

Appendix 4.2:

Indicative Grid

Connection Assessment

This page is intentionally blank.



Indicative Grid Connection Assessment

Shepherds' Rig Wind Farm

SETT Wind Development

Prepared by:

SLR Consulting Limited

The Tun, 4 Jackson's Entry, Edinburgh, EH8 8PJ

SLR Project No.: **405.VT2874.00001**

23 June 2026

Revision: 2.0

Table of Contents

1.0	Introduction	1
1.1	Background	1
1.2	Approach to Assessment	1
1.3	Assumptions.....	2
2.0	Proposed Varied Development and Grid Connection Description	3
2.1	The Proposed Varied Development	3
2.2	Proposed Grid Route.....	3
2.3	Proposed Grid Connection Design	4
3.0	Assessment of Likelihood of Significant Environmental Effects	4
3.1	Introduction	4
3.2	Forestry	5
3.3	Landscape and Visual.....	6
3.4	Ecology and Biodiversity	7
3.5	Cultural Heritage and Archaeology	9
3.6	Geology, Peat, Hydrology and Hydrogeology	10
3.7	Traffic and Transport.....	12
3.8	Noise and Vibration	12
3.9	Other Issues.....	13
4.0	Conclusion.....	14
4.1	Summary of Likely Significant Effects	14



Acronyms and Abbreviations

BESS	Battery Energy Storage System
BGS	British Geological Survey
BPM	Best Practicable Means
BS	British Standard
CEMP	Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
ECU	Energy Consents Unit
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
GPP	Guidance for Pollution Prevention
GSP	Grid Supply Point
GWDTE	Groundwater Dependent Terrestrial Ecosystems
kV	Kilovolt
LCT	Landscape Character Type
m	Metre
MW	Megawatt
OHL	Overhead Line
PGR	Preferred Grid Route
PWS	Private Water Supply
SEPA	Scottish Environment Protection Agency
SM	Scheduled Monument
SPEN	ScottishPower Energy Networks
SuDS	Sustainable Drainage Systems
UGC	Underground Cable



1.0 Introduction

1.1 Background

The Proposed Varied Development will require a grid connection from the onsite substation to the Grid Supply Point (GSP), which will be subject to a separate consenting process (if required, noting that the grid connection may benefit from Permitted Development rights) by ScottishPower Energy Networks (SPEN), who are responsible for the transmission and distribution of electricity in the Proposed Varied Development. This consenting process is entirely separate from the Section 36C consent currently being sought for the Proposed Varied Development.

As outlined in **Chapter 4** of the Environmental Impact Assessment (EIA) Report, it is anticipated that the proposed grid connection will remain unchanged from the Consented Development. It is likely that the Proposed Varied Development would connect to the national transmission system via the proposed Lorg Wind Farm Grid Connection. That grid connection comprises a new trident wood-pole mounted 132 kilovolt (kV) overhead line (OHL) from Lorg Hill Wind Farm to the proposed Holm Hill Substation, located near the A713 approximately 7 km north-west of the Proposed Varied Development site, and would be operated by SPEN¹. A short underground connection of approximately 200 m would link the Proposed Varied Development substation to the Lorg Wind Farm Grid Connection, which traverses the centre of the Proposed Varied Development site.

The grid connection is the responsibility of the transmission network operator who is responsible for the design, routing, land assembly, assessment of environmental effects (including cumulative/in combination effects) and the separate consent process.

However, having regard to recent case law (Raeshaw Farms Limited v Scottish Ministers, 2026), this Appendix provides a proportionate assessment of the likely significant effects of the Proposed Varied Development together with its grid connection (as currently proposed by SPEN), having regard to the technical and environmental information currently available.

1.2 Approach to Assessment

This assessment provides an overview of the grid connection currently being proposed by SPEN. Information is provided on the grid connection type and the preferred route option (route alignment) identified by SPEN, together with a proportionate assessment of likely significant environmental effects of the grid connection in combination with the Proposed Varied Development, based on the information available to date. It is noted that the findings of this assessment could be subject to change depending on the final route and grid connection type chosen by SPEN; and the final connection alignment will be subject to SPEN's own statutory environmental duties and landowner requirements.

¹ A Section 37 application seeking consent for the new 132 kV line was submitted to the Energy Consents Unit (ECU) in November 2025 (ECU Ref: ECU00001789) by SPEN. A full EIA was undertaken in support of this application which concluded limited significant residual effects limited to Landscape and Visual effects only. Refer to **Chapter 4** of the EIA Report for further information.

This assessment considers only the grid connection route from the Proposed Varied Development substation to the point of connection (tee point) with the Lorg Grid Connection OHL. The Lorg Grid Connection OHL and its onward connection to the Holm Hill Substation forms part of the wider transmission network intended to facilitate connections for other developments within the wider area and not arising solely as a consequence of the Proposed Varied Development. As such, this infrastructure is not directly attributable to, nor dependent on, the Proposed Varied Development and is being progressed independently by SPEN. The potential for environmental effects associated with the Lorg Grid Connection OHL beyond the tee-in point are therefore not considered in this Appendix. The potential for cumulative effects arising from the Proposed Varied Development and the Lorg Wind Farm Grid Connection (the latter of which is subject to a live Section 37 application, as noted above) has been considered, where relevant, within each technical assessment chapter within Volume 1 of the EIA Report (**Chapters 7–18**).

This assessment follows the same requirements as Volume 1 of the EIA Report (refer to **Chapter 6**). Namely, this assessment follows the requirements of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 and relevant good practice guidance.

This assessment has been informed by the same legislative and best practice guidelines of core relevance to the EIA process, as those which inform the EIA Report. **Chapter 6** of the EIA Report should be consulted for more detail on relevant legislation, policy and guidelines.

The process undertaken to assess environmental effects as reported in this assessment follows the EIA process and assessment of effects outlined in **Chapter 6** of the EIA Report. The EIA Report should be consulted for more detail on the process and assessment of effects, including assessment of significance, considered in the EIA Report.

