

Creag Dhubh to Inveraray 275 kV Connection

October 2022

Environmental Impact Assessment Report – Volume 1: Non-Technical Summary

Application for consent under Section 37 of the
Electricity Act 1989

RAMBOLL



Scottish & Southern
Electricity Networks

TRANSMISSION

1. INTRODUCTION

1.1 Introduction

Scottish Hydro Electric Transmission plc (the 'Applicant'), who operating and known as Southern and Southern Electricity Networks Transmission (SSEN Transmission), is proposing to construct and operate an approximately 9 kilometre (km) double circuit 275 kV overhead line (OHL), supported by lattice steel towers between a proposed substation at Creag Dhubh (subject to a separate planning application) and a connection point at the recently constructed Inveraray – Crossaig 275 kV capable OHL circuit, in Argyll (the 'Proposed Development'), see **Figure 1: Location Plan**.

This NTS forms part of the Environmental Impact Assessment Report (EIA Report), which has been prepared under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 to accompany an application for consent under section 37 (s37) of the Electricity Act 1989, as amended.

The aim of this NTS is to summarise the content and the main findings of the EIA Report in a clear and consistent manner to assist the public in understanding what the environmental effects of the Proposed Development are likely to be. The full EIA Report (**Volume 2: Main Report; Volume 3: Figures and Visualisations; and Volume 4: Technical Appendices**) provides a more detailed description of the Proposed Development and the findings of the EIA.

1.2 Environmental Impact Assessment (EIA)

The EIA Regulations require that an EIA must be undertaken before permission is granted for certain types of development. As the Proposed Development involves the construction of an OHL with a voltage of more than 132 kV it is categorised as 'Schedule 2' development under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the 'EIA Regulations').

The purpose of the EIA is to inform the decision maker of the likely significant environmental effects of a Proposed Development, and to specify mitigation to avoid or reduce significant environmental effects.

An EIA Report has been prepared in support of the s37 application to the Energy Consents Unit (ECU). Electronic versions of the application, including this EIA Report and its supporting volumes are available to download from the Applicant's website:

- www.ssen-transmission.co.uk/projects/creag-dhubh-inveraray-275kv-overhead-line/

The EIA Report can also be viewed via the ECU website:

- www.energyconsents.scot

In addition, paper copies of the EIA Report will be made available at a named public place, with the address(es) to be published in the notice.

The EIA Report is available in other formats if required. For details, including costs, please contact:

Caitlin Quinn, Community Liaison Manager, M:07901135758, E:caitlin.quinn@sse.com, 1 Waterloo St, Glasgow, G2 6AY

Any representations to the s37 consent application may be submitted via:

- The Energy Consents Unit website at www.energyconsents.scot;
- By email to the Scottish Government, Energy Consents Unit mailbox at representations@gov.scot; or
- By post to the Scottish Government, Energy Consents Unit, 4th Floor, 5 Atlantic Quay, 150 Broomielaw, Glasgow, G2 8LU.

Written or emailed representations should be dated, clearly stating the name (in block capitals), full return email and postal address of those making representations, identify the Proposed Development (Creag Dhubh to Inveraray 275 kV Connection) and specify the grounds for representation. Only representations sent by email to representations@gov.scot will receive acknowledgement.

The closing date for representations will be published on the ECU and SSEN Transmission's websites (addresses provided above).

2. PROJECT DESCRIPTION

2.1 Project Need

The original transmission network in Argyll and Bute was constructed over 60 years ago and designed to transmit electricity to consumers in rural areas of low-density population. As the UK strives for Net Zero (achieving a balance between the greenhouse gases emitted into the atmosphere and those taken out), there has been a significant increase in requests for wind farm developments in the area to be connected to the electricity transmission network. There is therefore a requirement for SSEN Transmission to increase its network capability in Argyll and Kintyre, beyond that already under current construction and public development, to enable the connection of further renewable energy generation and to export to the wider network. This group of works designed to deliver the required increase in network capacity has been named the 'Argyll and Kintyre 275 kV Strategy'.

As the transmission license in the north of Scotland, the Applicant has a legal duty to provide connections for new electricity generators wishing to connect to the electricity transmission network in the Argyll and Kintyre peninsula area. The Proposed Development forms part of this strategy and would facilitate the increase in renewable energy generation and to ensure security of electricity supply to the region.

2.2 Description of Development

The Proposed Development would primarily comprise (see **Figure 2: Proposed Development**):

- An approximately 9 km double circuit 275 kV OHL, supported by steel lattice towers between a proposed substation at Creag Dhubh (subject to a separate planning application) and the recently constructed Inveraray-Crossaig 275 kV capable OHL circuit.
- In addition ancillary works for the construction and maintenance of the OHL, include vegetation management, temporary OHL diversions, construction of new access tracks (temporary and permanent), tower working areas, formation of bellmouths and road and other infrastructure alterations.

The Proposed Development will replace the existing aged 132 kV OHL asset which will be dismantled between the proposed substation at Creag Dhubh and Inveraray and removed as part of the project works.

It is anticipated that the construction of the Proposed Development would commence in 2024 (subject to consents and approvals being granted). A provisional construction period of 43 months is anticipated, with energisation of the project scheduled for 2027. Works would be co-ordinated to minimise disruption to consumers.

2.3 Limit of Deviation

The Limit of Deviation (LOD) is an area within which the OHL infrastructure can be constructed. The purpose of the LOD is to allow flexibility in the consent for the final position of individual towers, allowing towers and access tracks to be micro-sited to respond to localised ground conditions, engineering and environmental constraints. The horizontal LOD parameter established for this development, allows towers and proposed access tracks to be relocated up to 100 m either side of the Proposed Development. A vertical LOD parameter is set to allow an increase of up to 20% of the tower height specified in **Technical Appendix 2.1: Detailed Tower Schedule** in **Volume 4** of the EIA Report.

The EIA Report provides an assessment of the likely significant environmental effects based on the proposed tower schedule. The application of the LOD would be limited to the variation of tower and access track positions (including height for towers) that do not result in adverse change to the level of significance of effects on the environment as detailed in the EIA Report. Any utilisation of the LOD

would be evaluated against the level of significance of effects reported in the EIA Report. Should the evaluation identify an adverse change to the level of significance identified in the EIA Report, consultation would be carried out with Argyll and Bute Council (and any relevant statutory consultees) for approval of the proposed change.

2.4 Construction Phases

The Proposed Development would be carried out in four phases, described below.

2.4.1 Phase 1 – Enabling Works

Enabling works would comprise:

- Two temporary diversions to the existing transmission network infrastructure which are crossed by the Proposed Development;
 - Near Tower T11: the Proposed Development crosses the existing Inveraray to Taynuilt East/ Inveraray to Taynuilt West 132 kV OHL (ITE/ITW); and
 - Near Tower T34: the Proposed Development connects to the existing Inveraray-Crossaig circuit, and a temporary diversion will be required.
- Forestry removal to allow for safe operation and maintenance;
- Provision of new access tracks (temporary and permanent) and upgrades to existing access tracks; and
- Construction of compound sites.

2.4.2 Phase 2 – OHL Construction

The construction phase would comprise the following key activities:

- Detailed geotechnical investigation at each tower position and micrositing, if required, to confirm final tower position and type of foundation.
- Tower foundation preparation with foundations estimated to be up to 2.5 m below ground level and up to 4 m depth, where ground conditions require.
- Establish tower construction working areas of approximately 2500 m² (50 m x 50 m) for section towers and 6400 m² (80 m x 80 m) for angle towers.
- Tower assembly with steelwork delivered to each tower site either as individual steel members or as prefabricated panels.
- Tower stringing with stringing equipment including winches, tensioners and ancillary equipment set out at either end of preselected sections of the OHL.

2.4.3 Phase 3 – OHL Commissioning

The OHL and support towers would then be subject to an inspection and snagging process. The Proposed Development would also go through a commissioning procedure for the switchgear, communications, and protection controls through the proposed substation at Creag Dhubh. The circuits would then be energised.

2.4.4 Phase 4 – Reinstatement

Following commissioning of the Proposed Development, all construction sites would be reinstated. Reinstatement would form part of the contract obligations for the Principal Contractor(s) and would include the removal of all temporary access tracks, all work sites around the tower locations and the re-vegetation of all construction compounds. The existing 132kV ITE/ITW OHL asset will be dismantled between the proposed substation at Creag Dhubh and Inveraray and removed, along with all temporary OHL diversions. The Principal Contractor(s) would be required to provide a Reinstatement Plan prior to reinstatement works commencing.

