

Technical Note

Project name Glen Earrach PSH	Subject Glen Earrach Grid Connection – Water Environment, Flood Risk and Water Resources Technical Note		Date April 2026
Prepared by DHS Associate Director - Water	Checked by SH Associate – River Restoration and NFM	Verified by DL Technical Director	Approved by MC Project Manager

Background

Glen Earrach Energy (GEE) has instructed AECOM to undertake a desk-based water environment, flood risk and water resources assessment of the potential effects of a proposed grid connection (hereafter the Grid Connection Project) for the Glen Earrach Pumped Storage Hydro project (the Proposed Development). An indicative connection route has been identified between the substation forming part of the Proposed Development and the indicative connection point for the Proposed Development at the Bingally substation to the west (hereafter the Connection Route).

The Connection Route comprises an initial section (approximately 2km) of underground 400kV cable (UGC) from the Glen Earrach Pumped Storage Hydro substation to the start of a 400kV overhead line (OHL) section. The 400kV overhead line has an approximate length of 16km and connects the underground cable section to the Bingally Substation. The Connection Route is as shown in Figure A. To inform the assessment it is assumed that the 2km of 400kV cable will be installed through micro-tunnelling. It is also assumed that access tracks and temporary working areas will be required in the vicinity of the Connection Route during construction with construction lasting approximately 3 years.

The aim of this assessment is to identify whether the Grid Connection Project has the potential to result in any likely significant effects on water environment, flood risk and water resources, having regard to the cumulative assessment approach used in the Environmental Impact Assessment Report (EIAR) for the Proposed Development, considering both the Construction Phase and the Operation Phase. This Technical Note should be read in conjunction with Chapter 10: Water Environment and Chapter 11: Flood Risk and Water Resources of the EIAR for the Proposed Development and Additional Information.

Assessment

Relevant receptors and features

The relevant receptors and features to consider with respect to the water environment, flood risk and water resources are:

- Watercourse crossings;
- Areas of hardstanding;
- Construction activities in the vicinity of watercourses and surface water features;
- Hydromorphological sensitivities associated with watercourse bed and bank disturbance;
- Groundwater, insofar as relevant to the underground cable section; and
- Private water supplies (PWS), insofar as relevant to the Connection Route.

A desk-based review of the indicative Connection Route has been undertaken with reference to the baseline, receptor sensitivity and embedded mitigation already defined within Chapter 10: Water Environment and Chapter 11: Flood Risk and Water Resources of the EIAR.

The desk-based review indicates that the nature of the assumed grid connection works (linear infrastructure comprising UGC and OHL with associated access tracks and temporary working areas) is comparable to construction activities already assessed within the EIAR, particularly in relation to temporary watercourse crossings, localised earthworks, and construction-phase drainage management. As such, the types of impact pathways identified for the Grid Connection Project are not materially different from those already assessed for the Proposed Development.

In particular, the EIAR demonstrates that potential effects on surface water quality, groundwater, hydromorphology and flood risk arising from construction activities are typically minor to moderate prior to mitigation and reduced to Not Significant following the implementation of standard embedded mitigation, including the Construction Environmental Management Plan (CEMP), Outline Water Management Plan (WMP), and site-specific drainage design. These mitigation measures are considered directly applicable to the Grid Connection Project and would be secured through the same framework of environmental management and regulatory control. The desk-based review has not identified any feature of the indicative Connection Route that would require materially different mitigation.

Due to the shallow nature of much of the works associated with the Grid Connection Project, groundwater effects are expected to be limited. In relation to the underground cable section, the EIAR has already assessed tunnelling activities and concluded that groundwater quality impacts during construction and operation would be Not Significant. The desk-based review has not identified any route-specific feature of the indicative UGC section that would alter that conclusion.

A review of private water supplies included in The Highland Council database indicates that none are located within 1 km of the proposed Connection Route. On that basis, private water supplies are not anticipated to represent a significant constraint in the assessment of the Connection Route.

Potential effects

Construction

Construction work including creation of an access track, overhead line infrastructure, and underground cable installation has the potential to affect flood risk, water resources and the water environment. During the construction phase there is the potential for adverse effects from increased runoff, chemical contamination, sedimentation of water features by fine sediment in runoff, chemical spillages, and physical changes to water features as a consequence of construction works, including but not limited to:

- increased runoff due to increased areas of hardstanding and compacted ground from site clearance, access tracks and compounds;
- temporary water storage in attenuation ponds and drainage systems;
- increased flows due to dewatering activities;
- new or temporary crossings of watercourses, causing an increase in flood risk locally;
- geomorphological impacts including damage to watercourse beds and banks from temporary crossings and construction activities;
- earthworks, spoil storage and other general construction activities, including stripping of vegetation, movement of plant, and concrete works where relevant; and
- entry and exit pits required to create the underground cable route becoming inundated during flood events from fluvial or pluvial sources, potentially leading to damage to the works and equipment.

Without appropriate mitigation, such effects could adversely affect the natural attributes of waterbodies, water quality, hydromorphology, flood risk and relevant water uses.

Having regard to the indicative Connection Route, these potential effects are considered to be limited to localised and temporary construction-phase interactions. The desk-based review has not identified any route-specific feature of the indicative alignment that would be expected to alter the conclusions of Chapters 10 and 11 or introduce a new likely significant effect pathway in respect of water environment, flood risk or water resources.

Operation

No operational impacts are anticipated due to the nature of the permanent works associated with the Grid Connection Project. No operational impacts are anticipated from the buried UGC section, which would function as a passive asset

during operation and would not be expected to influence water levels, flow pathways, flood risk or water resource availability. In addition, no operational mechanisms associated with the Grid Connection Project would influence controlled water levels, flow regulation infrastructure, or the wider flood risk regime assessed in Chapter 11.

Embedded mitigation and assessment basis

Within the EIAR, a series of embedded and additional mitigation measures have been provided. The desk-based review indicates that the potential impacts arising from the Grid Connection Project are comparable to relevant aspects of the Proposed Development, and the mitigation measures described in the EIAR are considered sufficient and directly relevant to the assessment of the Grid Connection Project.

All the above effects are already considered in the EIAR and, where moderate or minor, are mitigated by means of sustainable drainage design and the Construction Environmental Management Plan, supported by the Outline Water Management Plan (Appendix 3.1 Outline Construction Environmental Management Plan and Appendix 10.4 Outline Water Management Plan), which details management of construction site runoff, management of spillage risk, management of groundwater activities, location and operation of concrete batching plants, and working near water receptors.

The Grid Connection Project does not introduce any new effect pathways of a type not already assessed in Chapters 10 and 11. Rather, it extends comparable forms of linear infrastructure into an indicative corridor to the west of the Proposed Development.

Summary and Conclusions

AECOM does not consider that any likely significant effects will result from the proposed Grid Connection Project in respect of the water environment, flood risk or water resources.

The desk-based review indicates that the Grid Connection Project does not alter the hydrological regime of Loch Ness, the River Ness or the Caledonian Canal, nor does it give rise to any additional pathways for likely significant flood risk effects beyond those already assessed.

Potential effects are limited to localised, temporary construction-phase interactions with watercourses and surface water features, together with localised increases in impermeable area associated with permanent infrastructure. These effects are well understood, routinely managed, and have been demonstrated within the EIAR to be effectively mitigated to Not Significant levels.

In relation to groundwater and private water supplies, no new likely significant effects have been identified. Groundwater effects associated with tunnelling activities have already been assessed within the EIAR and found to be Not Significant, and no private water supplies have been identified within at least 1 km of the proposed Connection Route.

Accordingly, on the basis of the indicative Connection Route and assessment assumptions adopted in this Technical Note, the conclusions of Chapter 10: Water Environment and Chapter 11: Flood Risk and Water Resources remain unchanged, and no likely significant effects have been identified arising from the Grid Connection Project, having regard to the cumulative assessment approach used in the EIAR for the Proposed Development.

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