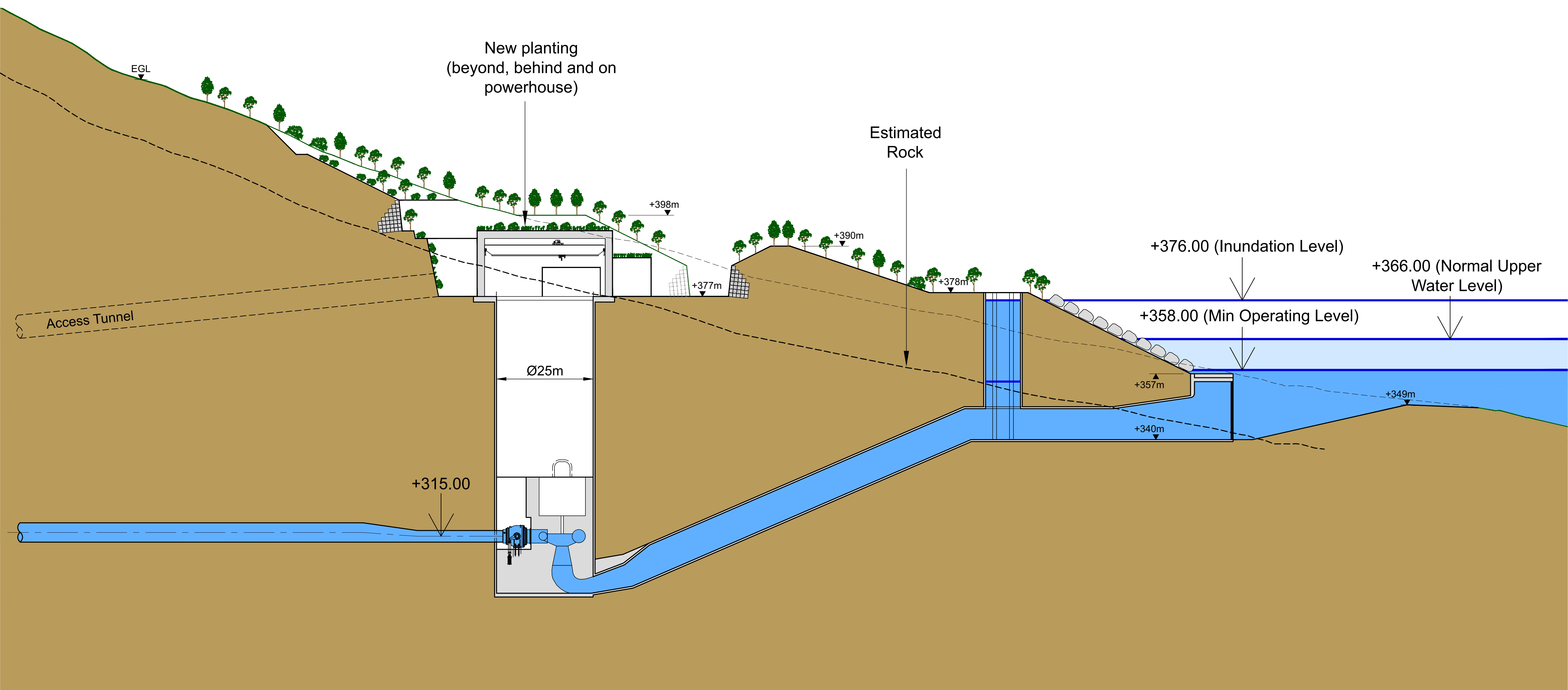
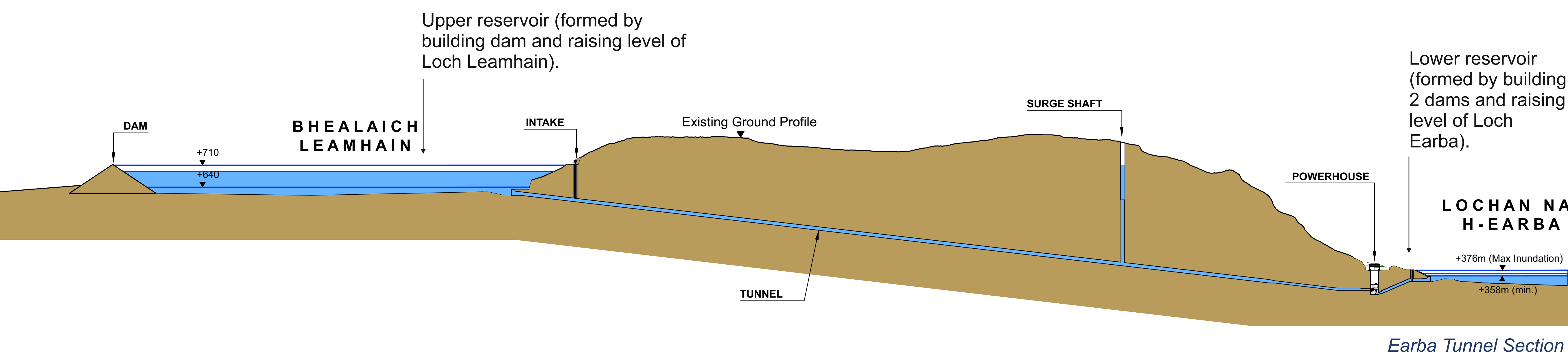
This is Marchlyn Mawr dam in Wales which is similar to the dams proposed at Earba