2.5 Construction Hours of Work

Construction activities would in general be undertaken during daytime periods only. For weekdays, this would involve work between approximately 07:00 to 19:00 in the summer and 07:30 to 17:00 (or as daylight allows) in the winter. On Saturday the working hours would be approximately 07:00 to 17:00 in the summer and 07:30 to 17:00 (or as daylight allows) in the winter.

2.6 Construction Traffic

Construction traffic would include staff journeys as well as vehicle movements for works such as upgrading access routes and deliveries. The Principal Contractor(s) would prepare a Construction Traffic Management Plan, which would be agreed by Argyll and Bute Council. This document would set out the measures to reduce impacts of construction traffic on the road networks.

2.7 Outline Construction Environmental Management Plan

An Outline Construction Environmental Management Plan (OCEMP) has been prepared as part of the EIA Report (**Technical Appendix 2.2** in **Volume 4** of the EIA Report) . The CEMP will detail how the Principal Contractor will manage the site in accordance with all environmental commitments and mitigation detailed in the EIA Report and will include information on statutory consents and authorisations, and industry best practice and guidance.

2.8 Operation Management and Maintenance

Once operational, regular routine inspections would be undertaken to identify any issues with the components, as well as ongoing vegetation management within the operational corridor. However, in general, the OHL would require very little maintenance.

2.9 Decommissioning

The Proposed Development would not have a fixed operational life. It is assumed that the Proposed Development would be operational for 50 years or more. The effects associated with the construction phase can be considered representative of worst-case decommissioning effects, and therefore no separate assessment is proposed as part of this EIA Report.

3. CONSIDERATION OF ALTERNATIVES

The EIA Regulations require reasonable alternatives, relevant to the Proposed Development, to be studied and the reasons for selecting the final option to be provided by SSEN Transmission.

Stakeholder consultation (see **Chapter 4** in **Volume 2** of the EIA Report) and engagement has been undertaken throughout the development process, with advice from key consultees being sought early in the design stage to inform decisions about the Proposed Development.

The following alternatives have been considered:

- The “Do-Nothing Scenario”. This would result in current capacity limitations remaining, failure to deliver on SSEN Transmission’s obligations as network operator, and failure to support future renewable energy developments and Scotland’s commitments to reducing carbon emissions and tackling climate change.
- A new 275 kV connection between the proposed Creag Dhubh substation and the recently constructed Crossaig to Inveraray 275 kV OHL, including:
 - Six alternative Route Options; and
 - Three alternative Alignment Options.

3.1 Route Options

The project was first introduced to stakeholders in 2021. At this stage the Applicant shared the general project scope and identified search areas for a new OHL route.

A comparative analysis of environmental, engineering and cost criteria of six alternative 500 m wide Route Options identified by the Applicant was undertaken. In June 2021 stakeholders were consulted on the route selection process undertaken and the selection of the Original Preferred Route (Route Option DE) (**Figure 3: Routeing Options**).

Prior to the consultation, the Applicant was aware of an Unexploded Ordinance (UXO) concern on the Ladyfield Plantation, along the Original Preferred Route Option. Further consultation was then undertaken with the affected landowners and technical experts on the UXO clearance requirements, costs and timescales. The time required for clearance of UXO along the Original Preferred Route Option would cause significant delay to the project programme and the Argyll 275 kV Strategy as a whole. In addition, the cost of UXO clearance would be considerable and far in excess of the cost of changing the preferred route to one of the other suitable route options. Therefore, the Preferred Route Option was moved to the west of the A819 and thereafter known as the New Proposed Route Option.

3.2 Alignment Options

Following the routing stage, a Baseline Alignment was developed along with a number of deviations. The two deviations were suggested for the following reasons:

- **Alignment Deviation 1:** This option moved the Alignment to the west and further away from residential properties. It reduced the impact on a working farm by moving the alignment out of the lambing or "in-bye" fields. It also allowed the Alignment to avoid being sited on top of a ridge, which helps reduce visual impact from the trunk road and/or local properties. This option goes through the northern part of the Blarghour windfarm proposed Habitat Management Area. Further assessment is being undertaken to consider options for offsetting impacts.
- **Alignment Deviation 2:** This option extended the section that the new OHL will run in parallel to the existing 132 kV Inveraray to Taynuilt OHL (ITE/ITW) before an angle turns towards Creag Dhubh and offers improvement in response to landowner feedback. The rationale for moving is in theory it reduces the area of land sterilisation by the two OHLs.

A comparative appraisal of the environmental, engineering and cost sensitivities was undertaken for each Alignment Option and the Preferred Alignment was consulted on in April 2022.

The alignment and consultation process identified that from north to south, the Preferred Alignment would comprise the Baseline Alignment then changing to of Deviation 1 to the Inveraray – Crossaig connection.

4. POTENTIAL ENVIRONMENTAL EFFECTS

EIA is a process that identifies the potential environmental effects (both beneficial and adverse) of a Proposed Development and proposes mitigation to avoid, reduce and offset any adverse environmental effects. Mitigation measures are recommended to prevent, reduce or remedy any potential adverse environmental effects identified. Following the implementation of mitigation measures, an assessment of the significance of any residual effects is undertaken.

The EIA considered the environmental impacts across a range of factors, in accordance with the EIA Scoping Opinion issued by the Energy Consents Unit on 15th June 2022. The conclusions of the EIA are that potential likely significant effects were identified for a number of topics (see bullet list below). However these would be reduced to a non-significant level through the application of mitigation. The only exception to this is for landscape and visual, cultural heritage and ecology and forestry (in relation to Ancient Woodland) impacts where some significant residual effects would remain.

- Seascape, Landscape and Visual Impact;
- Cultural Heritage;
- Ecology;
- Ornithology;
- Geology and Soils;
- Water Environment
- Noise and Vibration; and
- Forestry.

The EIA has also considered the potential for cumulative environmental impacts arising as a result of the Proposed Development in-combination with other reasonably foreseeable schemes (inter cumulative effects), as well as the combined or synergistic effects caused by the combination of a number of effects from the Proposed Development on a particular receptor (intra cumulative effects).

4.1 Seascape, Landscape and Visual Impact Assessment (SLVIA)

The SLVIA considers effects on seascape and landscape receptors, landscape fabric, landscape character and visual amenity. Baseline conditions were established through a desk-based review of existing information and consultation with Argyll and Bute Council and NatureScot to confirm viewpoint (VP) locations for sensitive receptors. Desktop findings were verified and augmented by targeted field surveys and all key sensitive receptor locations were visited.

4.1.1 Baseline

The landscape encompassing the Proposed Development comprises mountains incised by lochs, rivers and burns, creating a highly varied landform. The Proposed Development would be situated in areas of commercial forestry, areas of open moorland and rough pasture. Areas of broadleaved woodland are present and commercial forestry is a key land use, particularly across the hillslopes which fall towards Loch Awe.

Potential landscape receptors include:

- Designated landscapes: North Argyll Area of Panoramic Quality (APQ), Ardanaiseig House and Inveraray Castle Garden and Designated Landscape (GDL);
- Settlements. including Lochawe and Inveraray, as well as scattered residential dwellings within 1 km of the Proposed Development;
- Transport routes which include the A819, A83, A815, A85 and B845; and
- Recreational receptors (including cyclists, walkers, hill walkers, water sports enthusiasts).

4.1.2 Residual Effects

The main source of impact would be from the proposed towers and construction of new temporary and permanent access tracks. These require the removal of coniferous forestry, heather moorland and other vegetation. Careful routeing of the Proposed Development during the design stage mitigated these effects by endeavouring to avoid the most sensitive landscape and visual receptors to minimise potential significant landscape and visual effects.

During construction there would be localised, significant residual effects on the following Landscape Character Types:

- Loch Fyne Upland Forest Moor Mosaic;
- North Loch Awe Craggy Upland south Loch Awe unit; and
- Rocky Mosaic River Aray unit.

There would also be localised significant residual effects on The North Argyll APQ surrounding the northernmost towers of the Proposed Development.

There would be no significant impacts to the settlements at Inveraray and Lochawe, individual properties within 1 km of the Proposed Development, or transport routes. Two Core Paths are predicted to experience significant effects as a result of the Proposed Development during construction due to their proximity to infrastructure.

During operation there would be localised, significant residual effects on the following Landscape Character Types:

- Loch Fyne Upland Forest Moor Mosaic; and
- Rocky Mosaic River Aray unit.