1.3 Assumptions

As noted above, the grid connection route and construction type are not certain but are assumed based on information available from ongoing communication between the Applicant and SPEN, and work undertaken by SPEN at the time of writing this Appendix.

UK case law makes clear that an EIA must address only those environmental effects that are both likely and have a sufficiently certain causal connection to the Proposed Varied Development. The Supreme Court in *R (Finch) v Surrey County Council* (2024) emphasised that effects which are uncertain, remote, or speculative fall outside the scope of what the EIA Regulations require. The Court held that only effects that can be demonstrated to arise as a real and identifiable consequence of the development must be assessed, rejecting any approach that rests on “*speculation or conjecture*.”

It should be noted that SPEN operates within a statutory and licence framework under the Electricity Act 1989 that places a duty upon them to develop and maintain an efficient, coordinated and economical system of electricity transmission in addition to having regard to environmental impacts and the mitigation of effects of their assets. In this sense, SPEN is duty bound to weigh the network efficiency and economics of connections alongside the environmental factors. Information is not available to the

Applicant at this time to inform of the network efficiency and economic factors of the options considered by SPEN.

Based on the information currently available, it is assumed that the Proposed Varied Development's grid connection will be as identified by SPEN and which is described within this Appendix. Although the grid connection route, details of its design and construction are not currently certain, and are not within the control of the Applicant, this assumption is considered to be reasonable and compliant with EIA Regulations, allowing a proportionate assessment of the likely significant effects of the grid connection in combination with the Proposed Varied Development.

2.0 Proposed Varied Development and Grid Connection Description

2.1 The Proposed Varied Development

The Proposed Varied Development will comprise 11 wind turbines up to 220 metres (m) blade tip height, as well as a battery energy storage system (BESS). The overall maximum installed capacity of the turbines will be approximately 77 megawatts (MW), supported by additional energy storage provision with a maximum output capacity of approximately 50 MW (refer to **Chapter 4** for further information).

2.2 Proposed Grid Route

SPEN have identified a Preferred Grid Route (PGR), for the proposed grid connection (see **Figure 1.1**). Based on the information currently available, it is reasonable to assume that the PGR will be the grid connection route for which SPEN applies for consent (if required). Given that the final alignment is not certain at this stage, this assessment considers the potential for the grid route to diverge from the PGR. However, it is considered reasonable to assume that any such deviation would remain within a typical micro-siting tolerance (approximately 100 m), reflecting the close proximity between the Proposed Varied Development substation and the Lorg Grid Connection OHL, together with the advanced stage of both projects (one subject to a live Section 37 application and the other benefiting from Section 36 consent for a substation in the same location as that proposed for the Proposed Varied Development), and the short length of the connection (approximately 200 m).

The PGR extends from the Proposed Varied Development substation in the north of the site to the Lorg Grid Connection OHL located approximately 200 m to the north. The Lorg Grid Connection OHL then routes north-west to the proposed Holm Hill Substation.

The PGR is entirely within the site boundary of the Proposed Varied Development, which comprises commercial coniferous woodland plantation. The site is described in detail in **Chapter 2** of the EIA Report, and remains the same as the Consented Development.

It is anticipated that the footprint of the works required to construct the grid connection would be carefully managed within a defined corridor, therefore disturbance of sensitive features would be avoided or minimised as far as possible.

2.3 Proposed Grid Connection Design

It is anticipated that the grid connection will comprise a 33kV underground cable (UGC) with a total length of approximately 200 m.

Construction of the UGC would be expected to comprise excavation of a cable trench up to approximately 1 m deep and 1.5 to 1.5 m wide (allowing for a double circuit), backfilled with suitable bedding sand, and the land reinstated following construction.

The connection to the Lorg Grid Connection OHL would be achieved via a tee point arrangement. The cable to overhead line tee point would be located at one of the proposed OHL poles. At this location, the underground cable would emerge from the ground and be terminated at a cable sealing end mounted on the pole, allowing connection to the overhead conductors. The structure would already form part of the OHL and would not require a separate compound or standalone installation, with associated infrastructure limited to standard pole-mounted electrical equipment.

As noted in **Section 1.3**, the final grid connection route, details of its design and construction are not finalised, and are not within the control of the Applicant. However, the PGR and proposed nature of construction have been developed based on good industry practice and determined by SPEN to be the most suitable options for exporting this volume of power to the grid.

3.0 Assessment of Likelihood of Significant Environmental Effects

3.1 Introduction

This assessment sets out the pertinent environmental considerations insofar as they can be identified at this stage, acknowledging that a full assessment of environmental impacts will be undertaken by SPEN when the design is finalised, and presented as part of the grid connection application, which will be subject to its own consultation and determination process (if applicable, noting the potential for Permitted Development rights to apply).

For the purposes of this assessment, it is assumed that SPEN will deliver the grid connection, and that it will do so in its capacity as an electricity licence holder and therefore in accordance with its statutory environmental duties. On this basis, it is reasonable to assume that SPEN would apply recognised best practice construction methods and incorporate appropriate environmental safeguards throughout the delivery of the grid connection.

It is assumed that as standard good practice, SPEN will commit to implementing appropriate mitigation measures, likely encapsulated within a Construction Environmental Management Plan. Such mitigation would likely include appropriate waste management, species protection and pollution prevention measures, as appropriate and required.

It is further assumed that all construction activities would comply with SEPA's Guidance for Pollution Prevention (GPP), including:

- GPP1: Understanding your environmental responsibilities – good environmental practices;
- GPP5: Works and maintenance in or near water; and

- GPP6: Working at construction and demolition sites.

For decommissioning, all effects are expected to be no greater than those arising during construction. Although not specified by SPEN at this stage, it is assumed that, in accordance with standard practice, the UGC would be made safe and left in situ, resulting in limited disturbance during decommissioning.

The following sections provide an assessment of the likely significant effects arising from the construction and operation of the grid connection itself, in combination and cumulatively with the Proposed Varied Development. The technical topics considered in the assessment (**Sections 3.2 to 3.9** below) are the same as those which are considered in the EIA Report and which will given consideration by SPEN as part of the consenting, design and construction process for the proposed grid connection.