Plan of the proposed powerhouse

Key details

- 1800MW Capacity
- Storage of up to 40,000MWh
- 3 Dam structures
- 2.65km tunnel length

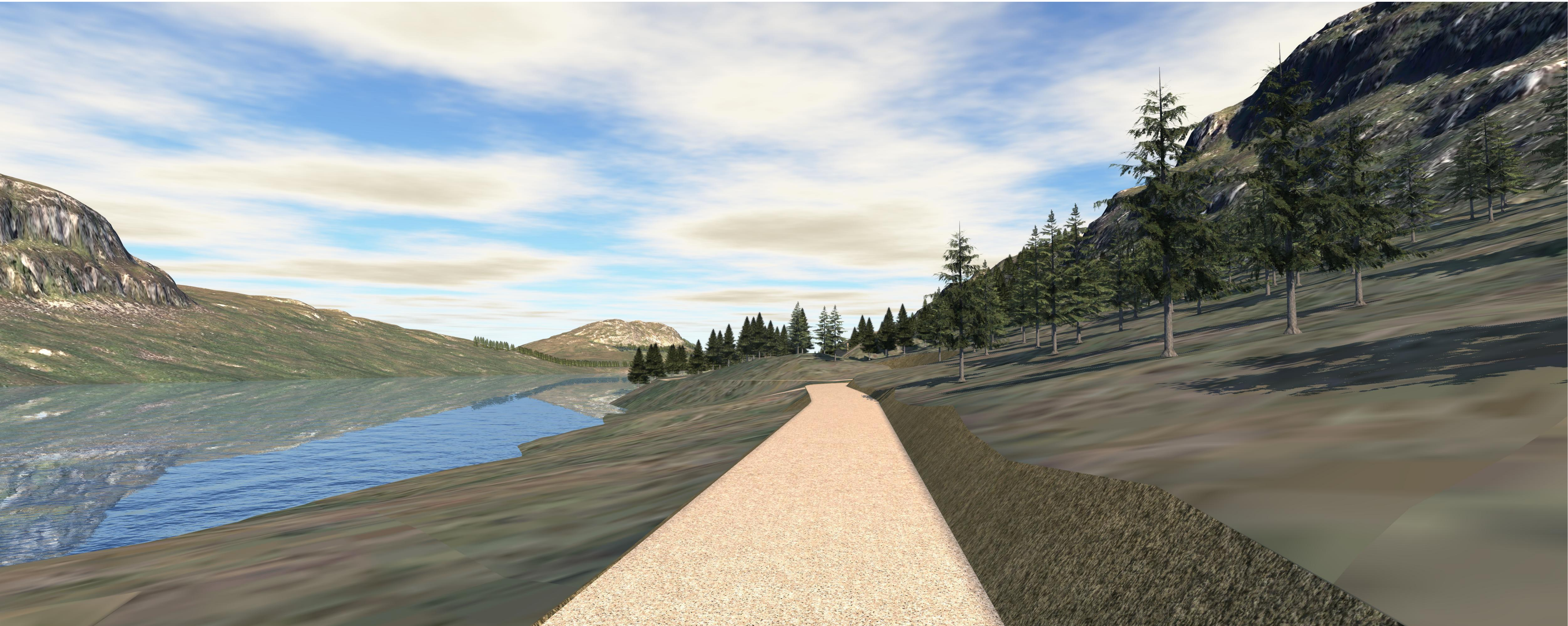


Proposed Powerhouse shown in cross section, with roofline beneath existing ground level