In addition there would also be significant, localised residual effects on The North Argyll APQ during operation and temporary significant effects at Inveraray Castle GDL, however, these would be confined to the tower at Dun na Cuiache.

Like with the construction phase there would be no significant impacts to settlements, individual properties, or transport routes, however, two Core Paths would experience significant effects.

4.2 Cultural Heritage

The EIA has considered the potential impacts and their associated effects on archaeology and cultural heritage interests (hereafter 'heritage assets') associated with the construction and operation of the Proposed Development. Desk based assessment was conducted using documentary, archival and bibliographic sources, alongside consultation with Historic Environment Scotland (HES), Argyll and Bute Council and West of Scotland Archaeology Service (WoSAS). Targeted field survey was carried out to inspect previously recorded heritage assets identified during the desk-based assessment that are now located in areas of commercial forestry, where access was possible.

4.2.1 Baseline

A total of 47 heritage assets (sites and features) have been identified within the Inner Study Area (a 200 m wide corridor centred on the OHL). The majority of these are associated with medieval or later settlement and agricultural activities. Field survey indicates that medieval/post-medieval settlement and cultivation remains survive within open moorland and rough pasture areas that have seen little modification or development since the 19th century and it is considered that there is a medium to low potential for further buried archaeology to survive in these areas. In areas where the Proposed Development crosses commercial forestry plantation the potential for hitherto undisturbed archaeological remains to survive is negligible.

The Inner Study Area intersects the northern edge of Inveraray GDL, but there are no designated Scheduled Monuments (SM) or Listed Buildings (LB) within the Inner Study Area and it does not contain any Conservation Areas (CA) or Historic Battlefields (HB).

The Outer Study Area (a 5 km radius from the Proposed Development) contains 12 SM, 32 Category A Listed Buildings, 56 Category B Listed Buildings, 32 Category C Listed Buildings, one CA and two GDLS.

In addition, there are 17 non-statutory heritage assets (four with predicted visibility of the Proposed Development) within the Outer Study Area, including one within the Inner Study Area, that are classed in the HER as Non-Statutory Register (NSR) sites and recorded as being potentially of national importance and of schedulable quality.

4.2.2 Residual Effects

There is potential for construction works within the Inner Study Area to cause direct effects on nine heritage assets. In addition, 22 heritage assets lie within the LOD and could be affected by micro-siting of proposed towers or access tracks. In the absence of mitigation, 16 of the heritage assets have the potential to be significantly effected by the Proposed Development, while the remaining heritage assets would not be significantly effected. However, with the implementation of mitigation as set out in the EIA, effects would be avoided or reduced so that there would be no significant residual effects during construction.

In the Outer Study Area the cultural heritage assessment concluded there would be a moderate adverse and therefore significant effect during operation on the setting of one NSR Site (Kilmun Chapel and Burial Ground (1581)). The Proposed Development would result in discernible changes to the surroundings of this heritage asset, although the monument would not be isolated from its surroundings, and its setting would not be appreciably fragmented. It would remain possible for any visitor to the monument to understand and appreciate its setting. As such the integrity of the setting of the monument and its capacity to inform and convey its cultural significance, would not be compromised.

The cumulative effect of the Proposed Development in combination with other cumulative developments in the vicinity is considered to be not significant.

4.3 Ecology

The EIA has considered potential impacts and their associated effects on ecological features including sensitive habitats and protected species surveys in line with relevant guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM). Baseline conditions have been collected through a desk-based review of existing information, field-survey and consultation with relevant statutory and non-statutory bodies, including NatureScot.

4.3.1 Baseline

No statutory designated nature conservation sites for ecological features occur within the Ecology Study Area. The dominant habitats in the vicinity of the Proposed Development are coniferous woodland plantation, wet heath and blanket bog. There is one area of ancient woodland and eight areas of semi-natural woodland that are crossed by the Proposed Development. Two moderate potential and two high potential Groundwater Dependent Terrestrial Ecosystems (GWDTEs) were recorded in the Ecology Field Survey Area. Protected species surveys identified the presence of bat roost potential (BRP) trees, pine marten and water vole.

4.3.2 Residual Effects

Without the application of mitigation, significant effects during construction would likely include felling of Ancient Woodland; loss of peatland habitat (wet heath and blanket bog); and pollution to aquatic habitats impacting protected species such as otter and water vole.

Following the application of mitigation which would be detailed in the Construction Environmental Management Plan (CEMP) and include pre-construction protected species surveys, and post

construction peatland restoration and habitat reinstatement, no significant adverse residual effects on peatland, otter and water vole are predicted.

Significant adverse residual effects on 0.34 ha of Ancient Woodland as a result of felling are however predicted, although native woodland retention measures would be employed where possible and compensatory planting will be undertaken.

Significant cumulative adverse effects are also predicted on Ancient Woodland between the surrounding cumulative developments and the Proposed Development.

During operation of the Proposed Development, maintenance activities would involve regular inspections to identify deterioration or damage. As a result, effects from maintenance activities are considered to be not significant.

4.4 Ornithology

The EIA has considered potential impacts and their associated effects on birds and bird related features (such as designated nature conservation sites designated for breeding birds and other protected bird species) in line with relevant guidance from CIEEM. Baseline conditions have been collected through a desk-based review of existing information, field-survey, and consultation with relevant statutory and non-statutory bodies, including NatureScot and the Royal Society for the Protection of Birds (RSPB).

4.4.1 Baseline

The Proposed Development is within 100 m of the Glen Etive and Glen Fyne Special Protection Area (SPA) classified for breeding golden eagle. The Proposed Development runs between three golden eagle territories all of which have the potential to have connectivity with the Proposed Development. Surveys recorded low levels of golden eagle flight activity and no significant impacts on the species, or the SPA are predicted. Field surveys recorded one black grouse lek within the Ornithological Field Survey Area and territories were identified of white-tailed eagle, hen harrier, merlin and common buzzard as well as likely territories of goshawk and barn owl.

4.4.2 Residual Effects

Potential impacts on ornithological receptors during construction include destruction or disturbance of species' nests or black grouse leks. Potential impacts would be mitigated through Bird Species Protection Plans (SPP), pre-construction surveys, felling outwith the breeding bird season, and monitoring to be undertaken by the Ecological Clerk of Works (ECoW) such that no significant impacts are predicted.

During the operation of the Proposed Development there would be a potential collision risk for birds. Collision risk for all species is considered low and the residual effects is not considered significant.

No significant cumulative effects are predicted on ornithological receptors between the surrounding cumulative developments and the Proposed Development.

4.5 Geology and Soils

The EIA has considered potential impacts and their associated effects on geology and soils, particularly impacts on peat and carbon rich soils. Baseline conditions have been collected through a desk-based review of existing information. Peat depth probing was undertaken within the Proposed Development area in April and June 2022.

4.5.1 Baseline

The Scottish Natural Heritage (SNH) carbon rich soils, deep peat and priority habitat mapping¹ shows limited areas of peat to the north and south of the Site located on forestry. The survey results indicate that most of the Site has either no peat present or has a shallow depth of peat present.

4.5.2 Residual Effects

Construction

Without the application of mitigation, changes to local soils and peat habitats could occur as a result of:

- Compaction of soils;
- Potential for increased erosion of peat soils through disturbance, either through direct disturbance/peat landslide or localised drying caused by infrastructure; and
- Loss of peatland habitats and carbon rich soils through excavations for infrastructure and/or peat landslides.

Following the application of mitigation which will be set out and implemented through the CEMP and Peat Management Plan (PMP) no significant residual effects are predicted. No potential operational phase impacts on peat and carbon rich soils are anticipated.

No significant cumulative effects are considered to occur to hydrological or hydrogeological receptors.

4.6 Water Environment

The EIA has considered potential impacts and their associated effects on hydrology and hydrogeology associated with the construction and operation of the Proposed Development. Baseline conditions have been collected through a desk-based review of existing information, consultation with Scottish Environmental Protection Agency, Scottish Water and Argyll and Bute Council to identify water abstractions and private water supplies (PWS).

A field survey of the watercourses that would be crossed by the Proposed Development was undertaken to determine the hydrological context of the Proposed Development and gain a more detailed understanding of the sensitivities associated with the main watercourses.

4.6.1 Baseline

The Proposed Development is located wholly within the catchment of the River Aray and crosses a large number of tributaries that flow in an easterly direction into the River Aray.

Ecological surveying identified a number of habitats across the Site with potential (based on species present only) to be Highly or Moderately groundwater dependent. Further desk-based assessment of these GWDTE habitats concluded the majority of habitats are not groundwater dependent but rely on surface water.