3.2 Forestry

3.2.1 Baseline

The PGR is located within a commercial forestry plantation (refer to **Figure 1.1**). The woodland is privately owned and actively managed for timber production. The baseline forest resource is dominated by commercial conifer species, principally Sitka spruce.

No areas of Ancient Woodland are present within or in close proximity to the PGR, and while a small area of native woodland has been recorded within the wider Proposed Varied Development site boundary, no infrastructure is proposed within these areas.

3.2.2 Assessment of Likely Significant Construction/Installation Effects

There is potential for forestry to be affected by direct physical impacts associated with the construction and installation of the UGC, primarily through localised tree felling.

Commercial forestry is inherently dynamic, with woodland structure continually changing due to routine felling, restocking and management practices. The scale of disturbance associated with the UGC is therefore considered to be small in the context of ongoing forestry operations within the wider plantation.

Where tree felling is required to facilitate installation of the PGR, this is expected to be limited and undertaken in accordance with standard forestry practices. It is anticipated that felling would be limited to that only required for installation, with the majority of disturbed areas reinstated following construction. In line with the approach set out in **Chapter 7** of the EIA Report, woodland removal associated with infrastructure would typically be minimised through adherence to defined working corridors.

It is assumed that SPEN would adhere to relevant forestry policy and good practice, and that woodland loss would be addressed through a combination of on-site restocking and off-site compensatory planting as required, in accordance with the Scottish Government's Control of Woodland Removal Policy.

The combined effects of the construction and installation of the grid connection with the wider forestry changes associated with the Proposed Varied Development are not likely to result in significant additional effects on the forestry resource. Construction would be temporary, restricted in extent and would move progressively along the short linear route.

3.2.3 Assessment of Likely Significant Operational Effects

The completed UGC would be entirely below ground, resulting in no permanent above-ground structures and no ongoing operational effects on forestry. A small wayleave corridor would be maintained above the buried cable route and kept free from any restocked trees to protect the integrity of the infrastructure and allow access for inspection, maintenance and repair.

Operational forestry activities within the wider area, including felling and restocking, would continue as part of standard forest management practices. The presence of the buried cable would not materially constrain these activities, subject to standard safeguards.

Taking account of the design of the grid connection, the small scale of UGC infrastructure, and the implementation of compensatory planting where required, no significant operational effects on forestry resources are anticipated.

The combined operational effects of the grid connection alongside the Proposed Varied Development are therefore not considered likely to give rise to significant effects on woodland cover, forest structure or long-term forest management.

3.3 Landscape and Visual

3.3.1 Baseline

A baseline desk study has been used to understand the existing conditions and identify the landscape and visual receptors that have the potential to be affected by the PGR.

As the proposal relates to a UGC and considering the temporary nature of effects, as part of the construction phase, a limited visual envelope or area of influence is proposed, based on professional judgement and experience on similar projects. This area of influence is set to 500 m from the indicative UGC route and is shown on **Figures 1.1 – 1.2**.

There are no designated landscapes along the PGR or the 500 m area of influence. The NatureScot (2019) character assessment records that the PGR is located within Landscape Character Type (LCT 178) 'Southern Uplands with Forest - Dumfries & Galloway'. This is described as an expansive, gently rolling upland landscape characterised by large-scale Sitka spruce plantation forestry, interspersed with areas of more complex terrain, and influenced by ongoing forestry operations and wind farm development.

There are no residential properties within 500 m of the PGR. The closest properties are Craigengillan and Craigengillan Cottage, located over 1.5 km north-east of the PGR. Residential receptors

3.3.2 Assessment of Likelihood of Construction/Installation Effects

As the grid connection will be undergrounded, it is anticipated that landscape and visual effects would almost exclusively occur during the construction/installation phase.

Construction/installation of the grid connection would cause temporary disturbance during these phases of works. However, given the small footprint of construction/installation works relative to the wider forested landscape, coupled with

the temporary nature of works, it is considered that there is no potential for significant effects on landscape character during construction/installation.

During construction, standard good practice including limiting the working corridor, minimising vegetation removal, and ensuring prompt reinstatement of disturbed ground would help to reduce short term visual intrusion.

The contribution of the additional landscape and visual effects associated with the grid connection construction are not likely to be such that there would be the potential for combined significant effects, when considered together with the Proposed Varied Development construction.

3.3.3 Assessment of Likelihood of Operational Effects

The UGC would be largely imperceptible in the landscape during operation, and that section is not anticipated to give rise to the potential for any significant landscape or visual effects. Consequently, no in-combination operational effects are anticipated between the Proposed Varied Development and the PGR.

3.4 Ecology and Biodiversity

3.4.1 Baseline

The PGR traverses a habitat of coniferous woodland plantation, dominated by non-native commercial tree species of low ecological value and generally low biodiversity. This habitat has historically been extensively felled and replanted.

There are no designated sites within or near to the PGR. The nearest designated site is Cleugh Site of Special Scientific Interest (SSSI), located approximately 6.8 km south of the PGR.

3.4.2 Assessment of Likelihood of Construction/Installation Effects

There is potential for habitats and protected species to be impacted by direct physical effects of construction/ installation of an UGC.

It is anticipated that the potential impacts on ecological features from the grid connection construction could be managed through mitigation and (if required) compensation, and that during construction, maintenance and decommissioning, low ground pressure vehicles will be used to access the route and no significant impacts on the surrounding habitat are expected.

The footprint of the UGC installation works would be restricted in extent to minimise disturbance of habitats. The footprint of the UGC installation is typically limited to the width of the trench (generally a few metres) and associated working corridor. Excavated material will, where suitable, be reused as backfill to reinstate the ground to its pre-construction condition. Temporary access arrangements may be required along the cable route during construction; however, no permanent new access tracks are anticipated.