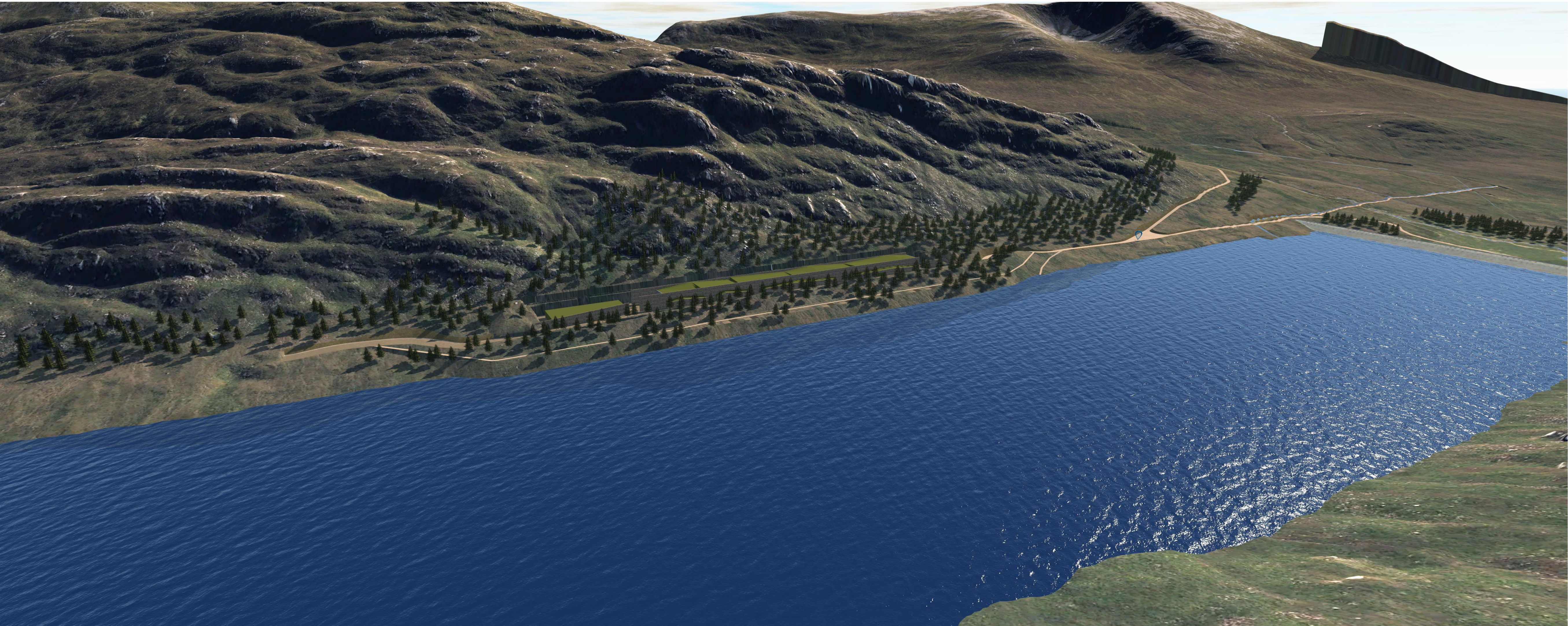


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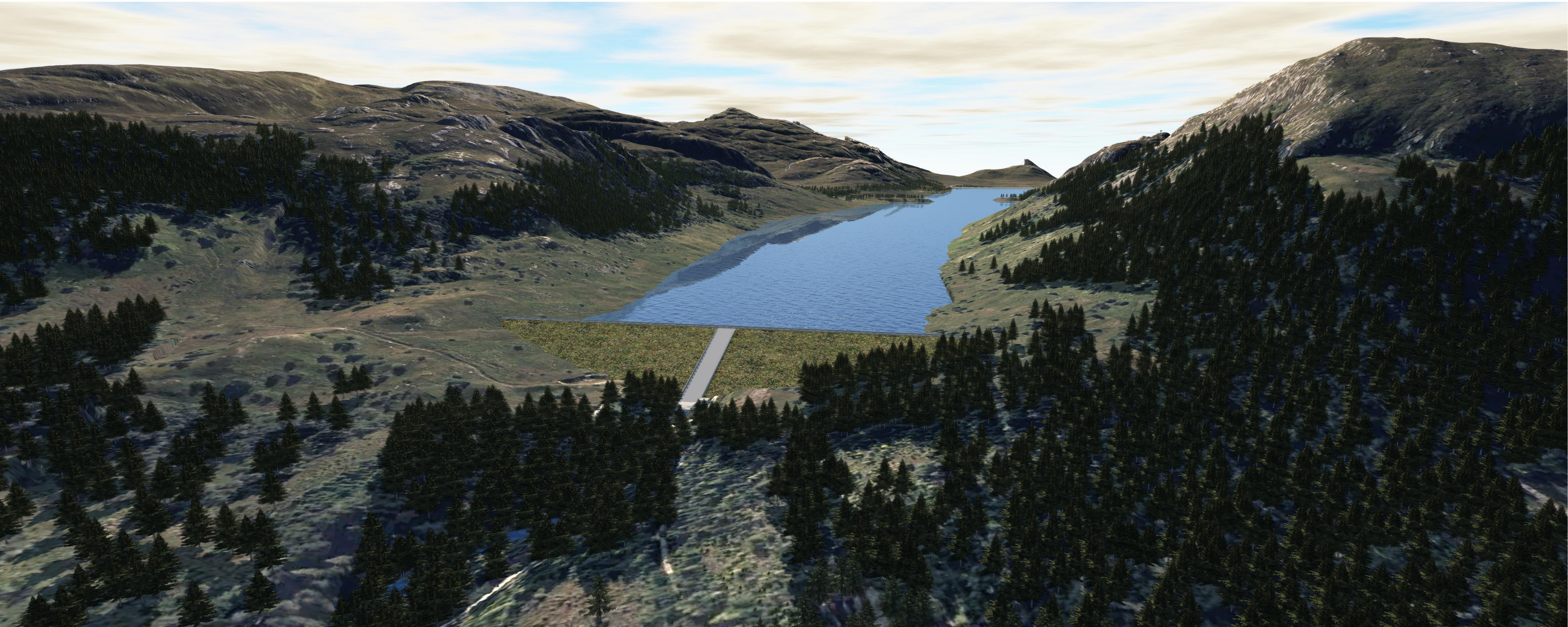
The Proposed Development



3D model image of the powerhouse from South east - at track level



3D model image of the powerhouse and Shuas Dam from the north



3D model image of the lower reservoir and Shios Dam from the north



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Environmental Impact Assessment

An Environmental Impact Assessment (EIA) is being carried out to understand the potential impacts the Proposed Development could have on the environment and to identify appropriate mitigation measures to avoid, reduce or offset any adverse effects.

The EIA comprises a series of targeted specialist environmental studies. The survey work to inform these has been carried out over the past 12 months, and is now complete.

The findings of the EIA will be reported in an EIA Report, which will be submitted as part of the Section 36 Application. The following topics will be included:

- Consideration of Alternatives and Design Evolution
- Hydrology and Water Management
- Landscape and Visual
- Terrestrial Ecology
- Forestry
- Ornithology
- Aquatic Ecology
- Geology, Soils and Water
- Biodiversity Net Gain
- Land Use
- Recreation and Access
- Cultural Heritage
- Transport and Access
- Noise and Vibration
- Socio-economics and Tourism



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Visualisation of the Proposed Upper Reservoir from Carn Dearg Summit



