Technical Appendix 3.1

Grid Connection Assessment

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1 Introduction and Background

1.1 Background

1.1.1 The Proposed Development will require a grid connection from the on-site substation to the Grid Supply Point (GSP), which will require consent under Section 37 (S37) of the Electricity Act 1989. The S37 consenting process is entirely separate to the S36 consent currently being sought for the Proposed Development.

1.1.2 The S37 consent application will be made by SP Transmission plc (SPT)[1], the Transmission Network Operator (TNO), who are responsible for the transmission and distribution of electricity in the Proposed Development area. The design of the grid connection for the Proposed Development is the responsibility of SPT and a S37 application will be required to assess the finalised grid connection route at that time.

1.1.3 As outlined in **Chapter 3** of the Environmental Impact Assessment (EIA) Report, it is currently proposed by SPT that the grid connection for the Proposed Development would comprise a wood pole overhead line (OHL) from the Proposed Development substation, with a route approximately 3.0 kilometres (km) northwards to meet with another proposed overhead line, before routing south towards the consented Redshaw Transmission Substation. It is currently anticipated that approximately 1 km of the northern section of this route would comprise an underground cable (UGC).

1.1.4 The grid connection is the responsibility of SPT who is responsible for the design, routeing, land assembly, assessment of environmental effects (including cumulative/in combination effects) and the separate S37 consent process, including public consultation.

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

1.2 Approach to Assessment

1.2.1 Prior to the NESO UK 2025 Grid Connections Reform process, SPT completed a routeing assessment between the Proposed Development's on-site substation and the proposed Bankend Rig III OHL, which routes south-east to the Redshaw Transmission Substation.

1.2.2 This assessment provides an overview of the grid connection currently being proposed by SPT. Information is provided on the grid connection type and the preferred route option (corridor and route alignment) identified by SPT, together with a proportionate assessment of likely significant environmental effects of the grid connection in combination with the Proposed 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 SPT post Connections Reform; and the final connection alignment will be subject to SPT's own statutory environmental duties under the Electricity Act 1989 and landowner requirements.

1.2.3 This assessment considers only the grid connection route from the Proposed Development substation to the currently proposed point of connection (tee-in) with the Bankend Rig III OHL. The Bankend Rig III OHL and its onward connection to the Redshaw Transmission Substation forms part of the wider transmission network intended to facilitate connections for multiple developments within the wider area and not arising solely as a consequence of the Proposed Development. As such, this infrastructure is not directly attributable to, nor dependent on, the Proposed Development and may be progressed independently by SPT. As such, the potential for environmental effects associated with the Bankend Rig III OHL beyond the tee-in point are not considered in this Technical Appendix.

[1]Note that SPT is a regulated network business that sits within parent organisation ScottishPower Energy Networks (SPEN). It is understood from available documentation that SPT will be the applicant for the Proposed Development grid connection S37 application. However, SPEN branding is used on reporting and figures associated with the routing. For the purposes of this report, SPEN and SPT are used interchangeably.

1.2.4 This assessment follows the same requirements as Volume 1 of the EIA Report (refer to **Chapter 4**). Namely, this assessment follows the requirements of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 and relevant good practice guidance.

1.2.5 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 4** of the EIA Report should be consulted for more detail on relevant legislation, policy and guidelines.

1.2.6 The process undertaken to assess environmental effects as reported in this assessment follows the EIA process and assessment of effects outlined in **Chapter 4** 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

1.3.1 As noted above, the grid connection route and construction type are not certain but are assumed based on information available from work undertaken by SPT at the time of writing this Technical Appendix.

1.3.2 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 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."*

1.3.3 It should be noted that SPT 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, SPT 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 SPT.

1.3.4 Based on the information currently available, it is assumed that the Proposed Development's grid connection will be as identified by SPT prior to the NESO UK 2025 Grid Connections Reform process and which is described within this Technical 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 Development.

2 Proposed Development and Grid Connection Description

2.1 The Proposed Development

2.1.1 The Proposed Development is planned to comprise approximately 138 megawatts (MW) of renewable energy generation and energy storage output capacity, consisting of approximately 58 MW of wind energy (from up to eight three bladed horizontal axis wind turbines, six up to 200 metre (m) blade tip height and two up to 180 m blade tip height, with a rotor diameter up to approximately 163 m, and each with a generating capacity of approximately 7.2 MW), approximately 30 MW of solar energy, and approximately 50 MW of long duration electricity storage (LDES) (refer to **Chapter 3** for further information).

2.2 Grid Connection

2.2.1 As noted in **Section 1.1**, the Proposed Development will require a grid connection from the on-site substation to the GSP, which is Redshaw Transmission Substation via the Bankend Rig III OHL. Only the grid connection route to the Bankend Rig III OHL is considered in this assessment.