Habitat surveys for the Proposed Varied Development (as reported in **Chapter 9** of the EIA Report), have identified that the landscape is dominated by conifer plantation woodland of low ecological value. Remnant degraded modified bog underlies much of this woodland, including the PGR (refer to **Figure 1.2**), however all on-site bog is significantly degraded and not currently active. Potential impacts on this habitat during construction would comprise localised disturbance, compaction and minor, temporary

disruption to surface hydrology associated with trenching and access. These effects would be short-term and spatially limited due to the narrow working width, the progressive nature of construction along the route, and the use of low ground pressure machinery. Following installation, all disturbed areas would be reinstated, allowing recovery of vegetation and hydrological function.

The PGR avoids any areas of ornithological interest such as designated sites. It is assumed that in accordance with standard good practice, works will be timed to avoid the bird nesting season and where this is not possible, pre-construction checks will be carried out to identify any active nests in the area.

Construction activities have the potential to result in temporary disturbance to protected species, including mammals (e.g. badger and otter) and bats, through noise, vibration, vegetation clearance and human presence. Baseline surveys undertaken in support of the Proposed Development (as reported in **Chapter 9** of the EIA Report), which entirely encompasses PGR, confirm that the Proposed Varied Development site supports a limited assemblage of species typical of managed forestry landscapes. Otter is present within the wider area, with activity confined to commuting and foraging along watercourses and no holts or couches identified within the site. Bat activity is generally low, dominated by common species, with limited evidence of roosting and use of the site primarily for commuting and foraging along woodland edges and linear features. Evidence of badger and pine marten indicates opportunistic use of the site for foraging and movement, although no setts or dens have been recorded. Red squirrel is considered absent or present at very low levels, and water vole is considered unlikely to be present. Reptiles and amphibians may occur locally in suitable habitats. Overall, the site is not considered to support significant breeding or resting resources for protected species, and its value is limited to local-scale use for foraging and commuting.

Additionally, it is assumed that that pre-construction surveys will be carried out for protected species, and if required, works exclusion zones will be implemented around protected species breeding and/or resting sites during construction.

The combined effects of the construction/installation of the grid connection with the effects reported in **Chapter 9: Ecology** and **Chapter 10: Ornithology** of the EIA Report in respect of the Proposed Varied Development construction are not likely to give rise to significant effects on protected sites, habitats and species. Construction/installation would be temporary in nature, restricted in extent and confined to small areas, shifting steadily along the short linear grid route as works advance.

The footprint of the UGC installation works would be restricted in extent to minimise disturbance of habitats. The UGC would be installed in accordance with relevant best practice construction techniques, and take into account relevant ecological data in order to comply with protected species legislation. Updated baseline survey information for habitats, and protected species would be required at the time of any forthcoming application by SPEN (if required) or prior to construction, to inform assessment of impacts and identify requirements for specific mitigation. On the assumption that significant effects to habitats and species can be appropriately mitigated, it is not considered that there is potential for significant effects on ecological or ornithological receptors as a result of the construction of the UGC.

3.4.3 Assessment of Likelihood of Operational Effects

The completed UGC works would result in no permanent above ground structures. Taking account of the design of the PGR, available data, and the assumed application of standard good practice by SPEN to refine the grid connection design informed by analysis of survey data, significant ecological and ornithological effects are not anticipated to arise from the operation of the proposed grid connection.

The combined effects of the operation of the grid connection with the effects reported in **Chapter 9: Ecology** and **Chapter 10: Ornithology** of the EIA Report in respect of the Proposed Varied Development operation are not likely to give rise to the potential for significant effects on protected sites, habitats and species.

3.5 Cultural Heritage and Archaeology

3.5.1 Baseline

There are no known undesignated heritage assets (i.e assets with no statutory protection) within the PGR or within close proximity to the likely construction corridor. Three undesignated cultural heritage assets have been identified within 500 m of the PGR, which are identified on **Figure 1.2**:

- HA1, located approximately 65 m north of the PGR (adjacent to a tributary of the Craigengillan Burn) - lengths of field boundary walling as recorded on the Six-inch 1st Edition OS map of 1853. The field survey for the Proposed Varied Development identified the boundary comprising drystone walling to a height of c. 1.2 m and largely intact;
- HA7, located approximately 225 m south-east of the PGR – a sheep ree not visible in LIDAR data and considered to have been destroyed by forestry deep ploughing with no remaining archaeological significance; and
- MDG25438, located approximately 370 m north of the PGR – a sheepfold with no substantial remains visible in LIDAR data and considered to have been destroyed by forestry deep ploughing with no remaining archaeological significance.

The nearest statutorily designated cultural heritage assets to the PGR are:

- Scheduled Monument (SM) 2238 (Craigengillan, cairn) approximately 500 m north-east of the PGR;
- SM1095 (Stroanfreggan Craig, fort) approximately 2.5 km south-east of the PGR; and
- SM1043 (Stroanfreggan Bridge, cairn), approximately 3.2 km south-east of the PGR.

There are no other designated cultural heritage assets within 5 km of the PGR.

The entirety of the PGR crosses coniferous plantation land, where archaeological remains in the wider site area have largely been identified as destroyed or disturbed by this land use (refer to **Chapter 11: Cultural Heritage** of the EIA Report). As with the wider Proposed Varied Development site, the level of archaeological potential within the PGR is considered to be low.

3.5.2 Assessment of Likelihood of Construction/Installation Effects

There is a low potential for direct physical impact on undesignated assets within the PGR from the construction of the proposed grid connection. Any such impacts can largely be avoided by careful design if required (such as micro-siting of any UGC to avoid assets where possible). Where avoidance is not possible, it is assumed standard mitigation measures such as excavation, recording and field surveys will be implemented.

Chapter 11 of the EIA Report sets out committed mitigation to ensure protection of assets within the site, namely marking out visible remains and avoidance during construction. No likely significant effects were identified. All known assets are well set back from the PGR. There is therefore not considered to be any potential for additional or in-combination effects on the asset from construction of Proposed Varied Development and its grid connection.