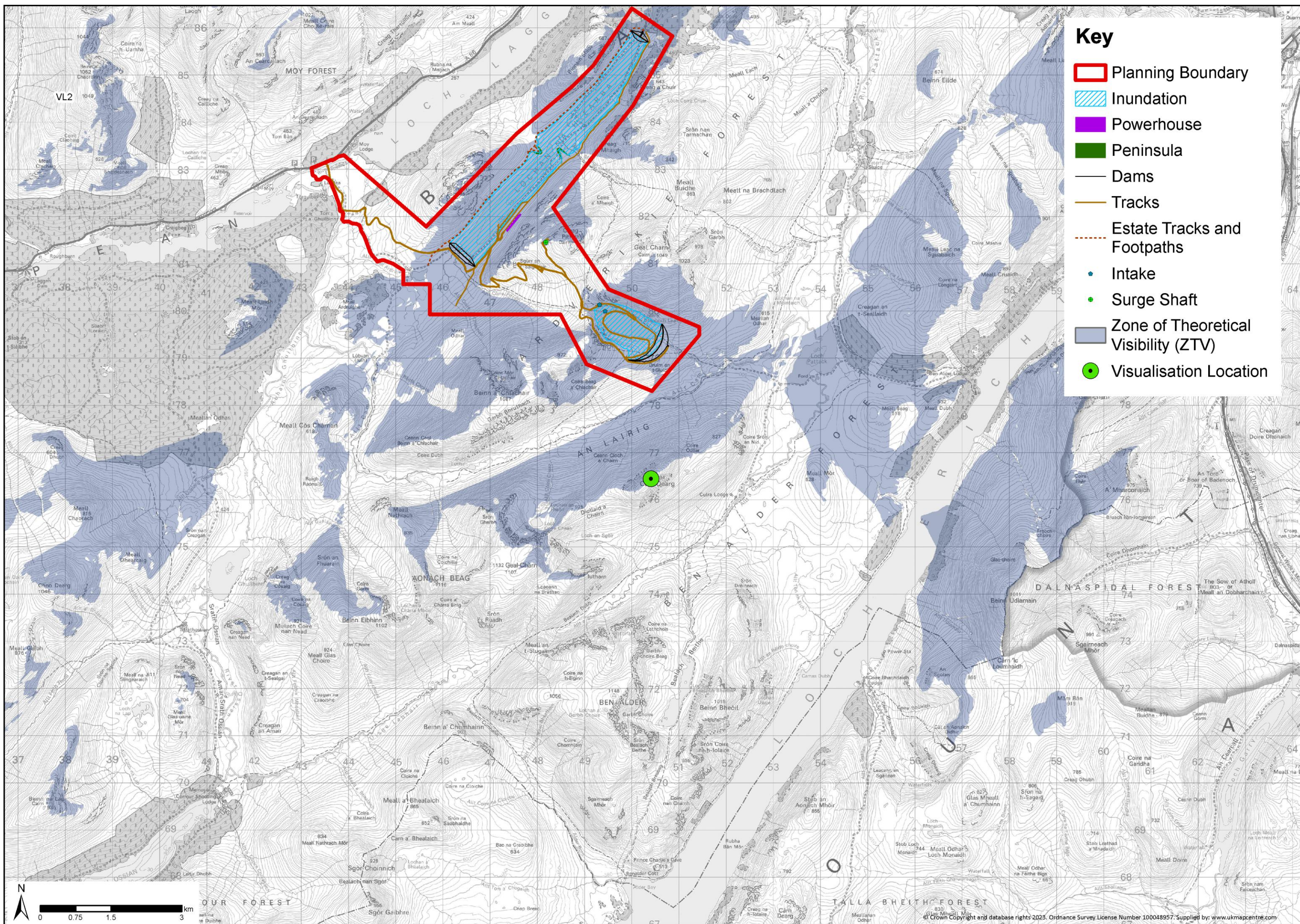
View from Carn Dearg summit (Baseline Photograph)



View from Carn Dearg Summit (Photomontage, Year 15 of operation)



Tripod Position



Visualisation Location



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Visualisation of Proposed Lower Reservoir from Creag Pitridh Summit