2.2.2 The grid connection does not form part of the Proposed Development for which S36 consent is sought. However, it is necessary for the Proposed Development to export electricity to the grid.

Proposed Grid Route

2.2.3 Prior to the NESO UK 2025 Grid Connections Reform process, SPT had identified a Preferred Grid Route Corridor (PGRC), within which is the latest Preferred Grid Route Alignment (PGRA) for the proposed grid connection (see **Figure 1.1**). Based on the information currently available, it is reasonable to assume that the PGRA will be the grid connection route for which SPT applies for S37 consent. Given that the final alignment is not certain at this stage, this assessment considers the potential for the grid route to diverge from the PGRA, but it is considered reasonable to assume that it will remain within the PGRC.

2.2.4 The PGRC extends from the Proposed Development substation in the east of the site to the Bankend Rig III OHL approximately 3 km to the north-east, which then routes south-east to the Redshaw Transmission Substation.

2.2.5 The PGRC is located within the eastern part of the Hagshaw Energy Cluster, an area characterised by existing and consented wind energy development and associated grid infrastructure. The operational Douglas West Wind Farm is located to the west of the corridor, while areas of commercial forestry plantation are located to the east. The PGRC is within a landscape of wind development and follows a broadly similar route to existing grid connection infrastructure.

2.2.6 The nearest settlement is Douglas, located approximately 1.3 km east of the PGRC at its nearest point. Other nearby built development comprises scattered rural properties and farms.

2.2.7 It is reasonable to assume 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.

Proposed Grid Connection Design

2.2.8 It is anticipated that the grid connection will comprise an OHL with ancillary infrastructure, including a 1 km section of UGC in the northern section of the route. The total length of the proposed grid connection is approximately 3 km.

2.2.9 The OHL would be carried on Trident wooden poles with galvanised steelwork cross-arms supporting aluminium conductors on insulators. The wood poles have a standard height above ground of 15 m, with the potential to be extended or reduced in height to between 11 m and 16 m as required. The distance between wood poles will average between 80 m and 120 m but can be increased if there is a requirement to span a larger distance, for example to cross a watercourse or water body.

2.2.10 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.

2.2.11 The connection to the Bankend Rig III OHL would be achieved via a tee-in arrangement, whereby the OHL would terminate at a connection point on the Banked Rig OHL. This would typically comprise the installation of a terminal support structure (pole or tower) at the end of the grid connection route, with conductors extended to connect into a corresponding tee structure on the Bankend Rig III OHL.

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

3 Assessment of Likely Significant Environmental Effects

3.1 Introduction

3.1.1 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 SPT when the design is finalised, and presented as part of the grid connection S37 application, which will be subject to its own consultation and determination process.

3.1.2 For the purposes of this assessment, it is assumed that SPT 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 under the Electricity Act 1989. Schedule 9 of the Act requires licence holders to have regard to the desirability of preserving natural beauty, conserving flora, fauna and features of special interest, and protecting cultural heritage. It also requires them to take all reasonable steps to mitigate any adverse environmental effects arising from their proposals. These duties apply to both the design and execution of works, including the installation of overhead or underground electric lines and all associated infrastructure. In practice, this is reflected through established Schedule 9 compliance processes and the integration of environmental mitigation measures directly into project design and construction ('embedded mitigation'). On this basis, it is reasonable to assume that SPT would apply recognised best practice construction methods and incorporate appropriate environmental safeguards throughout the delivery of the grid connection.

3.1.3 It is assumed that as standard good practice, SPT will commit to a full schedule of mitigation measures, likely including the following, to prevent or avoid any significant adverse effects:

- Site Waste Management Plan;
- Construction Environmental Management Plan;
- Species Protection Plan;
- Dust mitigation measures during construction; and
- Pollution prevention measures.

3.1.4 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.

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

3.1.6 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 Development. The technical topics considered in the assessment (**Sections 3.2** to **3.8** below) are the same as those which are considered in the EIA Report, and which will be given consideration by SPT as part of the S37 consenting process for the proposed grid connection.

3.2 Landscape and Visual

Baseline

3.2.1 The PRGC is located within Landscape Character Types defined by rolling moorland that is influenced by the presence of wind farms and associated infrastructure. Wind turbines have become further established as a characteristic feature of the Rolling Moorland landscape character type (LCT 7) with the operational schemes at Cumberhead, Cumberhead West, Dalquhandy, Douglas West, Douglas West Extension, Hagshaw Hill Extension, Hagshaw Hill Repowering and Nutberry, establishing wind energy development as a characteristic feature of the baseline landscape character.

