Scottish & Southern Electricity Networks

TRANSMISSION

Creag Dhubh to Dalmally 275kV Connection

Environmental Impact Assessment

Volume 4 | Appendix 10.5

Private Water Supplies Assessment

April 2022

CONTENTS

List of Abbreviations

ABC	Argyll and Bute Council
PWS	Private Water Supply
CEMP	Construction Environmental Management Plan
GEMP	General Environmental Management Plan
ECoW	Environmental Clerk of Works
EIA	Environmental Impact Assessment
EIA Report	Environmental Impact Assessment Report
OHL	Overhead Line
SEPA	Scottish Environment Protection Agency

1 INTRODUCTION

1.1 The Proposals

1.1.1 This Technical Appendix (TA) presents information relevant to the Creag Dhubh to Dalmally 275kV Connection. It should be read in conjunction with the **Volume 2 – EIA Report** specifically **Chapter 10: Hydrology, Hydrogeology, Geology and Soils**, for full details of the Proposed Development.

1.1.2 Scottish Hydro Electric Transmission plc (the Applicant) who, operating and known as Scottish and Southern Electricity Networks Transmission (SSEN Transmission), own, operate and develop the high voltage electricity transmission system in the north of Scotland and remote islands. Due to the growth in renewable electricity generation in the north and north-east of Scotland, upgrade of the transmission network is required in order to provide the necessary increase in transmission capacity.

1.1.3 The Applicant is proposing to apply for consent under section 37 of the Electricity Act 1989 to construct and operate a 13.3 kilometre (km) double circuit 275 kV overhead line (OHL), supported by lattice steel towers between a proposed substation at Creag Dhubh to the existing Scottish Power Energy Networks (SPEN) 275 kV OHL that runs from Dalmally to Inverarnan, near Succoth Glen, connecting via a Tie-In connection (the 'Proposed Development'). The location of the Proposed Development is shown in **Figure 1.1: Location Plan and Overview (EIAR Volume 3a).**

1.2 Requirement for Private Water Supply Report

1.2.1 A Private Water Supply (PWS) is considered to be a small abstraction of less than 10 m^3 per day from a source such as a borehole, spring/well or surface water body. The Scottish Environment Protection Agency (SEPA) typically requires that all groundwater abstractions be identified within 100 m of proposed roads, tracks and trenches or within 250 m from borrow pits and foundations[1]. In addition to screening for PWS within these buffers, this assessment also considers other supplies, within a 2 km buffer, in potential hydrological connection to the Proposed Development.

1.2.2 PWS are categorised as Type A, which are Regulated Supplies that serve 50 or more persons in total or which serve commercial properties (regulated under The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017)[2], and Type B, or Exempt Supplies that serve only domestic properties (regulated under. The Private Water Supplies (Scotland) Regulations 2006)[3].

1.2.3 This assessment takes account of the PWS within the Study Area (**Figure 10.7, EIAR Volume 3a)** and lays out the mitigation measures required in order to avoid any significant effects on PWS.

[1] LUPS-GU31 , SEPA 2017 Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems.

[2] https://www.legislation.gov.uk/ssi/2017/282/contents/made.

3 https://www.legislation.gov.uk/ssi/2006/209/contents/made.

2 PRIVATE WATER SUPPLY ASSESSMENT

Private Water Supply Locations

2.1.1 Following a request for information by Ramboll, Argyll and Bute Council (ABC) provided mapping of PWS locations within 2 km of the Proposed Development, based on the Council's register. A total of eight PWS locations were identified by the Council within this specified Study Area as summarised in **Table 2.1**:

Table 2.1: Argyll and Bute Council Private Water Supply Locations

ABC PWS Reference	Private Water Supply Name	Source Type	Easting	Northing	Supply Type
AABOL0298	Ardteatle Cottage	Surface Burn Supply	213461	725876	B
AABOL0359	Brackley Farm	Surface Burn Supply	217900	726500	B
AABOL0355	Blarchoarain Farm	Surface Burn Supply	214900	724500	B
AABOL0359	Brackley Farm	Surface Burn Supply	217900	726500	B
AABOL0368	Succoth Farm	Surface Burn Supply	221300	726500	B
AABOL0373	Bovoy	Surface Burn Supply	210400	722500	B
AABOL0504	Millside Cottage	Groundwater (Well)	211300	723400	B
AABOL0372	Achlian	Groundwater (Well)	212200	724200	A1

2.1.2 As identified in **Figure 10.7 (EIAR Volume 3a)** there are no PWS locations identified by ABC recorded within 250 m of the Proposed Development, including proposed access tracks and tower locations. In line with SEPA guidance[4] site specific qualitative and/or quantitative risk assessment is not required of groundwater abstractions outside of a 250 m buffer.

2.1.3 Three PWS locations are situated in close proximity to a watercourse, downstream and therefore in potential hydrological connection to the Proposed Development. These locations are summarised in **Table 2.2**. While two of these locations are groundwater abstractions, they are included in order to take in to account the potential for alterations to surface water supplies to affect well supplies.

Table 2.2: Argyll and Bute PWS Locations (Potential Hydrological Connection)

ABC PWS Reference	Private Water Supply Name	Source Type	Easting	Northing	Distance from Infrastructure
AABOL0373	Bovoy	Surface	210400	722500	595m
AABOL0504	Millside Cottage	Groundwater (Well)	211300	723400	455m
AABOL0372	Achlian	Groundwater (Well)	212200	724200	435m

2.1.4 Site assessment carried out by Balfour Beatty on behalf of the Applicant indicates that further PWS are present within 250 m of the Proposed Development (**Figure 10.7, EIAR Volume 3a),** to the south east of Cladich Farm and in proximity to a sheep wash to the south east of Achlian Farm, the source and name of these supplies is not available. Locations of PWS identified by Balfour Beatty are summarised in **Table 2.3**.