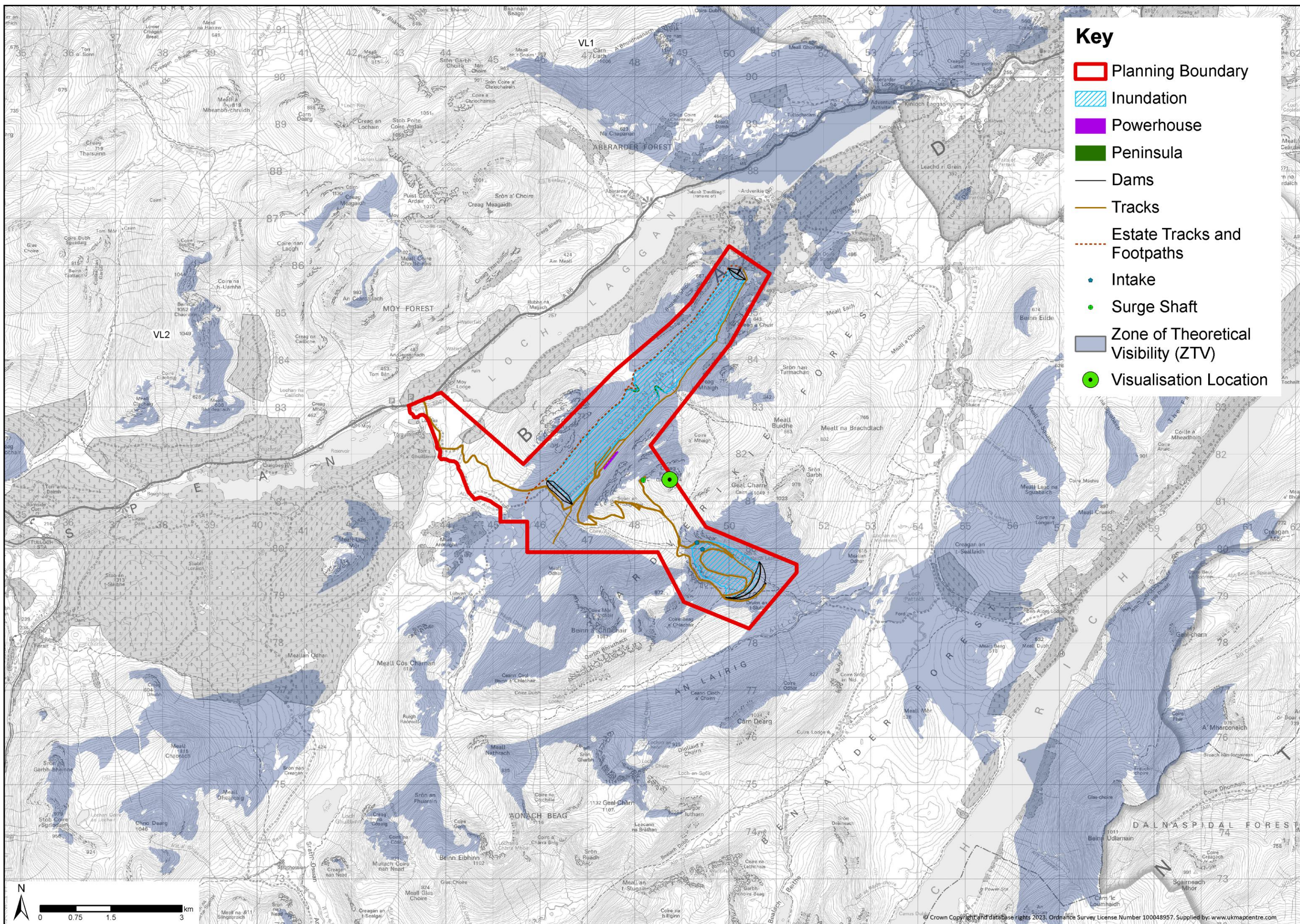
View from Creag Pitridh Summit (Baseline Photograph)



View from Creag Pitridh Summit (Photomontage, Year 15 of operation)



Tripod Position



Visualisation Location



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Visualisation of Proposed Leamhain Dam from Geal Charn Summit