Twelve PWS have been identified which are Either within 250 m of or considered in potential hydrological connectivity to the Proposed Development.

4.6.2 Residual Effects

Without the application of mitigation, significant effects could occur to the sensitive hydrological receptors listed above due to chemical pollution, increased sedimentation and changes to flow rates and volumes. Mitigation which will be set out in the CEMP and which will include detailed Pollution Prevention Plans (PPP) are predicted to result in no significant residual effects on water resources.

¹ Scottish Natural Heritage. (2016). Carbon and Peatland 2016 map (http://map.environment.gov.scot/soil_maps/) [Accessed July 2022]

No significant cumulative hydrological effects on the River Aray and its tributaries are anticipated if construction of the Proposed Development and surrounding cumulative proposed developments were to occur at the same time.

4.7 Traffic and Transport

The EIA has considered the potential traffic and transport effects associated with the construction and operation of the Proposed Development on the surrounding public road network and sensitive receptors. The traffic and transport Study Area characteristics have been determined by desk-based assessment and publicly available annual average daily traffic (AADT) count data from the Department for Transport (DfT).

4.7.1 Baseline Conditions

The main transport routes which will be impacted by the Proposed Development are the A819 and the A83 Trunk Road A83(T). Construction traffic would comprise construction staff in private cars, and HGVs / LGVs carrying construction materials, personnel, and plant equipment.

4.7.2 Residual Effects

Construction of the Proposed Development will lead to a temporary increase of traffic volumes on the A819 and A83(T). The maximum traffic effect associated with the Proposed Development is an additional 40 car and 74 Heavy Goods Vehicle (HGV) movements per day.

The assessment of the potential environmental effects concludes that the impact to road links within the Study Area would not be significant.

A Construction Traffic Management Plan (CTMP) would be implemented as a good practice measure to ensure the impact of the Proposed Development on the public road network are minimised as far as practicable. The CTMP will identify the programme of works, the agreed routes to site, details of a site Liaison Officer who would have responsibilities for managing traffic and transport impacts and effects and will also identify measures to manage / reduce construction staff travel by private car, particularly single occupancy trips.

4.8 Noise and Vibration

The EIA has considered potential impacts and their associated effects on Noise Sensitive Receptors (NSRs) within the 1 km of the Site.

4.8.1 Baseline

A total of nine NSRs were identified. Baseline noise measurements were conducted at these NSRs to establish representative background noise levels. Consultation was undertaken with ABC and a desk-based construction noise appraisal was completed to assess the effects of all construction works on any nearby residents. The assessment has been produced in line with British Standard 5228-1:2009 +A1:2014 (BS5228), Code of Practice for Noise and Vibration Control on Construction and Open Sites.

Baseline NSRs in the assessment are defined as residential properties and other sensitive buildings within 1 km of the Proposed Development. All NSRs considered in this assessment are residential in nature and for the purposes of the assessment are rated as Moderate sensitivity for a conservative assessment due to the rural nature of the surroundings.

4.8.2 Residual Effects

The impact of construction noise at receptors is below noise limits, and therefore rated as Minor and not significant. Whilst no additional mitigation is required, construction noise would be managed via a CEMP, which would be prepared by the Principal Contractor prior to construction works and would set out best practice measures to be implemented during the construction phase.

4.9 Forestry

The forestry assessment has considered potential impacts and their associated effects on the forestry resource, forest management and forest access during construction and operation. The desk study comprised consultation with Scottish Forestry and landowners and a review of existing forest data provided by the landowners on woodland type (species/age class) and the existing woodland management regime. Field surveys were undertaken to confirm the extent of woodland areas affected by the Proposed Development and assess the current woodland characteristics.

4.9.1 Baseline

Woodland Habitat Types identified during surveys recorded: broadleaved woodland of which native broadleaved woodland (1.41 ha); broadleaved woodland of which ancient woodland (0.34 ha); other broadleaves (0.85 ha); and coniferous plantation woodland (24.21 ha).

The routing process sought to avoid woodland where possible, while taking account of other environmental, technical and cost constraints. The Proposed Development would pass through 1.68 km of woodland, and potentially impact on up to 41.68 ha of woodland.

4.9.2 Residual Effects

Direct construction impacts include the loss of areas of forest through woodland removal to create the OC and access. Indirect construction impacts include increased windthrow.

Operational impacts include woodland removal associated with periodic vegetation management, changes to forest management systems and restrictions on forest access.

The Proposed Development would result in an impact on low sensitivity 24.21 ha of coniferous woodland and a more sensitive 2.6 ha broadleaved woodland. No significant effects on conifer plantation during construction are predicted based on the area of woodland removal or considering the potential for increased windthrow. The effects on the broadleaved woodland of predominantly oak classification, including Ancient Woodland, were assessed as significant, based on the impact of a noticeable change over a limited area. To reduce impacts, the application would reduce the OC felling where possible and seek to retain woodland features in areas where existing tree cover does not breach safety clearances and construction activities.

The assessment identified the potential for significant effects (pre-mitigation) on forest management, due to the requirement for forest managers to amend current objectives, plans and techniques for their forest, in particular, to incorporate the felling requirements for the OC into their long-term felling. The Applicant has proposed mitigation in the form of a commitment to develop 'OHL Woodland Reports' for each land ownership which would reduce the residual effect to not significant.

There would be no significant operational effects on woodland removal or forest access.

The Applicant is committed to meeting the Scottish Government's Control of Woodland Removal Policy (CoWRP) objective of no net loss of woodland for the Proposed Development. On this basis the Applicant will replant the area of woodland removed for the Proposed Development. This will be achieved in the form of Compensatory Planting Scheme agreements with landowners within the ABC boundary. On this basis the Applicant will replant the area of woodland (41.68 ha) removed for the Proposed Development.

5. CUMULATIVE EFFECTS

There are two aspects to Cumulative Effects, defined as follows:

- In-combination effects: the combined effect of the Proposed Development together with other reasonably foreseeable development (both during construction and operation); and
- Intra-cumulative effects (effect interactions): the combined or synergistic effects caused by the combination of a number of effects on a particular receptor which may collectively cause a more significant effect than individually. A theoretic example is the culmination of disturbance from dust, noise, vibration, artificial light, human presence and visual intrusion on sensitive fauna (e.g. certain bat species) adjacent to a construction site.

5.1 In-Combination Effects

In consultation with ABC, a number of developments with the potential for cumulative effects were identified within 15 km of the Proposed Development. The cumulative assessment considers developments recorded as consented (under construction or not yet constructed), those in planning, at scoping stage and those deemed reasonably foreseeable. The latter two categories of development are included as this area is considered a development “hotspot” with clusters of development in various stages in close proximity to the Proposed Development by consultees. In this regard, schemes forming part of the Argyll and Kintyre 275 kV Strategy which are not yet in-planning have been considered on the basis they are reasonably foreseeable. Cumulative developments considered in the assessment comprise substation and OHL works, hydropower projects, wind farm developments, commercial forestry schemes and other small infrastructure projects.

In-combination effects have been assessed within each of the Technical Assessments (**Technical Chapters 6-14, EIAR Volume 2**). By way of a summary, given the nature of and location of the cumulative schemes, significant in-combination effects are likely to arise in respect of the following:

- Potential loss of Ancient Woodland, BRP trees, peatland and GWDTE as an irreplaceable resource, in-combination with the Blarghour Wind Farm Connection and Inveraray to Crossaig 275 kV OHL Reinforcement.
- Two heritage assets, former military road (HA4) and the route of a former drove road (HA3) may be directly impacted by ground disturbance works relating to both the Creag Dhubh to Inveraray 275 kV OHL connection and the proposed Creag Dhubh Substation, which would utilise the same access track alignment which follows an existing forestry track that overlies the former military (drove) road route.
- The setting of heritage assets in the Outer Study Area along with the Inveraray Castle GDL may be affected in-combination with Blarghour Wind Farm, Car Dubh Wind Farm, Ladyfield Wind Farm and the Creag Dhubh to Dalmally 275 kV connection, ITE/ITW connection to the proposed Creag Dhubh Substation and Blarghour Wind Farm Connection.
- In-addition effects (attributable specifically to the Proposed Development when considered in conjunction with other energy developments) at four Landscape Character Areas (LCAs) and North Argyll APQ and in-combination effects (the total effect of the Proposed Development and other energy developments, taken together) to three LCAs and localised effects around Loch Awe.
- Potential impacts during the construction stage, such as those relating to hydrology and hydrogeology, peat, ecology and ornithology, transport and noise, would be managed through the implementation of the CEMP and associated management plans (e.g., CTMP, PMP and Habitat Management Plan (HMP)). Furthermore, given SSEN Transmission is the Applicant for a number of the cumulative schemes as part of the wider Argyll and Kintyre 275 kV Strategy (Creag Dhubh Substation, Creag Dhubh to Inveraray 275 kV OHL and ITE/ITW Connection),

these potential impacts would be managed collectively by the Applicant via the implementation of the CEMPs and management plans.