3.2.2 The southern half of the PGRC is within the Douglas Valley Special Landscape Area (SLA) (a local designation applied by South Lanarkshire Council), as are several of the operational wind developments as noted above.

3.2.3 There are five scattered rural properties within 500 m of the PGRC at its closest point (refer to **Figures 1.2** and **1.3**):

- Station House, located approximately 160 m east of the PGRC;
- Blackwood Cottage, located approximately 170 m east of the PGRC;
- Westerhouse, located approximately 270 m north of the PGRC;
- Craigend, located approximately 330 m north of the PGRC; and
- Scrogtonhead Farm, located approximately 440 m south-east of the PGRC.

3.2.4 None of these receptors are within the PRGC itself, and it is reasonable to assume that the final selected grid alignment defined by SPT will be suitably set back from these properties. Screening from woodland is also present between the PGRC and each of Scrogtonhead Farm, Westerhouse, and Craigend.

3.2.5 Of the five identified residential properties, three are also located within 2 km of the Proposed Development, as follows:

- Station House, located approximately 500 m north-east of the LDES;
- Blackwood Cottage, located approximately 500 m north-east of the LDES; and
- Scrogtonhead Farm, located approximately 500 m east of the LDES.

3.2.6 Station House and Blackwood Cottage are financially involved with the Proposed Development.

Assessment of Likely Significant Construction/Installation Effects

3.2.7 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 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.

3.2.8 Potential visual changes associated with the construction/installation of the grid connection would be short-term and temporary in nature, experienced by local path users and occupiers of a small number of residential properties situated in close proximity to the grid connection. Potential construction/installation effects will be short lived and confined to small areas, shifting steadily along the linear route as works advance. It is considered that there is no potential for significant effects on visual receptors during construction/installation.

3.2.9 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.

3.2.10 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 Development construction.

Assessment of Likely Significant Operational Effects

3.2.11 The UGC section of the grid connection 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 Development and the UGC section of the grid connection.

3.2.12 OHL structures can introduce new vertical and linear features that contrast with existing landform and land cover.

3.2.13 The Douglas Valley SLA has been acknowledged to be able to accommodate wind energy related development and its associated infrastructure without detrimentally altering the perception or enjoyment of the core SLA landscape. This is evident with the presence of operational wind farms and related grid infrastructure, including OHLs and UGCs, within the SLA.

3.2.14 It is anticipated there would be a relatively small number of visual receptors impacted by the proposed grid connection, and likely effects on visual amenity overall are expected to be minimal. From a visual perspective, receptors will see a negligible change in views as the PGRC is within a landscape of wind farm and associated development and screened from a number of key views by existing woodland.

3.2.15 As discussed in **paragraph 3.2.5** above, Scrogtonhead Farm, Station House and Blackwood Cottage are the only three properties within 2 km of Proposed Development infrastructure, which also have potential close-range views of any new OHL.

3.2.16 **Chapter 6** of the EIA Report concludes a major significant (not overbearing) effect at Scrogtonhead Farm, Station House and Blackwood Cottage. The addition of the proposed grid connection (OHL at this location) would introduce another element of energy infrastructure to views from Station House and Blackwood Cottage. However, only a short section of the grid connection would be visible from these properties, and this would be within a wider landscape of operational wind farms and associated grid connections. It is considered that the OHL would be largely screened from views at Scrogtonhead as the result of a combination of existing forestry and topography.

3.2.17 It is assumed that SPT will commit to developing and integrating additional measures (where necessary and appropriate), to integrate the grid connection into the surrounding landscape and views, informed by an understanding of the existing landscape character, pattern and context. Examples of industry-standard secondary mitigation considerations include the use of lower height structures where feasible, careful spacing of poles, and micrositing to take advantage of natural landform screening can also help limit visibility. In areas with existing woodland or vegetation, routing the line adjacent to these features can soften views and break up the linear form.

3.2.18 Given this, likely significant landscape and visual effects from the operation of grid connection are not anticipated. No likely significant in-combination landscape and visual effects of the Proposed Development and its grid connection have been identified.

3.3 Ecology and Ornithology

Baseline

3.3.1 The PGRC traverses a range of habitats, including grassland, heath and mires, modified bog, localised coniferous plantation woodland, and Ancient Woodland parcels.

3.3.2 There are no designated sites within or near to the PGRC (refer to **Figures 1.2** and **1.3**). The nearest designated site is Miller's Wood Site of Special Scientific Interest (SSSI), located approximately 1.8 km south of the PGRC.

3.3.3 Much of the east of the PGRC is located within or immediately adjacent to Ancient Woodland, but this woodland is avoided by the PGRA. The Ancient Woodland is of plantation origin.