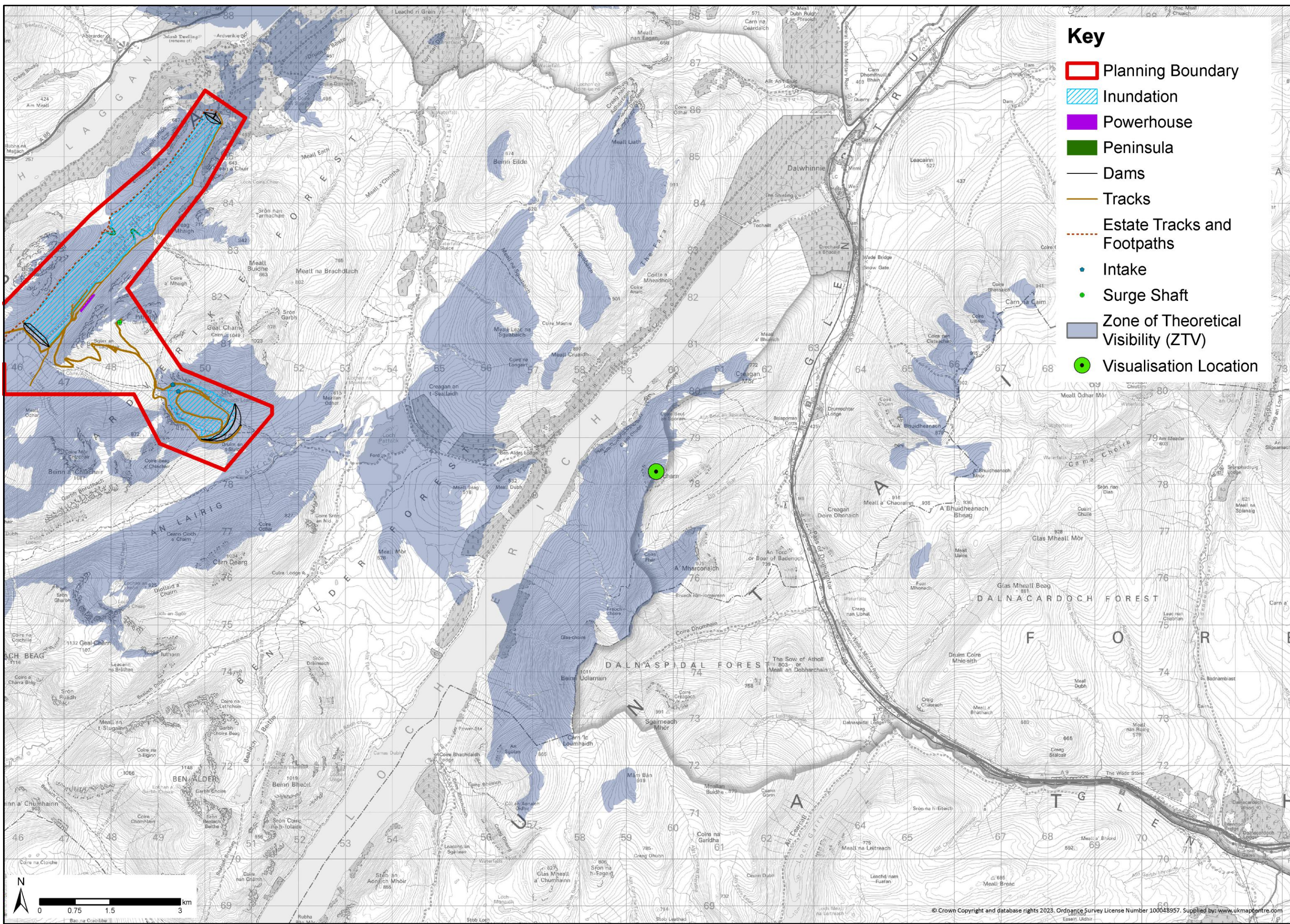
View from Geal Charn summit (Baseline Photograph)



View from Geal Charn Summit (Photomontage, Year 15 of operation)



Tripod Position



Visualisation Location



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The Proposed Timeline

Throughout the process Gilkes will continuously engage with the local community and stakeholders about the emerging proposals