5.2 Effect Interactions

Potential effect interactions during the construction phase of the Proposed Development are likely to arise at the following receptors / receptor groups:

- GWDTEs between Ecology and the Water Environment;
- Peatland between Ecology and Geology and Soil;
- Ancient woodland between Ecology and Forestry;
- Residential properties between Landscape and Visual and Noise;
- Transport routes as a result of visual impacts (LVIA) and increased accident risk (Traffic and Transport); and
- Recreational receptors between LVIA and Traffic and Transport.

Potential effect interactions during the operational phase of the Proposed Development are likely to arise at residential properties as a result of visual and noise impacts, and transport routes as a result of visual and traffic impacts.

6. CONCLUSION

The Applicant is proposing to construct and operate an 9 kilometre (km) double circuit 275 kV OHL, supported by lattice steel towers between a proposed substation at Creag Dhubh (subject to a separate planning application) to the recently constructed Inveraray-Crossaig 275 kV capable OHL circuit.

There is a requirement for the Applicant to increase its network capability in Argyll and Kintyre, beyond that already under current construction, to enable the connection of further renewable energy generation and to export to the wider GB network. This group of works designed to deliver the required increase in network capacity has been named the 'Argyll and Kintyre 275 kV Strategy'. The Proposed Development forms part of this strategy.

Consultation with statutory and non-statutory consultees was carried out throughout the design evolution and EIA process, in addition to virtual public exhibitions, in order to invite comment on the Proposed Development itself and specific areas of environmental assessment to incorporate into the EIA.

Through EIA scoping and stakeholder consultation it was agreed that the following environmental topics would have the potential for likely significant effects resulting from the Proposed Development or required additional information: Landscape Character and Visual Impact; Cultural Heritage; Ecology; Ornithology; Geology and Soils; Water Environment; Traffic and Transport; Noise and Vibration; and Forestry.

As a result of a combination of design-led mitigation and additional proven construction phase mitigation measures, the EIA Report concludes no residual significant effects during construction are identified for cultural heritage, ornithology, geology and soils, water environment, traffic and transport and noise and vibration. Likely significant residual effects during construction are however associated with the Proposed Development to landscape character, designated landscapes (APQ), visual impacts to core paths, and ecology and forestry as a result of Ancient Woodland loss.

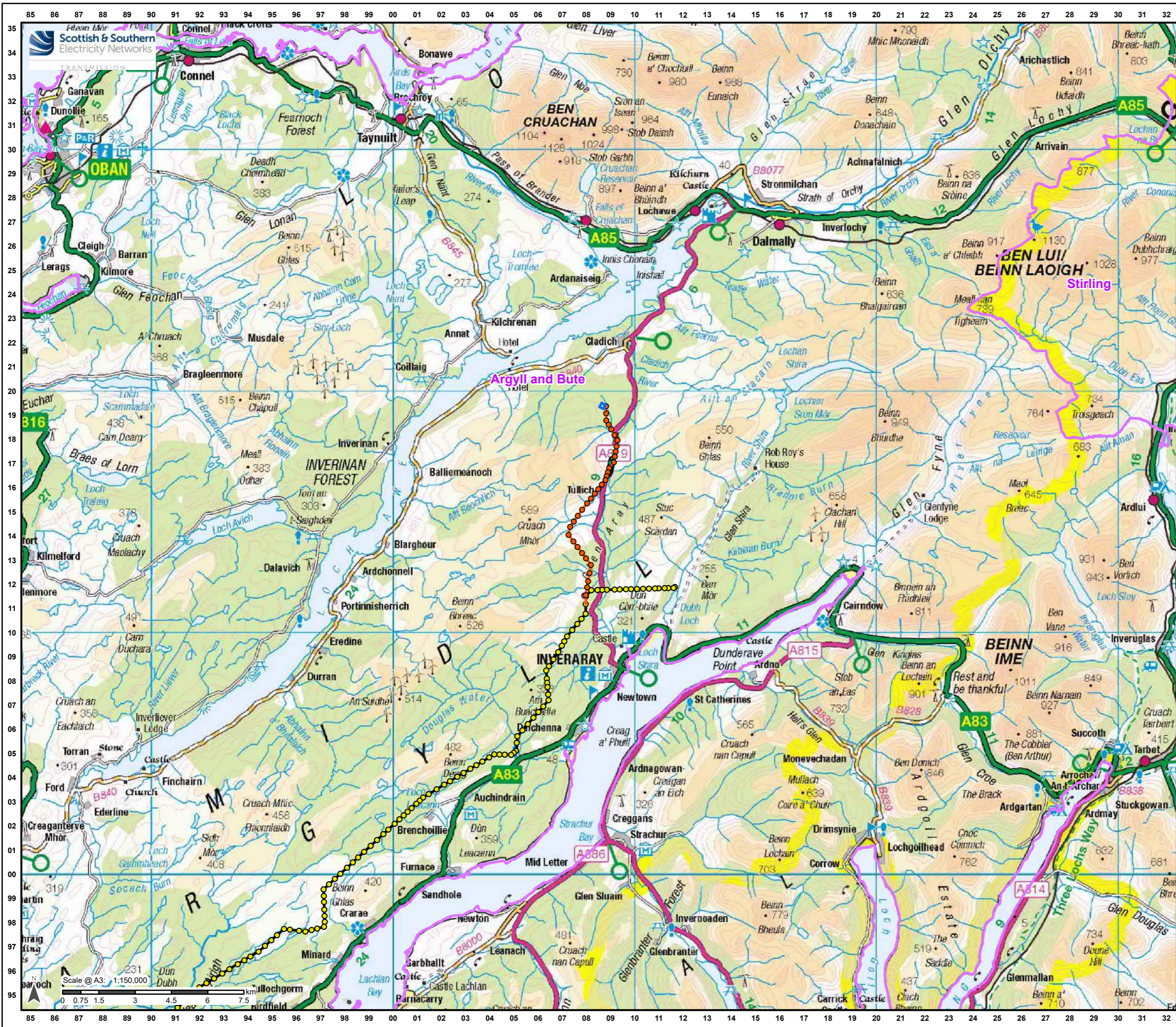
The operational phase of the Proposed Development would give rise to significant residual effects on landscape character, localised significant effects on designated landscapes (APQ), visual impacts to core paths and on the cultural heritage asset Kilmun Chapel and Burial Ground (NSR Site - 1582). No significant residual operational effects have been identified for ornithology, geology and soils, water environment, traffic and transport and noise and vibration.

Significant in-combination cumulative impacts between the Proposed Development and other developments within a 15 km radius of the Site have been identified for landscape, cultural heritage and ecology in terms of impact to Ancient Woodland. No significant intra-cumulative effects on common receptors between topics have been identified.

7. ABBREVIATIONS

AADT	Annual Average Daily Traffic
APQ	Area of Panoramic Quality
BRP	Bat Roost Potential
CA	Conservation Areas
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CoWRP	Scottish Government's Control of Woodland Removal Policy
CTMP	Construction Traffic Management Plan
DfT	Department for Transport
ECoW	Ecological Clerk of Works
ECU	Energy Consents Unit
EIA	Environmental Impact Assessment
EIA Report	Environmental Impact Assessment Report
GDL	Garden and Designated Landscape
GWDTes	Groundwater Dependent Terrestrial Ecosystems
HB	Historic Battlefields
HES	Historic Environment Scotland
HGV	Heavy Goods Vehicle
HMP	Habitat Management Plan
ITE/ITW	Taynuilt East/ Inveraray to Taynuilt West 132 kV OHL
km	Kilometre
LB	Listed Buildings
LCAs	Landscape Character Areas
LOD	Limit of Deviation
NSR	Non-Statutory Register
NSRs	Noise Sensitive Receptors
OCEMP	Outline Construction Environmental Management Plan
OHL	Overhead Line
PMP	Peat Management Plan
PPP	Pollution Prevention Plans
PWS	Private Water Supplies
RSPB	Royal Society for the Protection of Birds
SLVIA	Seascape, Landscape and Visual Impact Assessment
SM	Scheduled Monuments
SNH	Scottish Natural Heritage

SPA	Special Protection Area
SSEN	Southern and Southern Electricity Networks
UXO	Unexploded Ordnance
VP	Viewpoint
WoSAS	West of Scotland Archaeology Service

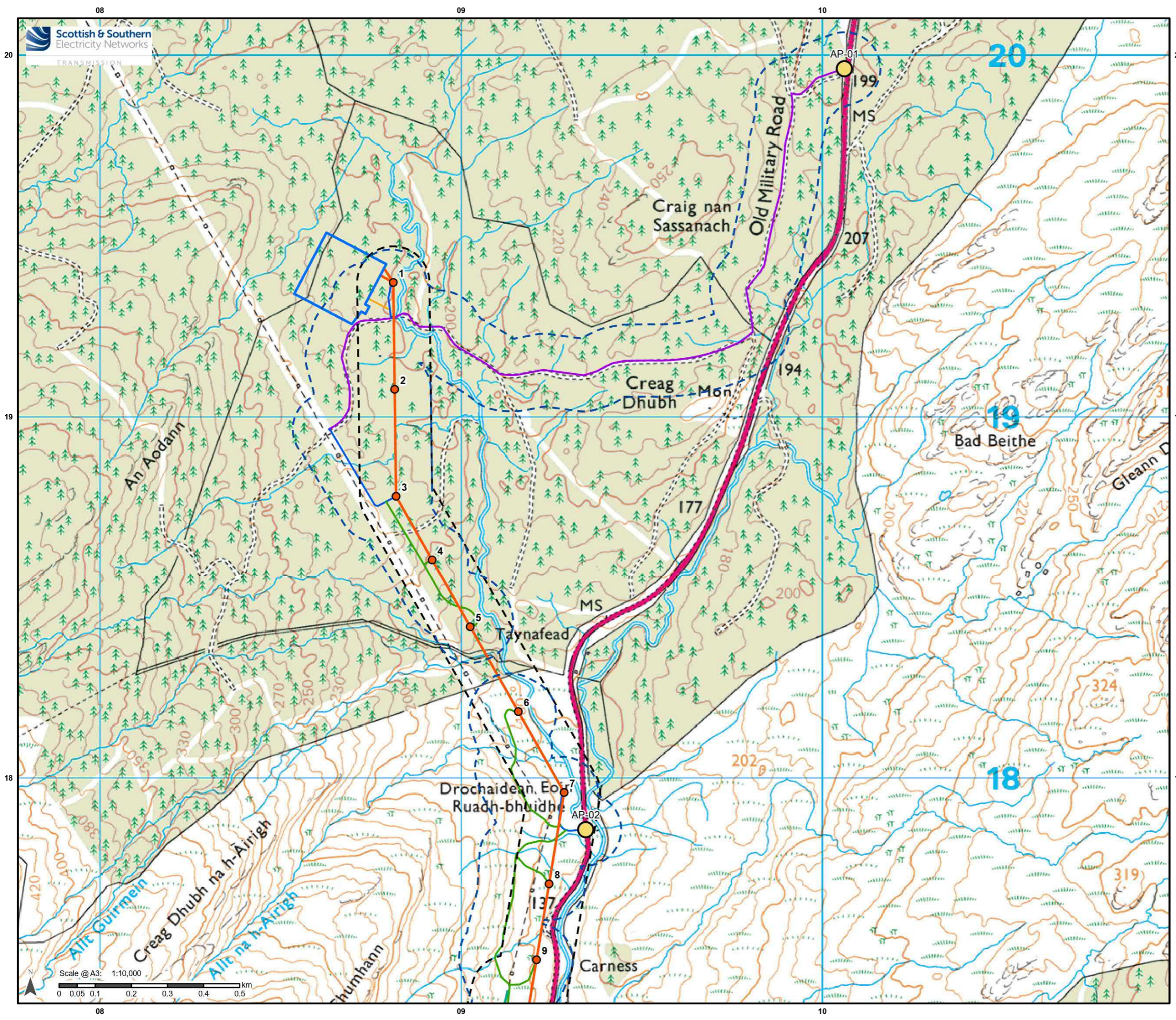


- ### Legend
- Inveraray - Crossaig Towers
 - Inveraray - Crossaig OHL
 - Proposed Alignment Towers
 - Proposed Alignment
 - Proposed Creag Dhubh Substation (Separate Application)
 - Local Authority Boundaries
- Temporary Diversions
- ITE / ITW 132 kV Diversion Towers
 - 275 kV Diversion Towers
 - ITE / ITW 132 kV Diversion
 - 275 kV Diversion



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Project No:	LT000194
Project:	1620011091
Title:	Creag Dhubh to Inveraray 275 kV Overhead Line
	Figure 1: Location Plan and Overview
Drawn by:	NJ
Date:	04/10/2022
Drawing:	R162_11091_Fig1_LocationPlan_A



Legend

- Proposed Alignment Towers
- Proposed Alignment
- Proposed Craeg Dhubh Substation (Separate Application)
- - - OHL Limit of Deviation (LOD; 100 m)
- - - Access Tracks Limit of Deviation (LOD; 100 m)
- Temporary Diversions
 - ITE / ITW 132 kV Diversion
- New Access Tracks
 - Craeg Dhubh Access Track
 - Access Tracks - Track To Be Maintained
 - Proposed Access Route (Perm)
 - Proposed Access Route (Temp)
- Bellmouth Junctions

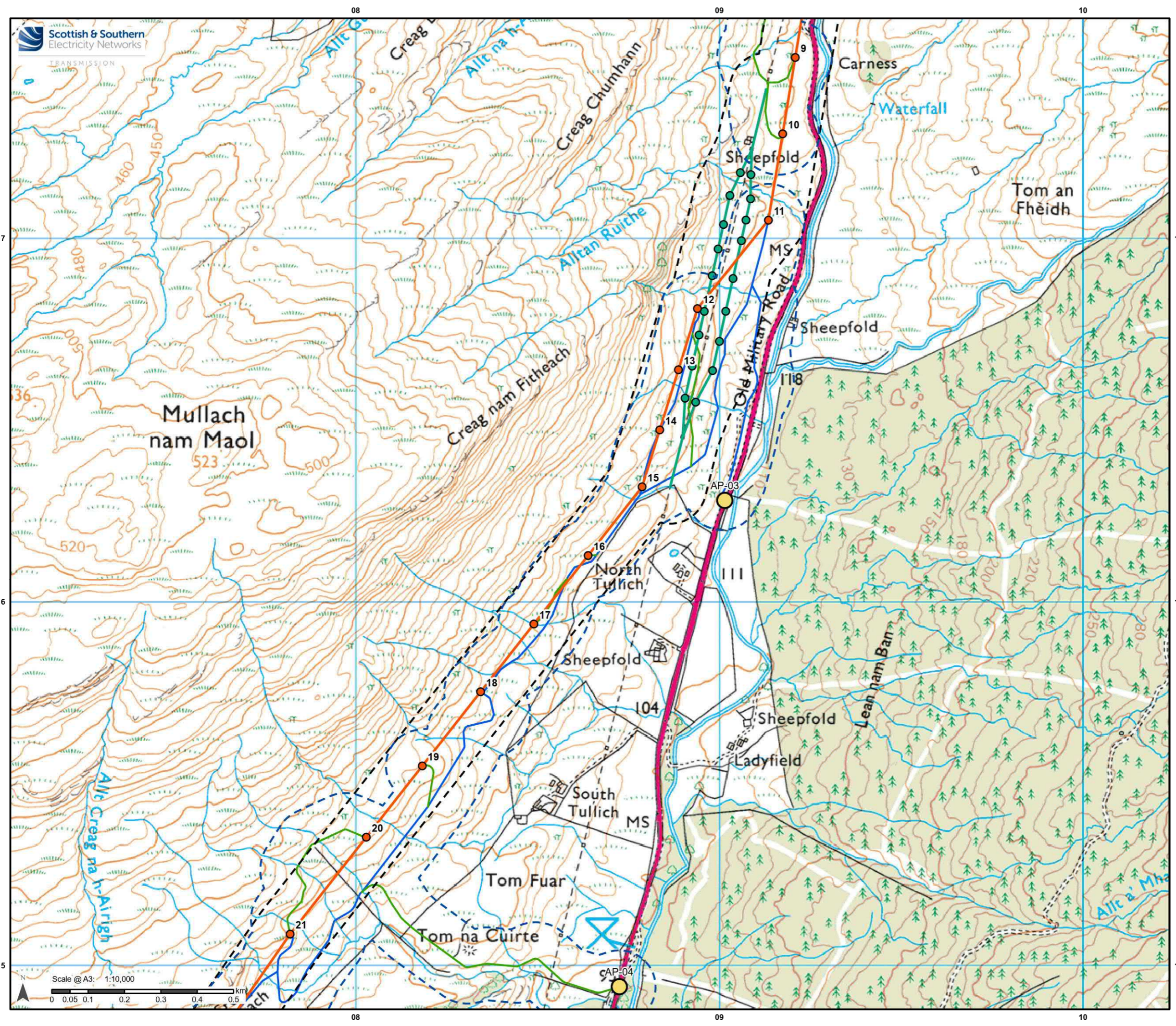
Ref.	Status
AP-01	Covered by planning application ref 22/00782/PP & ECU ref ECU 00002199
AP-02	Existing bellmouth to be widened and upgraded

ITE / ITW: Existing 132 kV overhead line that connects Inveraray Switching Station to Taynuilt Substation. Inveraray Taynuilt East and West refers to the names of the east and west circuit on the overhead line.



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Project No:	LT000194
Project:	1620011091
Title:	Craeg Dhubh to Inveraray 275 kV Overhead Line Figure 2a: Proposed Development
Drawn by:	NJ
Date:	04/10/2022
Drawing:	R162_11091_Fig2_ProposedDevelopment_A



Legend

- Proposed Alignment Towers
- Proposed Alignment
- OHL Limit of Deviation (LOD; 100 m)
- Access Tracks Limit of Deviation (LOD; 100 m)
- Temporary Diversions
- ITE / ITW 132 kV Diversion Poles
- New Access Tracks
- Proposed Access Route (Perm)
- Proposed Access Route (Temp)
- Bellmouth Junctions

Ref.	Status
AP-03	New bellmouth proposed
AP-04	New bellmouth proposed

ITE / ITW: Existing 132 kV overhead line that connects Inveraray Switching Station to Taynuilt Substation. Inveraray Taynuilt East and West refers to the names of the east and west circuit on the overhead line.

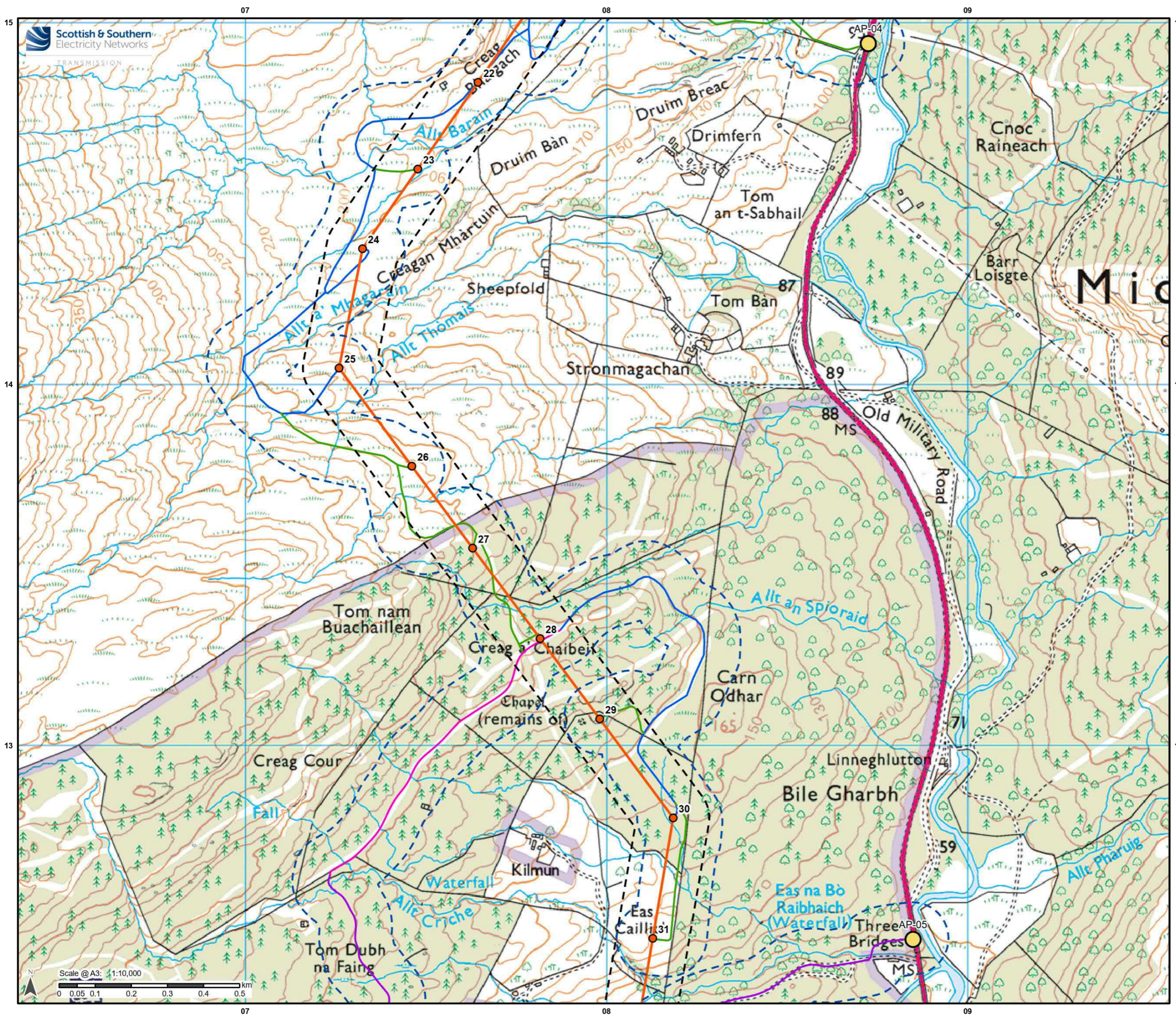


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Project No: LT000194
 Project: 1620011091
 Title: Creag Dhubh to Inveraray 275 kV Overhead Line
 Figure 2b: Proposed Development

Drawn by: NJ Date: 04/10/2022

Drawing: R162_11091_Fig2_ProposedDevelopment_A



Legend

- Proposed Alignment Towers
- Proposed Alignment
- OHL Limit of Deviation (LOD; 100 m)
- Access Tracks Limit of Deviation (LOD; 100 m)
- New Access Tracks**
- Access Tracks - Track To Be Maintained
- Proposed Access Route (Perm)
- Proposed Access Route (Temp)
- Existing Access Tracks Upgrade
- Bellmouth Junctions

Ref.	Status
AP-04	New bellmouth proposed
AP-05	Existing bellmouth, no works proposed

ITE / ITW: Existing 132 kV overhead line that connects Inveraray Switching Station to Taynuilt Substation. Inveraray Taynuilt East and West refers to the names of the east and west circuit on the overhead line.



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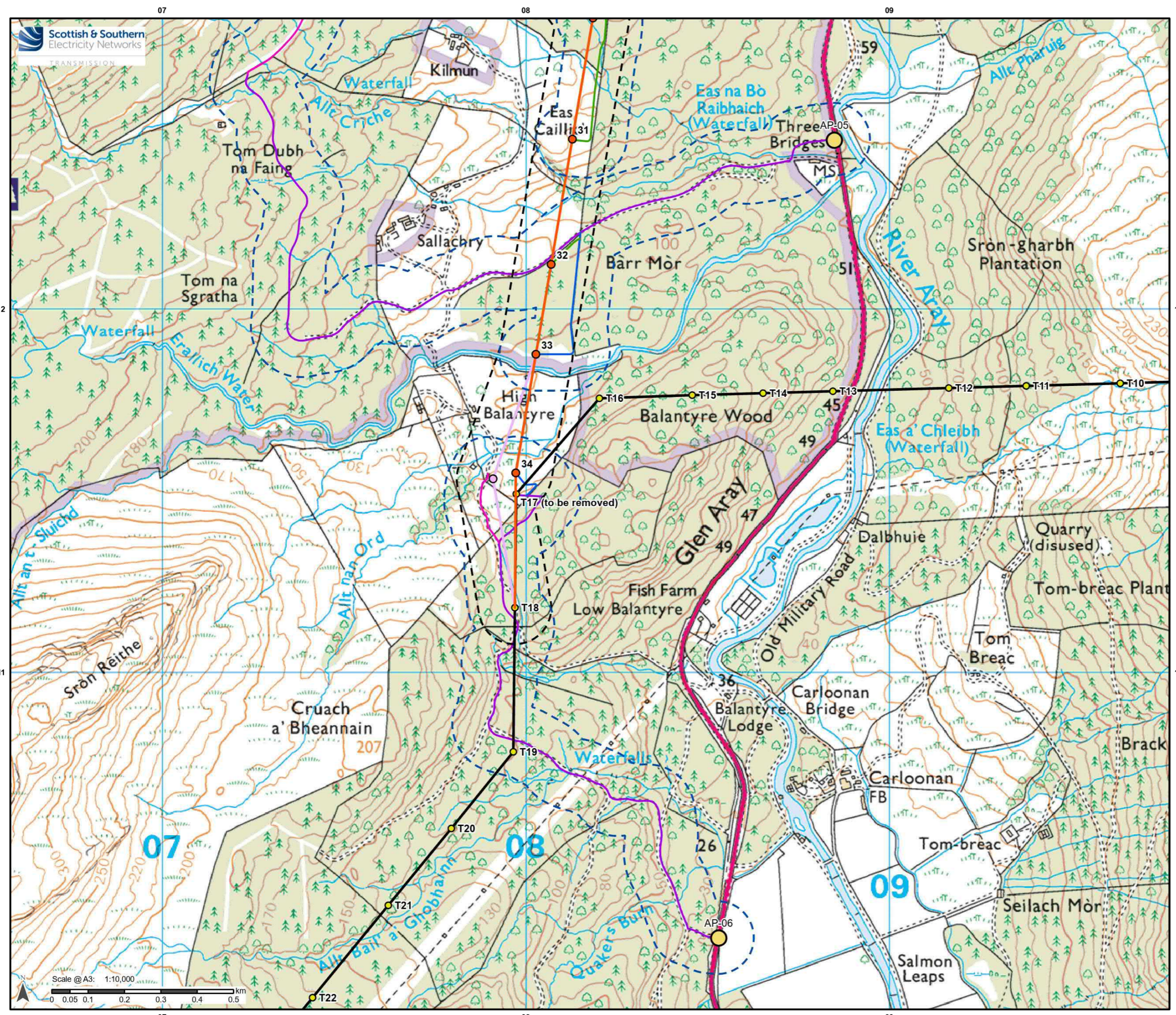
Project No: LT000194
Project: 1620011091

Title: Creag Dhubh to Inveraray 275 kV Overhead Line
Figure 2c: Proposed Development

Drawn by: NJ Date: 04/10/2022

Drawing: R162_11091_Fig2_ProposedDevelopment_A





Legend

- Proposed Alignment Towers
- Proposed Alignment
- Inveraray - Crossaig Towers
- Inveraray - Crossaig OHL
- OHL Limit of Deviation (LOD; 100 m)
- Access Tracks Limit of Deviation (LOD; 100 m)
- Temporary Diversions
- 275 kV Diversion Towers
- New Access Tracks
- Access Tracks - Track To Be Maintained
- Proposed Access Route (Perm)
- Proposed Access Route (Temp)
- Existing Access Tracks Upgrade
- Bellmouth Junctions

Ref.	Status
AP-05	Existing bellmouth, no works proposed
AP-06	Existing bellmouth, no works proposed

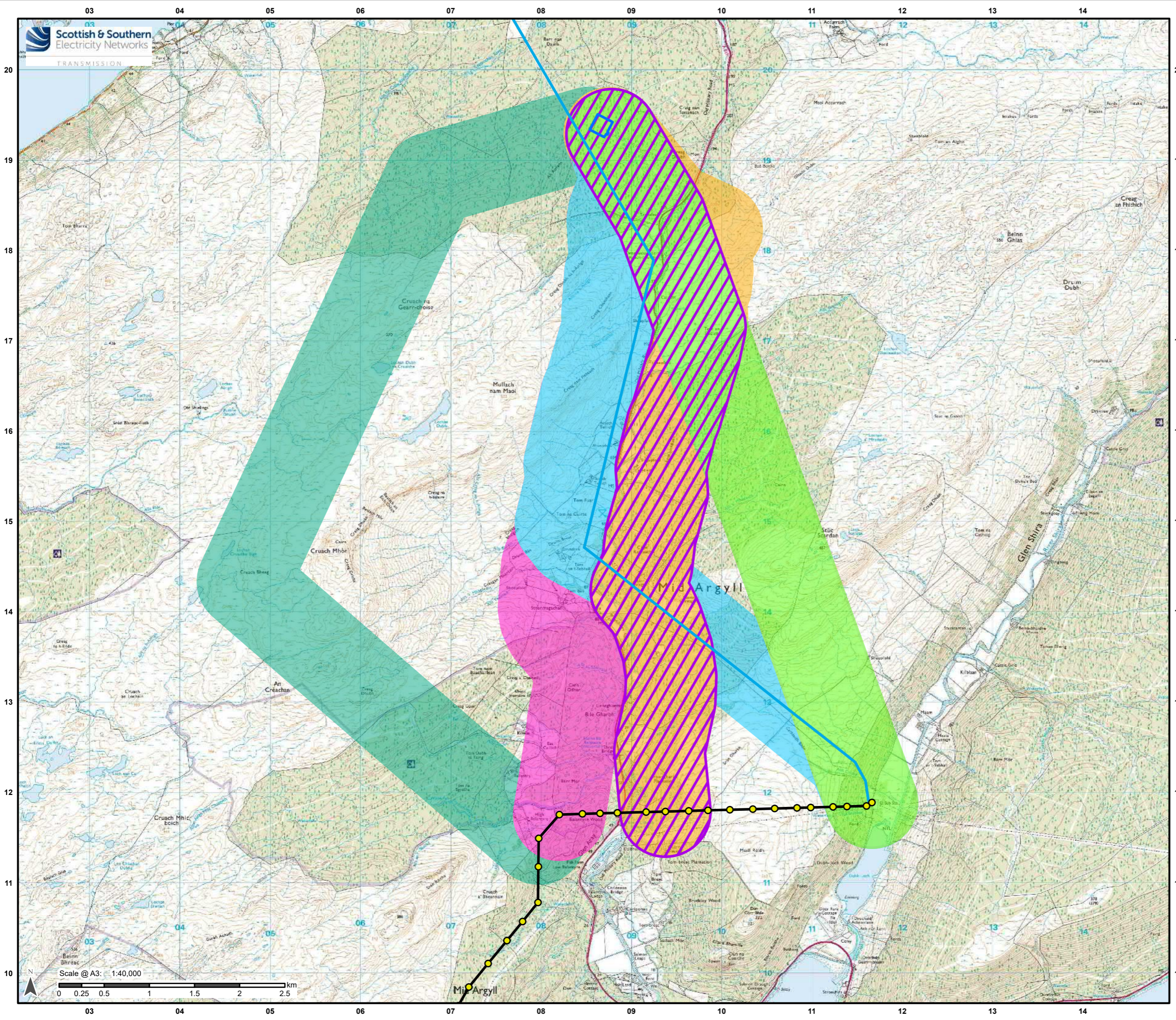
ITE / ITW: Existing 132 kV overhead line that connects Inveraray Switching Station to Taynuilt Substation. Inveraray Taynuilt East and West refers to the names of the east and west circuit on the overhead line.



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Project No:	LT000194
Project:	1620011091
Title:	Creag Dhubh to Inveraray 275 kV Overhead Line Figure 2d: Proposed Development
Drawn by:	NJ
Date:	04/10/2022
Drawing:	R162_11091_Fig2_ProposedDevelopment_A





Legend

- Inveraray - Crossaig Towers
 - Inveraray - Crossaig OHL
 - Proposed Creag Dhubh Substation (Separate Application)
 - Preferred Route Option DE Buffer (500 m)
 - 132kV OHL from Inveraray to Taynuilt
- Route Option Buffer (500 m)
- A
 - B
 - C
 - D
 - E



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Project No: LT000194
Project: 1620011091

Title: Creag Dhubh to Inveraray 275 kV Overhead Line
Figure 3: Routing Options

Drawn by: NJ Date: 04/10/2022

Drawing: R162_11091_Fig3_RouteingOptions_A

Scale @ A3: 1:40,000
0 0.25 0.5 1 1.5 2 2.5 km



TRANSMISSION