Assessment of Likely Significant Construction/Installation Effects

3.3.4 There is potential for sensitive habitats, protected species and the above-noted designated sites to be impacted by direct physical effects of construction/ installation of an OHL or UGC.

3.3.5 It is anticipated that the potential impacts on ecological features from the grid connection construction could be managed through mitigation and 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.

3.3.6 The footprint of the OHL poles (typically 6 m^2 at each pole site) is minimal, and the majority of excavated material will likely be replaced to enable the surface around the poles to be reinstated to preconstruction conditions. No new tracks are anticipated to be required to gain access to the pole sites.

3.3.7 Habitat surveys for the Proposed Development have identified areas of wet modified bog within a section of the PGRC (**Figure 1.3**). Potential impacts on this habitat during construction could comprise localised disturbance, compaction and limited disruption to surface hydrology associated with temporary access and pole installation. However, these effects would be highly localised and temporary, given the small footprint of individual pole locations, the absence of permanent access tracks, and the use of low ground pressure vehicles. Disturbed areas would be reinstated following construction, allowing recovery of vegetation and hydrological function.

3.3.8 The PGRC avoids any areas of ornithological interest such as designated sites, and the PGRA avoids woodland. 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.

3.3.9 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 7** of the EIA Report), which partly encompasses and is directly contiguous with the PGRC, confirm that badger is present within the wider area, with a number of setts recorded. Otter activity has also been recorded in the form of spraints along on-site watercourses; however, no holts or couches were identified, suggesting that otter use in the area is limited to commuting and occasional foraging. Given the similarity of habitats and the continuity of the landscape across the Proposed Development and PGRC, these findings are considered to be likely representative of the wider grid connection corridor.

3.3.10 The Proposed Development site also supports commuting and foraging bats, but with limited evidence of roosting activity and no known roost sites of conservation importance identified. Similar habitat conditions extend across the PGRC, and as such, bat activity within the corridor is expected to be comparable. Disturbance effects on bats are expected to be limited, as construction works would be largely undertaken during daylight hours when bats are inactive.

3.3.11 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.

3.3.12 Although the PGRC crosses an area of Ancient Woodland (of plantation origin), this area is limited in extent and avoided by the PGRA. It is reasonable to assume that the finalised grid route will avoid impacts to Ancient Woodland.

3.3.13 The combined effects of the construction/installation of the grid connection with the effects reported in **Chapter 7: Ecology** and **Chapter 8: Ornithology** of the EIA Report in respect of the Proposed 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 linear grid route as works advance and can be adequately managed by standard mitigation measures.

Assessment of Likely Significant Operational Effects

3.3.14 During operation of the grid connection, it is not considered that there is potential for significant effects on habitats, Ancient Woodland, or terrestrial protected species.

3.3.15 With respect to birds, a new OHL introduces the potential for collision risk, particularly for species undertaking regular flight movements or those known to be vulnerable to interaction with overhead wires. However, baseline ornithological data for the Proposed Development indicates generally low levels of flight activity across the area, with limited 'at-risk' flights recorded and very low predicted collision rates for key species. The Proposed Development site and its immediate surroundings are not identified as a key flight corridor, and there is no evidence of frequent movements by large flocks or high densities of particularly collision-prone species. While some breeding waders (e.g. curlew) are present locally, flight activity is typically low and closely associated with territories, thereby limiting exposure to overhead infrastructure. In addition, black grouse (recognised as sensitive to collision risk) are considered likely to be absent from the Proposed Development site and wider Hagshaw Energy Cluster at present, with no recent evidence of lekking or regular activity.

3.3.16 Taking these factors into account, and considering the existing influence of wind farm and grid infrastructure in the surrounding landscape, the likelihood of bird collision with the proposed OHL is considered to be low. It is also assumed that flight activity surveys will be undertaken and analysed by SPT to identify any potential collision hotspots within the PGRC, and that the grid connection will be designed to avoid such areas where practicable. Where avoidance is not possible, it is reasonable to assume that mitigation in the form of line marking would be implemented to reduce the risk of collision.

3.3.17 Taking account of the design of the PGRC and PGRA, available data, and the assumed application of standard good practice by SPT 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.

3.3.18 The combined effects of the operation of the grid connection with the effects reported in **Chapter 7: Ecology** and **Chapter 8: Ornithology** of the EIA Report in respect of the Proposed Development operation are not likely to give rise to the potential for significant effects on protected sites, habitats and species.

3.4 Geology, Peat, Hydrology and Hydrogeology

Baseline

3.4.1 The PGRC crosses multiple small watercourses, namely the Broadlea Burn and the Alder Burn, which form part of the wider Douglas Water catchment (see **Figures 1.2** and **1.3**).

3.4.2 There is potential for there to be Private Water Supplies (PWS) within or in close proximity to the PGRC. The PWS survey undertaken for the Proposed Development (as reported in **Chapter 9** of the EIA Report) did not identify any PWS within 250 m of the PGRC, however the study area applicable to that assessment was focused on the Proposed Development site and its vicinity, and did not extend to the full length of the PGRC.

3.4.3 The PGRC and PGRA crosses an area of wet modified bog. It is noted in **Chapter 9** that this area is not predominately sustained by groundwater therefore is unlikely to be a Groundwater Dependent Terrestrial Ecosystem (GWDTE). For the remainder of the PGRC, no substantial wetland areas, which would be expected to comprise GWDTE have been identified.

3.4.4 Bedrock geology is indicated on BGS mapping to largely comprise sedimentary rock sequences of predominantly sandstone and limestone in the west, and coal bearing strata in the east. Superficial geology is predominantly till.

3.4.5 The NatureScot Carbon and Peatland Map 2016 does not show any Class 1 or Class 2 peat within or adjacent to the PGRC. This is consistent with the site-specific survey data obtained for the Proposed Development, which indicated that peat within the Proposed Development site is generally limited in

extent and depth, with the majority of the Proposed Development located on mineral or shallow peaty soils (<0.5 m depth).

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

Assessment of Likely Significant Construction/Installation Effects

3.4.7 There is potential for disturbance and/or excavation of peat soils to construct OHL poles and sections of UGC, although the development footprint would be limited. Based on available BGS mapping and the NatureScot Carbon and Peatland Map 2016, the presence of peat within the PGRC is minimal, with none identified at the proposed UGC sections. Where the PGRA crosses wet modified bog, any impact would be minor and localised due to the small footprint of the grid connection.

3.4.8 There is potential for silty run-off into watercourses during construction of the proposed grid connection. However, the PGRA maintains a 50 m set back distance from named watercourses wherever practicable, (excluding any necessary crossings), and does not approach closer than approximately 30 m at its nearest points. Construction works would be undertaken in accordance with standard good practice, including drainage control and pollution prevention measures.

3.4.9 No details of PWS outwith the Proposed Development Study Area within or near the PGRC are currently known, however it is assumed that details will be obtained and taken into account in ongoing design works for the proposed grid connection. As set out in **Section 3.1**, it is assumed SPT 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.

3.4.10 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).

3.4.11 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.

Assessment of Likely Significant Operational Effects

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

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

3.5 Cultural Heritage

Baseline

3.5.1 One undesignated cultural heritage asset (i.e. assets with no statutory protection) has been identified within or adjacent to the PGRC, however it is not within the PGRA (refer to **Figure 1.3**). This asset recorded in the South Lanarkshire HER (99286), is a possible platform of undulating appearance. It is not visible on aerial photography or Lidar imagery, and a field survey recorded no evidence for the feature.

3.5.2 The nearest statutorily designated cultural heritage assets to the PGRC are:

- Scheduled Monument (SM) 90265 (St Bride's Church, Douglas) approximately 1.3 km south-east of the PGRC;
- SM5425 (Thorril Castle, bastle house) approximately 3.5 km south-east of the PGRC east of Douglas (beyond the M74 from the PGRC); and
- SM4234 (Auchensaugh Hill, cairn) approximately 4.7 km south-east of the PGRC;

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

3.5.4 The Douglas Conservation Area is approximately 1.2 km south-east of the PGRC at its closest point.

3.5.5 The northern half of the PGRC crosses land affected by historical opencast mining and quarrying, where archaeological remains are expected to have been removed or disturbed by those land uses. Other areas comprise moorland and farmland, where there is potential for unidentified archaeological remains and is consistent with the moderate archaeological potential identified for similar landscapes within the Proposed Development site (refer to **Chapter 10: Cultural Heritage** of the EIA Report).

Assessment of Likely Significant Construction/Installation Effects

3.5.6 There is potential for direct physical impact on undesignated assets within the PGRC, from the construction of the proposed grid connection. Such impacts can largely be avoided by careful design (such as careful siting of OHL support poles and/or micrositing 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.

3.5.7 One undesignated asset within the PGRC (99286) is also within the Proposed Development site, approximately 260 m north-west of the Proposed Development substation. **Chapter 10** 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. Although this asset is within the PGRC it is not in conflict with the PGRA. The asset is also not within the construction corridor of the Proposed Development and is well set back from any Proposed Development infrastructure. There is therefore not considered to be any potential for additional or in-combination effects on the asset from construction of Proposed Development and its grid connection.

3.5.8 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 Development and its grid connection.

Assessment of Likely Significant Operational Effects

3.5.9 Potential impacts on the settings of nearby assets, from the operation of the proposed grid connection, are likely to be limited due to the size and scale of the proposed OHL (noting that no settings impacts from sections of UGC would be expected), the distance between the PGRC and identified assets, and existing screening and topography. No likely significant effects are therefore anticipated.