[4] LUPS SEPA Guidance Note 31. Available online: https://www.sepa.org.uk/media/143868/lupsgu31_planning_guidance_on_groundwater_abstractions.pdf [Last accessed November 2021].

Table 2.3: PWS Locations Identified in Further Surveying

Ramboll ID	Private Water Description	Easting	Northing	Distance From Infrastructure	Notes
BB_PWS_1	Cladich Farm area (Bovuy), stream within forestry	210820	722296	114m	Stream location (assumed surface water supply), downslope of T14
BB_PWS_2	Cladich Farm area (Bovuy), stream on grazed land	211069	722839	230m	Stream location (assumed surface water supply), downslope of T16
BB_PWS_3	Achlian, to south east of sheep dip area	212584	723815	90m	Field boundary / drain, type of abstraction not specified, upslope of proposed route / track
BB_PWS_4	Achlian, to north east of sheep dip area	212634	723887	66m	Located on stream / surface water flow path, grazed land, type of abstraction not specified, upslope of proposed route / track

2.1.5 A natural spring is reported to be located between T43 and T44 (GR 217926, 726188) which provides Brackley Farm with a water supply. According to the landowner this spring flows north from this point to a water settlement tank just south of Brackley Farm. This location is approximately 50 m north east of tower location T43 and is downslope of a proposed access track route (**Figure 10.5.1, Appendix A**).

3 MITIGATION MEASURES AND RECOMMENDATIONS

3.1.1 Detailed risk assessment shall be carried out by the appointed principal contractor, prior to the commencement of construction work, at three locations identified in **Tables 2.2** and **2.3: Bovoy PWS, BB_PWS_1** and **BB_PWS_2** and at the **Brackley Farm PWS** (subject to confirmation of the PWS location identified by the landowner). These locations are downstream of the Proposed Development and as such potentially sensitive to alterations in the quality and quantity of surface water supply.

3.1.2 Standard procedures will be applied by the principal contractor and set out in the Construction Environmental Management Plan (CEMP) (**TA 2.2: Outline CEMP, EIAR Volume 4**) to protect PWS water quality and supply during construction works. To ensure that all drainage measures employed during the construction phase of the Proposed Development are maintained appropriately and remain effective, the performance of the drainage measures would be monitored and drainage management works would be supervised by the Ecological Clerk of Works (ECoW).

3.1.3 Works in proximity to PWS identified above shall be acrried out in accordance with SSEN General Environmental Management Plan (GEMP) TG-NET-ENV-518 – Private Water Supplies (**TA 2.3, EIAR Volume 4**). This shall include the following measures to be implemented by the appointed contractor:

Pre Construction

3.1.4 A risk assessment should be undertaken to identify those PWS that have the potential to be affected by the works including consideration of:

- Type and depth of water supply source (e.g. borehole, spring or surface water abstraction);
- Catchment area; and
- Nature of proposed works (e.g. depth and extent of any proposed excavations, potential for pollution incidents / spillage etc).

3.1.5 Should the results of this assessment indicate a risk to the PWS, then mitigation shall be developed for inclusion in a site specific PWS Protection Plan that is discussed and agreed with the PWS owner. Micrositing will also be considered to establish if infrastructure could be sited to avoid impacts to PWS.

3.1.6 In certain circumstances it may be appropriate to undertake water quality testing of the source or supply, to establish a baseline of current water levels and quality. This should be agreed as part of the PWS projection plan.

3.1.7 A contingency plan shall be prepared to deliver an alternative water supply (on a temporary or permanent basis) in the event of unbforseen problems with the existing supply.

Construction

3.1.8 PWS requiring protection will have specific mitigation developed. Mitigation may include some / all of the following:

- Fence off the PWS intake (to avoid accidental damage and to deter animals) and identify relevant buffer distances;
- Installation of silt mitigation to prevent runoff from works areas entering the PWS. Use a precautionary approach as not all flow pathways may be immediately obvious;
- Avoid undertaking works within PWS catchments during wet weather or when wet weather is forecast as there will be increased surface water flows into the PWS which will be harder to control.
- Low impact access methodologies including the use of track panels where access to works are within the PWS catchment;

- Survey and peg out the route of the distribution main in the vicinity of the construction works and avoid / minimise activity within this area; and
- All site operatives working in the area should be made aware of the location of the PWS and of the sensitive catchment area through toolbox talks or similar, and should be reminded when works take place in this area.

3.1.9 During construction, water quality would be monitored. If the quality and/or quantity of water to the PWS is impacted by the Proposed Development, a temporary alternative source will be supplied until remedial works are completed.

4 CONCLUSION

4.1.1 SEPA typically requires that all groundwater abstractions be identified within 100 m of proposed roads, tracks and trenches or within 250 m from borrow pits and foundations[5]. In line with these requirements assessment has been carried out to identify PWS that could be impacted as a result of the Proposed Development and to set measures that would be implemented at locations where construction of the Proposed Development could affect the quality or quantity of water supplies.

4.1.2 Four locations have been identified at which PWS are in potential hydraulic continuity with the Proposed Development: Bovuy PWS, BB_PWS_1 and BB_PWS_2 and at the Brackley Farm PWS. At these locations pre-construction assessment and construction phase implementation of best practice measures (as set out in the full CEMP to be prepared by the appointed contractor and SSEN General Environmental Management Plan (GEMP) TG-NET-ENV-518 – Private Water Supplies to prevent adverse effects to PWS.

4.1.3 During construction, water quality would be monitored. If the quality and/or quantity of water to the PWS is impacted by the Proposed Development, a temporary alternative source will be supplied until remedial works are completed.

[5] LUPS-GU31 , SEPA 2017 Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems.