



1 Non-Technical Summary

1.1 Introduction

It is proposed to construct and operate a new hydroelectric scheme on the Donich Water, near Lochgoilhead, within Loch Lomond and the Trossachs National Park.

The proposed 1,350kW hydro scheme would abstract water from the Donich Water, returning flow to the same burn before it feeds into the River Goil. The powerhouse will be located on the right bank of the Donich Water (facing downstream).

1.2 Climate Change

It is widely accepted that the burning of fossil fuels, such as coal and oil, and the associated accumulation of carbon dioxide in the Earth's atmosphere is a major cause of climate change. Hydropower harnesses the potential energy of rivers; displacing fossil fuel generated electricity, and will be an ongoing source of renewable energy in the future. The Donich Water hydro scheme will contribute towards Scotland's goal of producing 100% of its electricity from renewable sources by 2020.

1.3 Existing Environment

The development area is at Inveronich, near Lochgoilhead, within the Loch Lomond and the Trossachs National Park. The scheme is positioned on FCS land, which is managed for dense coniferous plantation.

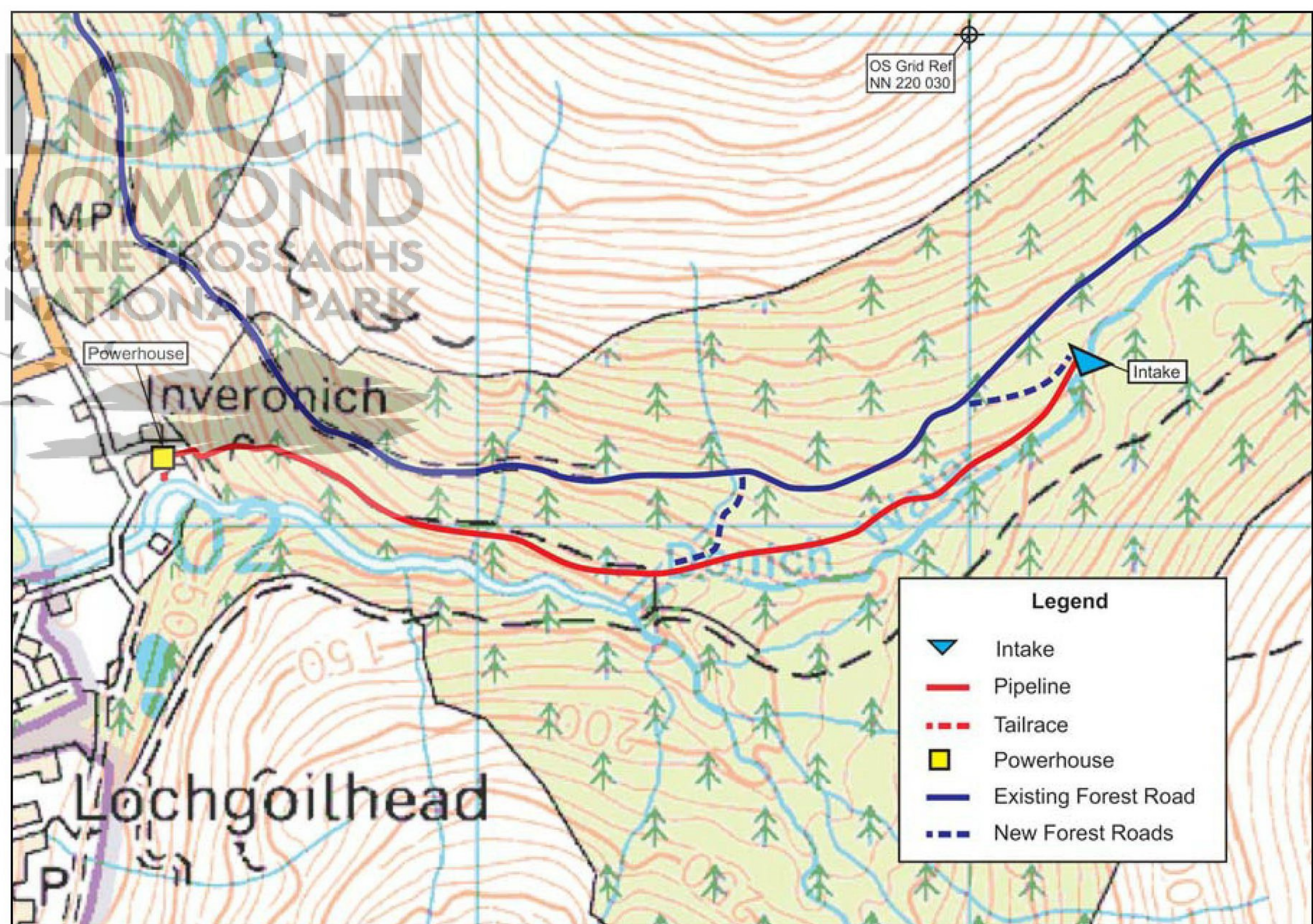
1.4 The Proposal

The proposed hydro scheme layout is shown in Figure 1-1. Water would be abstracted from the Donich Water by means of a low profile concrete weir, and transported via a buried pipeline to the powerhouse. The water would then be discharged through a turbine, which would drive a generator to produce electricity. A tailrace leading from the powerhouse would return the flow to the Donich Water, unchanged in quality or quantity.

The scheme will be a run-of-river design with no water storage facility and the electricity generated will be exported to the nearby grid. There are four principle components to the proposal:

- Intake
- High pressure buried pipeline
- Powerhouse
- Forest Roads

Figure 1-1 - Scheme Layout



1.5 Construction

The construction programme is expected to last approximately 12-14 months, although much of the main civil works will be completed in a 9-11 month period. The main component of the works will be laying the pipeline, digging the trench, backfilling and landscaping.

1.6 Assessment of Environmental Impacts

Access & Traffic

During construction total traffic flows on the local road network will increase as a result of additional traffic moving to and from the site. This increase in traffic flows however, is likely to be significantly less than the threshold as set out under industry standards. The delivery of larger components will be subject to mitigation measures to minimise delays on local roads. Where appropriate, during this construction period, walkers will be temporarily diverted using localised diversions. Signs warning walkers of the construction traffic and giving details of the scheme will be provided and appropriate passing places created. Once operational, the scheme will place no restriction on access for the public.

Archaeology

Five archaeological sites were identified in a desk-based and walkover archaeological survey of the site area. All are associated with agricultural or woodland management activities and date to the post-Medieval period. No scheduled ancient monuments were recorded in the survey area or its vicinity. The hydro works will directly impact a stone wall, an earthen bank and an old fence. It is recommended that damage is kept to a minimum for the stonewall and earthen bank and that these sites are reinstated on completion. No mitigation is required for impacts to the old fence.



Fish & Aquatic

A fish habitat survey of the Donich Water revealed that there is approximately 0.6km of habitat in the Donich Water that is accessible to migratory species, comprising pool habitat, spawning sites and juvenile habitat. The powerhouse is located as close to the lowermost impassable obstacle as technically possible. The proposed hydro scheme will therefore impact on a total of 0.23km of accessible habitat, which represents 3.7% of all accessible habitats within the River Goil catchment, although the majority of spawning habitats occur between the outfall of the tailrace and the confluence with the River Goil. Between the lowermost impassable obstacle and the intake, a further 1.99km of habitat is potentially available to resident brown trout and European eel.

FWPM

The proposed hydro scheme will have no impact on FWPM.

Habitat (Flora)

The development will mainly affect areas of dense planted coniferous woodland, scattered individual conifers/broadleaves and some marshy and mesotrophic grassland and dry heath. The mature broadleaved, riparian woodland present along Donich Water is listed in the Ancient Woodland Inventory and will be avoided by the scheme. A small number of individual mature trees may be affected in the vicinity of the powerhouse. With mitigation, the impacts to marshy grassland, dry heath and woodland habitats would be low, overall.

Bryophytes

A total of 120 bryophyte species were identified, which is typical of a wooded ravine with acidic rocks, conifer cover and *Rhododendron*. The ground affected by the proposed intake, pipeline and powerhouse has a limited bryophyte flora composed of robust and common species that can tolerate the disturbance involved in commercial forestry. The significance of the impact on the low bryophyte interest on the site is classed as minor.

Protected Mammals

Two red squirrels were seen but no dreys were found. One tree with bat roost potential was identified although it is likely that this can be avoided by the scheme. No evidence for the presence of otter, water voles, pine marten, badger or wildcat was found. Mitigation measures are described such that if fully implemented, protected mammal species are considered unlikely to be adversely affected by the proposed development.

Birds

The scheme does not overlap with any statutory designations for breeding bird species. The mature trees in the valley and the valley sides support buzzard and sparrow hawk and the mature spruce, larch and fir trees in the gorge sides, which could potentially support white-tailed eagle. The development could lead to some temporary disturbance from part of a golden eagle foraging range, however this can be mitigated. The scheme could potentially disturb a black grouse lek site at 1.5km from the site area, although this impact would be minor. There is also a possibility of breeding woodcock in the lower valley, mixed woodland and wet *Molinia* mire habitat but, again, no impacts are predicted. Impacts to other moorland and woodland songbirds are likely to be low as there are no particularly sensitive species involved and the overall woodland bird community is typical for the Cowal.



Hydrology

The abstraction of water from the Donich Water watercourse will result in lower flows between the point of abstraction and the point of return. Abstraction will occur however, only when there is sufficient river flow to maintain an adequate compensation flow downstream of the hydro intake. If the minimum compensation flow cannot be achieved then no abstraction will take place. In this situation, natural river water will continue to flow downstream of the intake unchanged in quantity or quality.

Morphology

The proposed hydro scheme will result in a physical barrier to the movement of sediment material downstream and also a reduction in the flow of water between the intake and the powerhouse. However, the scale of this impact will be lessened by a number of factors including the inclusion of a flushing pipe or scour valve in the intake structure, the presence of a compensation flow in the watercourse and the lack of an impact on flood flows, the main process for sediment movement.

Landscape & Visual Impact

Overall, during construction and the early operational years, the scheme may cause minor adverse landscape and visual impact to the hillside at the head of Loch Goil. However, the impact of the pipeline is largely reversible and the long-term impact on the landscape is predicted to be low overall. The new forest roads are likely to be the most visible long-term component to the proposal, but the significance of these in a landscape already modified by forestry and tracks is likely to be minimal. Moreover, the recessive appearance and design of the powerhouse building will help the structure to integrate into the existing landscape.

Noise

The closest dwelling is approximately 60m southwest of the proposed powerhouse location. The predicted increases in sound pressure levels at this building were less than the existing background noise at the nearest dwelling, therefore the overall impact of the scheme on the noise in the area can be considered as negligible.

Socio-Economic Impact

An estimated average of 12-18 people will be employed during the construction of the hydro scheme. Local businesses in Lochgoilhead and the surrounding area are expected to benefit from the increase in construction staff and visitors in the area.

1.7 Conclusions

Although there are some local environmental impacts associated with the proposal, the mitigation measures will reduce these to a level of low significance. Given the contribution to Scotland's renewable energy targets and the associated carbon emissions reduction, this scheme offers significant national benefits.