3.5.10 None of the cultural heritage assets near the proposed grid route were assessed as having potential to experience any greater than negligible to minor effects on their settings from the operation of the Proposed Development (refer to **Chapter 10: Cultural Heritage**). There is therefore considered to be no potential for significant in-combination effects arising from the operation of the Proposed Development and its grid connection on cultural heritage assets.

3.6 Noise and Vibration

Baseline

3.6.1 The PGRC passes through environments that are rural in nature and sparsely populated. It passes near, but not through, the village of Douglas. Much of the PGRC and surrounding area comprises agricultural land and moorland interspersed with areas of commercial forestry, woodland, watercourses, restored opencast coal workings and operational wind farms. 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 agricultural and forestry activity and operational wind farms. Grid connection works are linear in geographical extent and associated construction noise would be of short duration at any one location.

Assessment of Likely Significant Construction/Installation Effects

3.6.2 There are a small number of residential properties within or close to the PGRC (refer to **Section 3.2**), which would potentially be subject to increased noise as a result of construction or installation works for the grid connection (OHL or UGC).

3.6.3 Noise generated during construction will diminish quickly as construction progresses, moving the activity away from any noise sensitive receptor such that significant effects are not likely, despite the potential for short-term impacts.

3.6.4 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 **paragraph 3.1.3**, it is assumed likely SPT 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.

3.6.5 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, it is reasonable to assume that SPT 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.

3.6.6 The combined effects of the construction/installation of the grid connection with the effects reported in **Chapter 11: Noise and Vibration** of the EIA Report in respect of the Proposed 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 small areas, shifting steadily along the linear grid connection route as works advance.

Assessment of Likely Significant Operational Effects

3.6.7 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 11** of the EIA Report.

3.7 Access, Traffic and Transport

Baseline

3.7.1 The PGRC is not within or alongside any public roads and is mostly within fields and open grassland/moorland. The nearest public road to the PGRC is Station Road which begins 150 m east of the proposed grid connection and runs eastwards to the A70.

3.7.2 It is expected that access to the PGRC during construction will be from the A70 via Station Road or directly from Junction 11 of the M74, depending on the stage of construction and location of construction activities.

3.7.3 It is assumed that no new permanent tracks will be required to gain access to the OHL pole sites, as construction can be completed by offroad vehicles or trackway.

Assessment of Likely Significant Construction/Installation Effects

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

3.7.5 As noted in **paragraph 3.1.3**, it is assumed that SPT 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).

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

3.7.7 As set out in **Chapter 12: Access, Traffic and Transport** of the EIA Report, a CTMP will also be implemented to suitably manage construction traffic from the Proposed Development. Significant in-combination effects on the local transport network from construction of the Proposed Development and its grid connection are therefore not considered likely.

Assessment of Likely Significant Operational Effects

3.7.8 Operation of the PGRC would not generate regular traffic movements beyond infrequent maintenance visits. No significant traffic and transport effects are expected from the operation of the Proposed Development and its proposed grid connection, separately or in combination.

3.8 Other Issues

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

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

4 Conclusion

4.1 Summary of Likely Significant Effects

4.1.1 This Technical Appendix sets out the key environmental considerations relating to the construction and operation of the Proposed Development's grid connection, as identified by SPT prior to the NESO UK 2025 Grid Connections Reform process.

4.1.2 While the final connection route and technology will be confirmed by SPT, the assessment has considered the Preferred Grid Route Corridor as well as the Preferred Grid Route Alignment, to ensure that the likely significant environmental effects are robustly understood at this stage.

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

- the Preferred Grid Route Corridor identified by SPT (see **Figure 1.1**);
- the indicative proposed grid connection design identified by SPT prior to the NESO UK 2025 Grid Connections Reform process;
- assessment of the construction/installation and operational phases; and
- the potential for decommissioning effects is assumed to be no worse those expected to arise at construction/installation.

4.1.4 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.

4.1.5 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; preparation of a CTMP under the New Roads and Street Works Act 1991; and implementation of Best Practicable Means under applicable pollution and noise control legislation.

4.1.6 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 Development.

4.1.7 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 SPT; and the final connection alignment will be subject to SPT's own statutory environmental duties under the Electricity Act 1989. Further detailed assessment will be undertaken by SPT in due course as part of an application for S37 consent, 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.

5 References

Raeshaw Farms Limited v Scottish Ministers and Energiekontor UK Ltd [2026] CSIH 10 (Scottish Inner House, Court of Session, 17 February 2026). Available at: https://www.scotcourts.gov.uk/media/t4eds4lr/2026csih10-raeshaw-farms-limited-against-scottish-ministers-and-another.pdf

R (Finch) v Surrey County Council and others [2024] UKSC 20 (UK Supreme Court, 20 June 2024). Available at: https://supremecourt.uk/cases/press-summary/uksc-2022-0064

Scottish Government (2017). The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. Available at: https://www.legislation.gov.uk/ssi/2017/101/regulation/18/made

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UK Government (1989). Electricity Act 1989. Available at: https://www.legislation.gov.uk/ukpga/1989/29/contents

UK Government (1997). Town and Country Planning (Scotland) Act 1997. Available at: https://www.legislation.gov.uk/ukpga/1997/8/contents

276000 278000 280000 282000 284000 286000 288000

636000 634000 632000 630000 425.066596.00001.0102.0 Grid Route Assessment

N

Figure 1.2

Figure 1.3

T1 T2 T3 T4 T5 T6 T7 T8

0 1 2 Kilometres

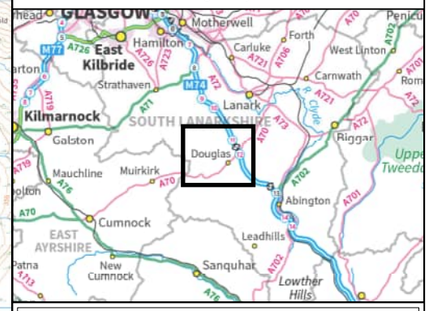
LEGEND

- Site Boundary
- Turbine Location (180 m Tip Height)
- Turbine Location (200 m Tip Height)
- Photovoltaic (PV) Module
- Proposed Development Substation
- Long Duration Electricity Storage (LDES)
- SPEN Preferred Grid Route Corridor
- SPEN Preferred Grid Route Corridor 500 m Buffer

SPEN Preferred Grid Route Alignment

- Overhead Line (OHL)
- Underground Cable (UGC) Route
- Bankend Rig III OHL
- Bankend Rig III OHL UGC Route
- Redshaw Transmission Substation

Note:
SPT is a regulated network business that sits within parent organisation ScottishPower Energy Networks (SPEN). It is understood from available documentation that SPT will be the applicant for the Proposed Development grid connection S37 application. However, SPEN branding is used on reporting and figures associated with the routing. For the purposes of this report, SPEN and SPT are used interchangeably.