No other cultural heritage assets have been identified, which would have the potential to experience significant in-combination effects from the construction of the Proposed Varied Development and its grid connection.

3.5.3 Assessment of Likelihood of Operational Effects

There would be no potential for setting impacts of nearby assets as a result of the UGC during operation. Likewise, it is considered that there would be no likelihood of operational effects to archaeology once installation of the UGC has occurred as all mitigation measures will have been implemented. There is therefore considered to be no potential for significant in-combination effects arising from the operation of the Proposed Varied Development and its grid connection on cultural heritage assets.

3.6 Geology, Peat, Hydrology and Hydrogeology

3.6.1 Baseline

There are no watercourses within 50 m of the PGR. The closest water feature is a tributary of the Craigengillan Burn, located approximately 65 m north of the PGR at its closest point, and at a higher elevation (refer to **Figure 1.2**).

The Private Water Supply (PWS) survey undertaken for the Proposed Varied Development (as reported in **Chapter 13** of the EIA Report) did not identify any PWS within 250 m of the PGR.

As noted in **Section 3.4** above, the PGR is located within a habitat of coniferous woodland plantation, dominated by non-native commercial tree species of low ecological value and generally low biodiversity. Remnant degraded modified bog underlies much of this woodland, including the PGR (as shown on **Figure 1.2**), however all on-site bog is significantly degraded and not currently active (as reported on in **Chapter 9** of the EIA Report). There are no areas of Ground Water Dependent Terrestrial Ecosystems (GWDTE) present within the Proposed Varied Development site and therefore no potential for the PGR to impact on these habitats.

The BGS published bedrock geology mapping indicates the PGR to be underlain by Caradoc aged rocks comprising of Portpatrick Formation Wacke. The Portpatrick Wacke is described as a metamorphosed turbidite and siltstone sequence and as a

low productivity aquifer comprising highly indurated greywackes with limited groundwater in near surface weathered zone and secondary fractures.

The NatureScot Carbon and Peatland Map 2016 shows the entirety of the PGR and its immediate surroundings as located on a Class 5 area with no peatland habitat present. This is consistent with the site-specific survey data obtained for the Proposed Varied Development, which indicates that peat located by the Proposed Varied Development infrastructure nearest to the PGR is limited in extent and depth (<0.5 m depth).

There are no geological or water dependent designated sites located within the PGRC or its vicinity.

3.6.2 Assessment of Likelihood for Construction/Installation Effects

There is potential for disturbance and/or excavation of peat soils to construct the UGC, although the development footprint would be limited. Based on available BGS mapping, NatureScot Carbon and Peatland Map 2016, and survey data for the Proposed Varied Development, the presence of peat within the PGR is minimal. Where the PGR crosses modified bog, any impact would be minor and localised due to the small footprint of the grid connection and current degraded status of the habitat in this location.

There is potential for silty run-off into watercourses during construction of the proposed grid connection. However, the PGR maintains a 50 m set back distance from watercourses and does not approach closer than approximately 70 m at its nearest points. Construction works would be undertaken in accordance with standard good practice, including drainage control and pollution prevention measures.

Assessment of PWS for the Proposed Varied Development has identified the nearest PWS to the PGR at over 1.5 km away, which is not considered to be hydrologically connected. Regardless, as set out in **Section 3.1**, it is assumed SPEN will commit to industry standard good practice mitigation measures, including development and implementation of a CEMP and pollution prevention measures to minimise the potential for adverse effects during construction.

Potential effects relating to pollution, erosion, sedimentation, and changes in surface water or groundwater flow would be controlled through embedded mitigation and standard good practice measures (including SuDS, buffers to watercourses, and pollution prevention).

Taking account of the available information and application of industry standard good practice measures, no likely significant effects on geology, hydrology, hydrogeology and peat have been identified.

3.6.3 Assessment of Likelihood for Operational Effects

Once construction is complete, no significant effects from the operation of the grid connection on geology, hydrology, hydrogeology and peat are anticipated.

No likely significant combined effects of the operation of the grid connection and the Proposed Varied Development have been identified.

3.7 Traffic and Transport

3.7.1 Baseline

The PGR is not within or alongside any public roads and is entirely within commercial forestry plantation located within the Proposed Varied Development site. The nearest public road to the PGR is the unclassified C35S, a single track rural road adjacent to the Proposed Varied Development site boundary at approximately 1.1 km east of the PGR. This road connects the B729 near Stahanna with Lorg Bridge.

It is expected that access to the PGR during construction will be the same as that proposed for the Lorg Grid Connection OHL. This would be from an existing access junction off the C35S currently used to support forestry activities in the vicinity of the PGR, approximately 1.2 km east. Access could also be gained via the proposed access point for the Proposed Varied Development, which is an existing junction off the B729 located approximately 2.9 km south of the PGR.

It is assumed that no new permanent tracks will be required to gain access to the PGR, as vehicles can utilise existing forestry tracks leading from the C35S, with off-road vehicles or temporary trackway used where necessary. There is also potential for the grid connection works to make use of the access track network delivered as part of the Proposed Varied Development, thereby reducing the need for additional temporary access provision.

3.7.2 Assessment of Likelihood of Construction/Installation Effects

Grid connection works are linear in geographical extent and associated construction traffic impacts would be of short duration at any one location.

As noted in **Section 3.1**, it is assumed that SPEN will commit to implementing a CEMP, and it is reasonable to assume that industry-standard construction traffic management practices will be captured within the CEMP or a separate Construction Traffic Management Plan (CTMP).

No likely significant effects on the local transport network are therefore anticipated.

As set out in **Chapter 15: Access, Traffic and Transport** of the EIA Report, a CTMP will also be implemented to suitably manage construction traffic from the Proposed Varied Development. Significant in-combination effects on the local transport network from construction of the Proposed Varied Development and its grid connection are therefore not considered likely.

3.7.3 Assessment of Likelihood of Operational Effects

During operation of the UGC associated with the Proposed Development, it is not considered that there would be potential for significant effects on the transport network.

3.8 Noise and Vibration

3.8.1 Baseline

The PGR is within an environment that is rural in nature, with large areas of forestry, hills and valleys in the immediate surroundings. The existing baseline noise environment of the route is likely to be characterised by 'natural' sources such as wind,

flowing water and disturbed vegetation, as well as noise from forestry activity. Grid connection works are linear in geographical extent and associated construction noise would be of short duration at any one location.

3.8.2 Assessment of Likelihood of Construction/Installation Effects

A small number of residential properties are located within the wider vicinity of the Proposed Varied Development and the PGR, at a distance of more than 1.5 km (refer to **Section 3.3**). These properties could potentially experience short-term increases in noise during installation of the UGC.

Works would be controlled by the Control of Pollution Act 1974, and the Control of Noise (Codes of Practice for Construction and Open Sites) (Scotland) Order 1985. As noted in **Section 3.1**, it is assumed likely SPEN will commit to implementing a CEMP, and it is reasonable to assume that this would include industry standard noise control measures in accordance with British Standard (BS) 5228-1:2009+A1:2014, Code of practice for noise and vibration control on construction and open sites - Noise.

The standards generally apply to long-term construction projects where receptors are exposed to construction noise for longer than one month, noting that shorter term and higher levels of construction noise are generally acceptable provided such effects are minimised through the adoption of Best Practicable Means (BPM) and the residents are given suitable advance notice of the works. Where noisy construction activities are required in the vicinity of residential properties (considered unlikely given the distance of the PGR to residential properties), it is reasonable to assume that SPEN would implement industry standard measures including notifying the residents in advance of the works, and, if necessary, adjusting working hours to minimise noise effects. Further mitigation is not anticipated to be required, due to the short duration of potential noise effects.

The combined effects of the construction/installation of the grid connection with the effects reported in **Chapter 14: Noise** of the EIA Report in respect of the Proposed Varied Development construction are not likely to give rise to significant noise effects. Construction/Installation would be temporary in nature, restricted in extent and confined to a small area, relatively remote from sensitive noise receptors.

3.8.3 Assessment of Likelihood of Operational Effects

The potential for noise arising from the proposed grid connection would arise only during the construction period as there would be no potential for discernible noise impacts during the operational period. There would also therefore be no potential for combined noise effects from the operation of the grid connection with the operational noise effects from the Proposed Development, as reported in **Chapter 14** of the EIA Report.

3.9 Other Issues

Other issues considered in the EIA Report for the Proposed Varied Development include aviation and shadow flicker.

The above issues are not applicable to the proposed grid connection, due to the nature of construction and operation of an UGC.

4.0 Conclusion

4.1 Summary of Likely Significant Effects

This Appendix sets out the key environmental considerations relating to the construction and operation of the Proposed Varied Development's grid connection, as identified by SPEN.

While the final connection route and technology will be confirmed by SPEN, the assessment has considered the Preferred Grid Route as well as the potential for the grid route to diverge, to ensure that the likely significant environmental effects are robustly understood at this stage.

The parameters used within which to appraise the likelihood of significant environmental effects include:

- the Preferred Grid Route identified by SPEN (see **Figure 1.1**);
- the indicative proposed grid connection design identified by SPEN;
- assessment of the construction/installation and operational phases; and
- the potential for decommissioning effects is assumed to be no worse than those expected to arise at construction/installation.

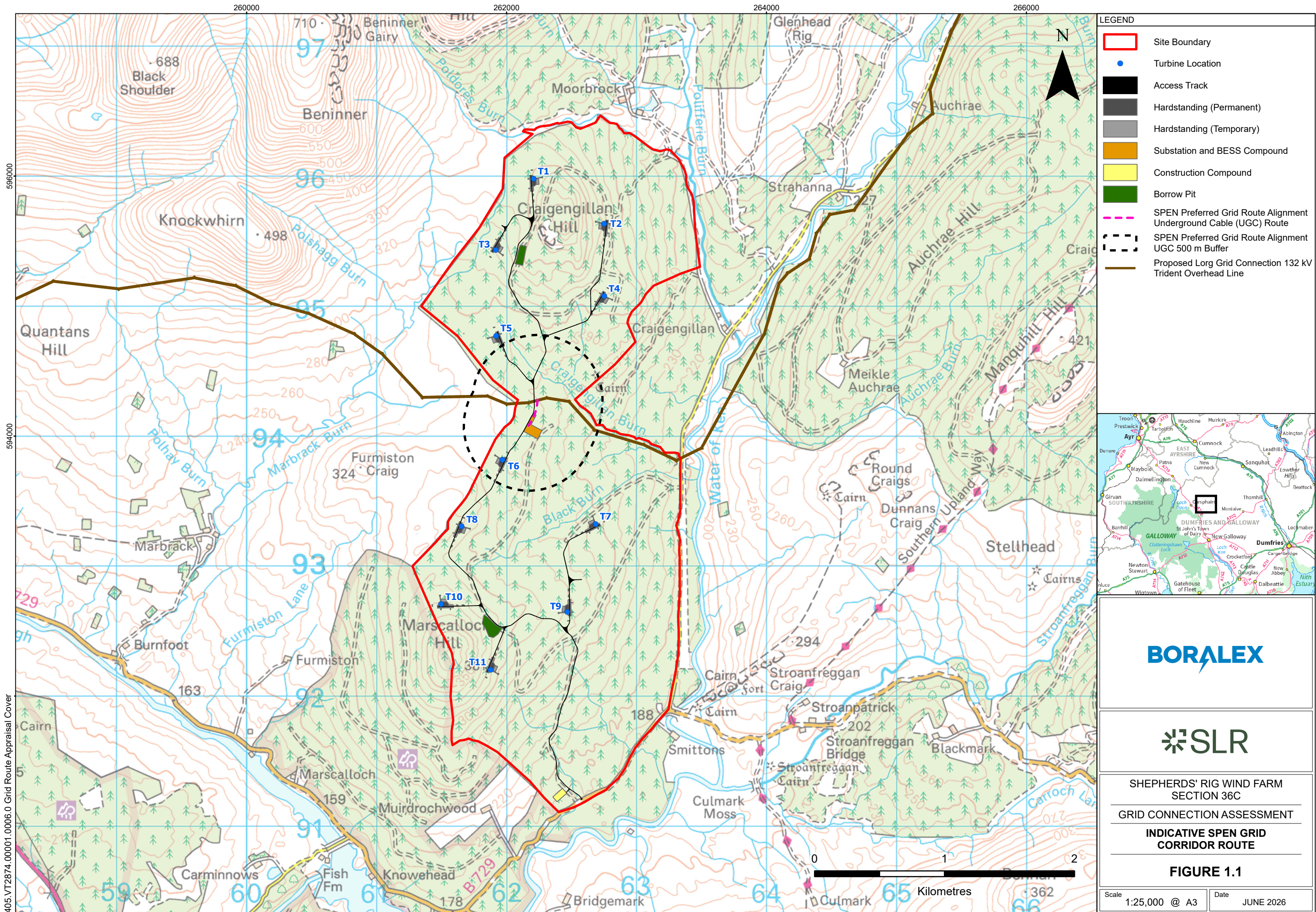
It has been assumed that as standard good practice, primary mitigation measures will be integrated into the iterative design process for the grid connection, aimed at minimising potential effects by considering key sensitivities, constraints, and opportunities.

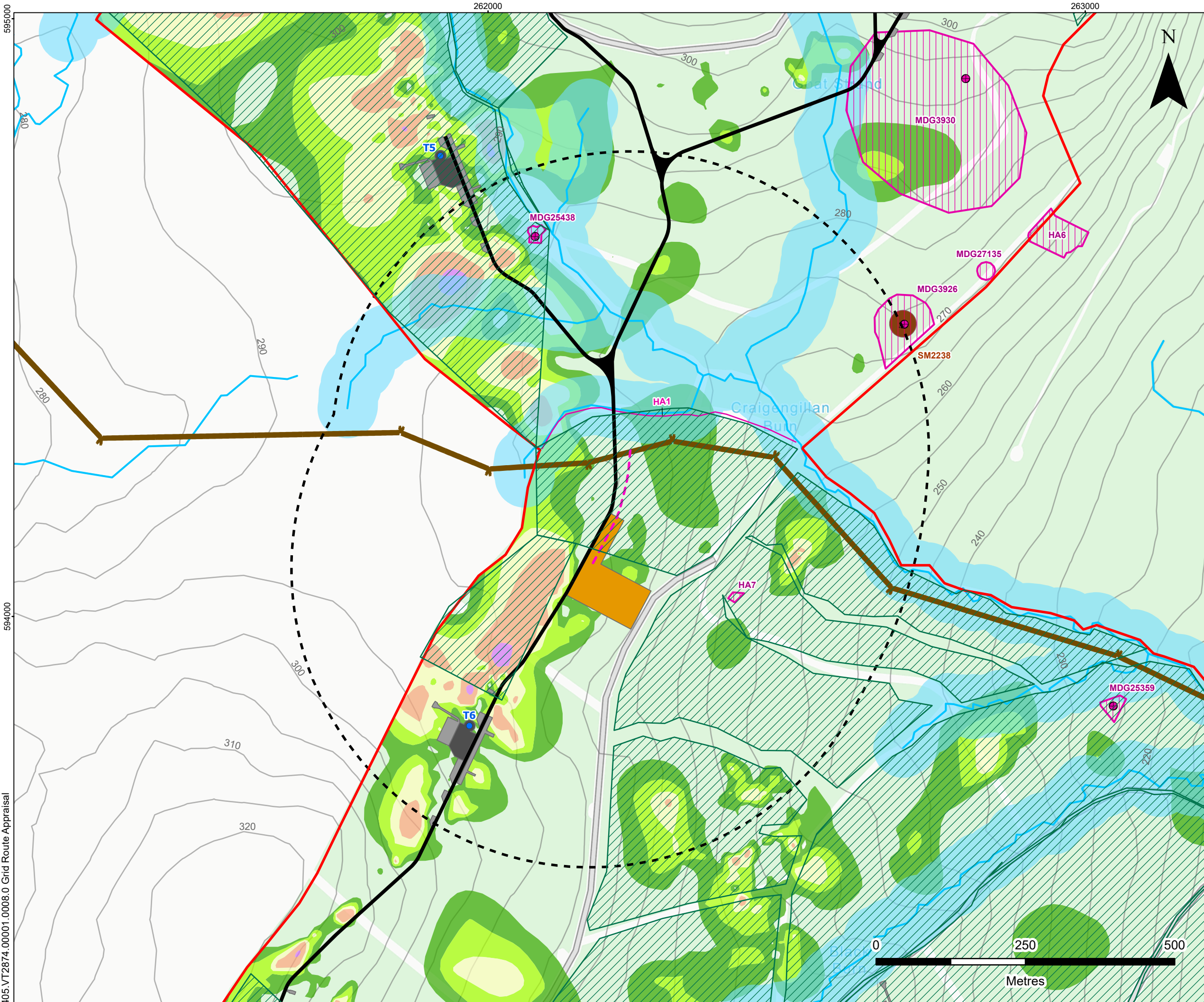
It is considered reasonable to assume that planning and legal requirements and relevant best-practice guidance will also be applied during construction to minimise environmental effects, including adherence to GPP1, GPP5 and GPP6; implementation of a CEMP; and implementation of Best Practicable Means under applicable pollution and noise control legislation.

This assessment has not identified any likely significant effects arising from the proposed grid connection, nor any likely significant in-combination effects from the grid connection and the Proposed Varied Development.

It is noted that the findings of this assessment could be subject to change depending on the final route and grid connection type chosen by SPEN; and the final connection alignment will be subject to SPEN's own statutory environmental duties. Further detailed assessment will be undertaken by SPEN as part of an application for consent (if required), supported by more advanced design information, to ensure that the final grid connection solution is environmentally responsible, technically robust and in alignment with relevant planning and regulatory requirements.

Appendix A Figures





LEGEND

- Site Boundary
- Turbine Location
- Hardstanding (Permanent)
- Hardstanding (Temporary)
- Substation and BESS Compound
- SPEN Preferred Grid Route Alignment
- Underground Cable (UGC) Route
- SPEN Preferred Grid Route Alignment UGC 500 m Buffer
- Proposed Long Grid Connection 132 kV
- Trident Overhead Line

Heritage Constraint

Known Heritage Asset (Non-designated)

- Location
- Line
- Area
- Scheduled Monument (Centre Point)
- Scheduled Monument

Hydrology Constraint

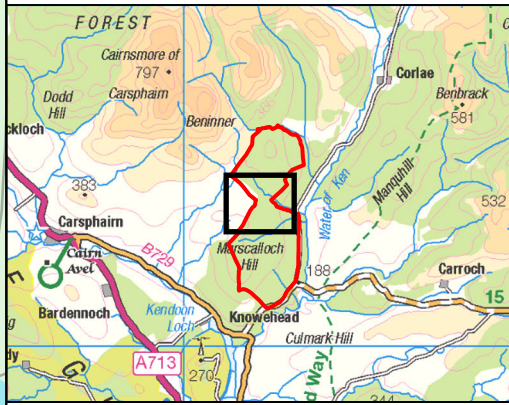
- Watercourse (OS OpenMap Local)
- Watercourse and Waterbody 50 m Buffer

Peat Constraint

- Modified Bog Habitat

Peat Depth

- 0 - 0.5 m
- > 0.5 - 1.0 m
- > 1.0 - 1.5 m
- > 1.5 - 2.0 m
- > 2.0 - 3.0 m
- > 3.0 - 4.0 m



BORALEX

SLR

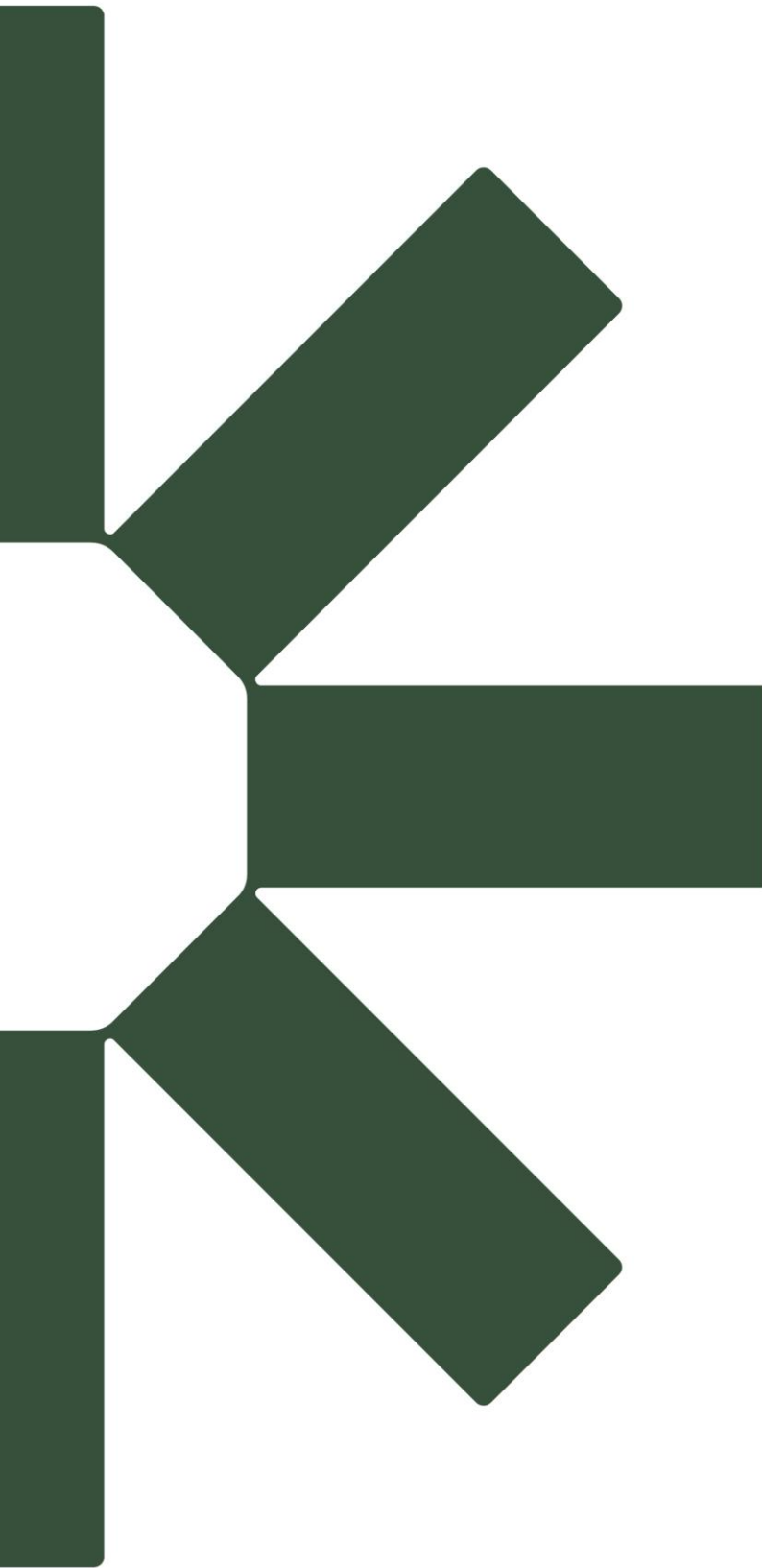
SHEPHERDS' RIG WIND FARM
SECTION 36C

GRID CONNECTION ASSESSMENT

INDICATIVE SPEN GRID
CORRIDOR ROUTE CONSTRAINTS

FIGURE 1.2

Scale 1:6,000 @ A3 Date JULY 2026



Making Sustainability Happen