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EIA REPORT

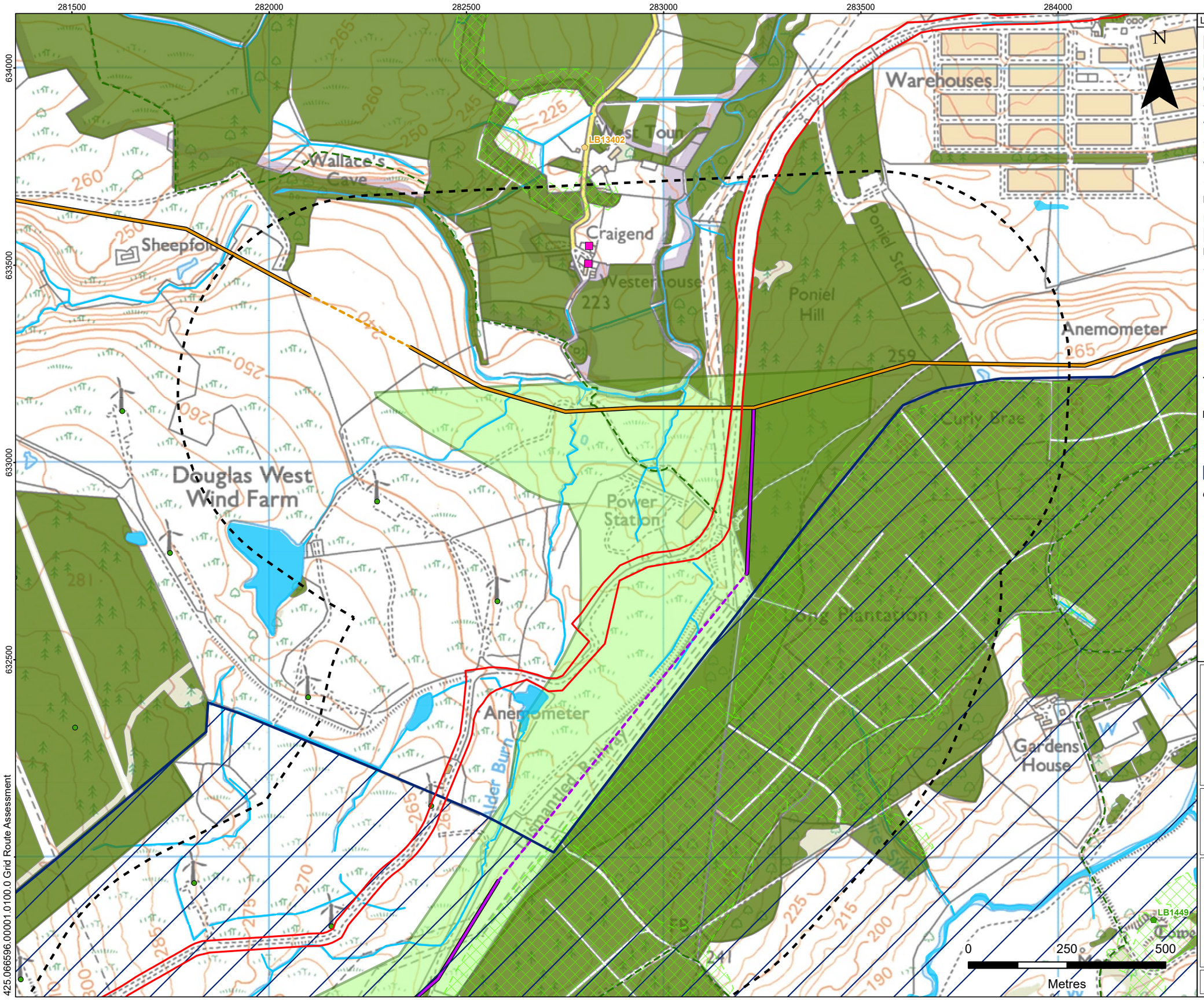
INDICATIVE SPEN GRID CORRIDOR ROUTE

TA 3.1 - FIGURE 1.1

Scale	Date
1:40,000 @ A3	JUNE 2026

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LEGEND

- Site Boundary
- SPEN Preferred Grid Route Corridor
- SPEN Preferred Grid Route Corridor 500 m Buffer

SPEN Preferred Grid Route Alignment

- Overhead Line (OHL)
- Underground Cable (UGC) Route
- Bankend Rig III OHL
- Bankend Rig III OHL UGC Route

Ecology Constraint

- Ancient Woodland
- Other Woodland

Heritage Constraint

Listed Building (Category)

- *B*
- *C*

Watercourse and Flooding

- Watercourse (OS OpenMap Local)
- Waterbody (OS OpenMap Local)

Transport Constraint

- Core Path

Landscape and Visual Constraint

- Potential Residential Receptor within 500 m of the SPEN Preferred Grid Route Corridor
- Douglas Valley Special Landscape Area

Cumulative Wind Farm Turbine Location (Status)

- Operational; Under construction

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INDICATIVE SPEN GRID CORRIDOR ROUTE CONSTRAINTS

TA 3.1 - FIGURE 1.2

Scale 1:9,000 @ A3

Date JUNE 2026

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280500 281000 281500 282000 282500 283000

632000 631500 631000 630500

425.066596.00001.0100.0 Grid Route Assessment

N

T1 T2 T3 T4 T5 T6

Arkney Hill
Blackwood Hill
Rob's Hill
Sheepfold
Scrogton
Scrogtonhead
Broadlea
Station Road
Flush Cottages
Cemetery
Douglas Valley Outdoor Centre
DOUGLAS CONSERVATION AREA
Robshill Burn

0 250 500
Metres

LEGEND

- Site Boundary
- Turbine Location (180 m Tip Height)
- Turbine Location (200 m Tip Height)
- Photovoltaic (PV) Module
- Development Substation
- Long Duration Electricity Storage (LDES)
- SPEN Preferred Grid Route Corridor
- SPEN Preferred Grid Route Corridor 500 m Buffer

SPEN Preferred Grid Route Alignment

- Overhead Line (OHL)
- Underground Cable (UGC) Route

Ecology Constraint

- Ancient Woodland
- Other Woodland

Heritage Constraint

- Undesignated Heritage Asset
- Conservation Area

Watercourse and Flooding

- Watercourse (OS OpenMap Local)
- Waterbody (OS OpenMap Local)

Peat and Geology Constraint

- Marsh/Marshy Grassland /Wet Modified Bog Mosaic
- Unimproved Acid Grassland/Wet Modified Bog Mosaic
- Wet Modified Bog

Transport Constraint

- Core Path

Landscape and Visual Constraint

- Potential Residential Receptor within 500 m of the SPEN Preferred Grid Route Corridor
- Douglas Valley Special Landscape Area

Cumulative Wind Farm Turbine Location (Status)

- Operational; Under construction

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INDICATIVE SPEN GRID CORRIDOR ROUTE CONSTRAINTS

TA 3.1 - FIGURE 1.3

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